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A Publication of the Sleep Research Society, USA
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PRESIDENT'S MESSAGE



It is a great honor to serve as the SRS President and to represent the membership in our common goal of advancing research and training in our field. We have just completed a successful year under the leadership of Ruth Benca, M.D., Ph.D. and thank her for the expertise and enthusiasm she brought to the position. We are also indebted to the hard work and dedication of the Board of Directors and committee chairs and members who have rotated off their position. The

work of these individuals has enabled the SRS to become a more effective and stronger organization. We also thank Board and committee members who retain their position for their continued efforts in constructing a stronger Society, and welcome and thank all new Board and committee members for their service. I am proud to work as president of such a fine society where members volunteer their time freely for the benefit of all.

I also thank the staff in Chicago that has worked hard to make the SRS such a vibrant society. Most notably, Judy Milton is making a huge difference in our ability to conduct business, ensuring a smooth transition as officers rotate over the years. We are also receiving a lot of indirect benefits from our partnership with the American Academy of Sleep Medicine, most notably the time and expertise of staff members.

Our partnership with the Associated Professional Sleep Societies, LLC continues to thrive. This year's 17th APSS Annual Meeting was a success. The attendance, which was projected at 4,600, exceeded the totals of previous meetings and is a testament to the heightened interest in the sleep field. Additionally, the quality of science presented at the meeting continues to increase, with more than 1,100 abstract presentations, 15 postgraduate courses, 47 meet-the-professor sessions, 30 symposia, 7 discussion groups, and 8 invited lecturers. Another effort in this area has been the establishment of the research dinner, co-hosted by the SRS and AASM, at the Annual Meeting. Fifty percent of the revenue raised by this event will be going to SRS for our programs, and

it is another means for members to show their support for the organization and field.

My goal this year is to build on the initiatives achieved in the past year and to offer additional benefits to our members in order to solidify the future of the Society. Our most far-reaching initiative has been the revision of the Sleep Research Society's by-laws. Dr. Benca and the Board of Directors have invested considerable time and thought into these revisions and we are approaching the final stages of the process. With the ultimate goal of strengthening the Society's leadership and committees, the revised by-laws will also strengthen governance of the organization, will allow the Society to vigorously pursue initiatives, and will enable the Society to institute policy designed to advance the organization by facilitating governance that focuses separately on process and policy. Each member received a letter that included notice of the posting of an annotated version of the by-laws on the Society's Web site and instructions on how to vote for the by-laws. I hope all members acted on this call by reviewing the by-laws and voiced their opinion by sending in their ballot.

This year will also focus on training and educational opportunities. The annual Trainee Day continues to successfully provide education and information to student researchers. In an effort to continually improve and enhance trainee-related activities, a presidential task force was appointed to evaluate the effectiveness of current training programs and propose additional initiatives. Additionally, in order to provide all members with the most current information and opportunities, the SRS will broaden the educational programs offered and generate new materials.

We will also continue to strengthen the Society's role in identifying and supporting research opportunities in the field. In mid-July, the National Institutes of Health announced the retirement of Claude Lenfant, M.D. as director of the National Heart, Lung, and Blood Institute. Dr. Lenfant, who served as director since 1982, has been a strong and constant supporter of sleep and government-sponsored sleep research, training and education. Under his leadership, the National Center on Sleep Disorders Research was created, NIH funding for sleep research and grants significantly increased, and the NCSDR's Research Plan was revised, all of which are a testament to his impact on our field. The SRS Research Committee will be proactive in contacting the NIH to stress the importance of the sleep profession and field when considering a replacement for Dr. Lenfant to ensure continued support.



PICKWICK POSTDOCTORAL FELLOWSHIP

The National Sleep Foundation announces its PICKWICK POSTDOCTORAL FELLOWSHIP for basic, applied, and clinical sleep research.

Deadline: December 1, 2003

- Funding support is \$40,000 per year for one or two years
- Available to international applicants
- Easy to apply
- Funding begins in July 2004

Requirements

- Hold an MD, DVM, PhD or DO degree, the degree or subsequent training having been completed within the last five years
- Have a sponsor and plan to conduct research in a recognized American or Canadian program of study or lab with strong mentoring in appropriate area
- Demonstrate aptitude and proficiency in research and interest in pursuing a career in sleep research
- Devote a greater proportion of time to conducting research; not available to applicants holding a faculty position or having received an NIH grant

To apply or for additional information, contact:

National Sleep Foundation
1522 K Street, NW, Suite 500
Washington, DC 20005
202-347-3471, ext. 203
e-mail: nsf@sleepfoundation.org
www.sleepfoundation.org

The SRS is engaged in another exciting opportunity with the NIH. This year, the SRS is working with the National Center on Sleep Disorders Research to co-sponsor, along with other allied sleep organizations, a National Sleep Conference to stimulate translational sleep research. The conference's sessions and discussions will address existing knowledge regarding sleep and sleep disorders and new opportunities for research and information, with the ultimate goals of increasing public and government awareness of issues and encouraging additional funding. In addition, the creation of an SRS research committee will allow for a focus on funding and grants and new opportunities to continue the fantastic research that has occurred in the past few years and stimulate additional research; the committee is already forging ahead with projects and initiatives beneficial to the organization and field.

This is an exciting time for sleep research as our field is on the verge of exciting and profound scientific discoveries. We are also now establishing the foundation needed to grow our Society, offering additional benefits to our members and further promoting our field. During my presidency, you can count on me to be open to suggestions and to always represent the interests of our field.

Emmanuel Mignot, M.D., Ph.D.

Editor's Column

by Larry D. Sanford, Ph.D.

This year's APSS 17th Annual Meeting, which celebrated the 50th anniversary of REM sleep, was a success. In this issue of the *Bulletin*, SRS President Emmanuel Mignot provides a summary of the Annual Meeting in his President's Letter and a separate article, with photos, details the presentations, celebrations, and events.

The feature article in this issue by Dr. Adrian Morrison describes the impact of the animal-rights movement on biomedical research. Given the negative impact this movement has had on research, one has to admire the fortitude of graduate students and beginning scientists who pursue research careers. I (and possibly many of my peers) was able to complete most of my graduate training virtually ignorant of this movement. It truly never dawned on me that this would ever be more than a small fringe element until I was nearing completion of my degree and word came that my department could be targeted in conjunction with an animal-rights demonstration. In those earlier, simpler times, the graduate students conducting research "manned" the buildings overnight until the potential threat had passed. How times have changed. I am sure you will find this article interesting and a thoughtful review of the support of good science and the humane use of animals in research.

As always, your contributions and suggestions for future issues are welcome.

SRS BOARD OF DIRECTORS

The Sleep Research Society membership elected new board members in March. Each new member brings extensive professional experience, expertise in the field and leadership skills to their respective role. These new members join the dedicated individuals who continue their service on the board. The Sleep Research Society members extend special thanks to the newly-elected board of director members and to members whom have served and rotated off the board this summer at the APSS Annual Meeting, including Jodi Mindell, Ph.D., Membership Chair; Joyce Walsleben, Ph.D., Excessive Daytime Sleepiness Section Head; and Jennifer Martin, Ph.D., Trainee Member at Large. The SRS also thanks Eric Nofzinger, M.D. for fulfilling the Trainee Chair position mid-term and commends his work and dedication during the 2002-03 program year. Dr. Nofzinger continues to share his knowledge and leadership capabilities as Excessive Daytime Sleepiness Section Head.

BOARD OF DIRECTORS



Emmanuel Mignot, M.D., Ph.D.
President

Emmanuel Mignot, M.D., Ph.D. is a Howard Hughes Medical Institute Investigator, professor of psychiatry and behavioral sciences, and director of the Center for Narcolepsy at Stanford University School of Medicine in Stanford, California. Dr. Mignot is an active member of the sleep research community, and he is a board member of various organizations.

His primary focus is the study of hypocretins and narcolepsy. His laboratory uses both patient-directed research and animal models (rats, mice, monkeys, and zebrafish) to examine the behavioral, cellular and molecular aspects of the hypocretin system. He has published over 100 peer-reviewed articles and has received numerous awards for his research. He is board certified in sleep medicine.



Sonia Ancoli-Israel, Ph.D.
President-Elect

Sonia Ancoli-Israel, Ph.D. is professor in the department of psychiatry at the University of California, San Diego School of Medicine, director of the Sleep Disorders Clinic at the Veterans Affairs San Diego Healthcare System, co-director of the UCSD GCRC Laboratory of Sleep and Chronobiology and co-director of the Education Unit of the VA

VISN-22 Mental Illness Research, Education and Clinical Center (MIRECC). Dr. Ancoli-Israel received a bachelor's degree from the State University of New York, Stony Brook, a master's degree

from California State University, Long Beach and a doctorate in psychology from the University of California, San Francisco. Dr. Ancoli-Israel is also board certified in sleep medicine. Dr. Ancoli-Israel is involved with several sleep-related organizations in many capacities. She served on the APSS program committee for five years, and in 1999 was the keynote speaker for the APSS Annual Meeting. Her current interests include therapeutic interventions for sleep problems in dementia and fatigue, particularly the relationship between sleep, fatigue and circadian rhythms in cancer.



Ruth Benca, M.D., Ph.D.
Past-President

Ruth M. Benca, M.D., Ph.D. is professor and associate chair for research in the department of psychiatry at the University of Wisconsin, Madison. She earned her doctorate and medical degree from the University of Chicago. Dr. Benca divides her time among research, clinical, teaching and administrative activities. Research studies in her

laboratory use behavioral, neurophysiological and neuroanatomical techniques to elucidate mechanisms for sleep abnormalities in psychiatric disorders. Specific projects include identifying neural mechanisms underlying sleep-wakefulness responses to acute lighting changes, studying migratory sleeplessness and uni-hemispheric sleep in birds, determining the role of the amygdala in sleep regulation, and studying sleep changes associated with mood disorders. Dr. Benca works in the Comprehensive Sleep Disorders Center at the University of Wisconsin Hospital & Clinics, where she trains psychiatry residents and fellows in sleep disorders medicine. Dr. Benca has been a member of the American Academy of Sleep Medicine's (AASM) Board of Directors, as well as chair of the Associated Professional Sleep Societies' pro-

gram committee. She is currently serving as president of the Associated Professional Sleep Societies, a joint venture of the AASM and the SRS.



Mark Opp, Ph.D.
Secretary/Treasurer

Mark R. Opp, Ph.D., is associate professor of anesthesiology and physiology in the School of Medicine and a member of the neuroscience program at the University of Michigan. Dr. Opp earned a master's of science degree in biology from Walla Walla College in Walla Walla, Washington and a doctorate in zoology from Washington State

University. Dr. Opp is an active member of the Sleep Research Society and serves the SRS in many capacities. His research focuses on stressor-induced alterations in sleep.



Christine Acebo, Ph.D.
Publications Chair

Christine Acebo, Ph.D. is assistant professor of research in the department of psychiatry and human behavior at Brown Medical School and assistant director of the E.P. Bradley Hospital Sleep and Chronobiology Research Lab. Dr. Acebo earned a doctorate in biobehavioral sciences at the University of Connecticut. The research problems that

most engage her include the development of tools to assess sleep/wake patterns in naturalistic settings and the development of analytic procedures for complex data sets. In addition to her Sleep Research Society activities, Dr. Acebo sits on the editorial board of the journal *SLEEP*.



Roseanne Armitage, Ph.D.
Sleep and Behavior Section Head

Roseanne Armitage, Ph.D. is professor of psychiatry and director of the sleep and chronophysiology laboratory at the University of Michigan in Ann Arbor. Dr. Armitage completed a doctorate at Carleton University and her post-doctoral fellowship at the University of Ottawa in Canada. She has been an active member of the SRS and the AASM since the

1980s, and has served on the APSS program committee.



Barbara E. Jones, Ph.D.
Basic Sleep Section Head

Barbara E. Jones, Ph.D. is professor in the department of neurology and neurosurgery at McGill University and the Montreal Neurological Institute. She earned a doctorate from the University of Delaware in physiological psychology after doing a portion of her graduate training at the Faculte de Medecine in Lyon, France. Her original training in

sleep research was obtained under Michel Jouvet in Lyon, followed by postdoctoral studies in biochemical pharmacology with Jacques Glowinski in Paris, and then in chemical neuroanatomy with Robert Moore in Chicago. Her research has concentrated on the physiological and anatomical elucidation of chemically specific neuronal systems that are responsible for the generation of the sleep-wake states.



Thomas S. Kilduff, Ph.D.
Trainee Chair

Thomas S. Kilduff, Ph.D. is senior program director in the Biosciences Division at SRI International in Menlo Park, California. He received a master's degree and doctorate from Stanford University, where he was a National Science Foundation Fellow and National Academy of Sciences-National Research Council Research Associate at NASA-Ames Research Center. Dr. Kilduff was also a

Senior Research Scientist at the Stanford University Sleep Disorders Research Center. Dr. Kilduff has served on the APSS program committee and co-organized the conference entitled "Bioinformatics, Neuroscience and Sleep Research" held at the National Institutes of Health. He has been a consulting reviewer for grant institutions such as the National Science Foundation, the U.S. Army Research Office, the American Narcolepsy Association, the American Sleep Medicine Foundation, the Canadian Medical Research Council, the Swiss National Science Foundation and the Human Frontiers Science Program Organization.



Carole L. Marcus, M.B.B.Ch.
Membership Chair

Carole Marcus M.B.B.Ch. is professor of pediatrics at the University of Pennsylvania, and director of the Pediatric Sleep Center and General Clinical Research Center at Children's Hospital of Philadelphia. She received her medical degree in South Africa; completed a pediatric residency and chief residency at State University of New York,

Brooklyn; and completed a pediatric pulmonology fellowship at Children's Hospital Los Angeles, University of Southern California. Her main area of interest, both clinically and in research, is pediatric sleep-disordered breathing, and specifically the pathophysiology of the childhood obstructive sleep apnea syndrome.



Daniel Taylor, Ph.D.
Trainee Member-at-Large

Daniel Taylor received a master's degree from the University of Louisiana, Lafayette and completed a doctorate degree at the University of Memphis, where he worked with Kenneth Lichstein, Ph.D. He recently completed a clinical psychology internship at Brown University Medical School where he worked with Mary Carskadon,

Ph.D. He will begin a one-year clinical fellowship in behavioral sleep medicine in September at the University of Texas Southwestern Medical School. His research focus is behavioral sleep medicine, specifically insomnia treatment studies and epidemiology.



Eric A. Nofzinger, M.D.
Excessive Daytime Sleepiness Section Head

Eric A. Nofzinger, M.D. is associate professor of psychiatry at the University of Pittsburgh School of Medicine, where he is currently the director of the Sleep Imaging Research Program. He completed residency training in psychiatry and in sleep disorders medicine and an NIMH research fellowship with

emphasis in sleep research all at the University of Pittsburgh. Dr. Nofzinger has provided service to the sleep research community and to training in a variety of capacities over the years, including membership with AASM and SRS committees. Dr. Nofzinger's areas of research interest include human functional neuroimaging studies of sleep in health and in disease where he has received funding to study depression, insomnia, aging, schizophrenia, alcoholism and obstructive sleep apnea syndrome.



Michael V. Vitiello, Ph.D.
Circadian Rhythm Section Head

Michael V. Vitiello, Ph.D. is professor and senior scientist with the sleep research group in the department of psychiatry and behavioral sciences at the University of Washington. He is also adjunct professor of psychology and adjunct professor of biobehavioral nursing and health systems at the University of Washington. He received a bachelor's

degree in psychology from Columbia University in 1973 and a doctorate in physiological psychology from the University of Washington in 1980. Dr. Vitiello's research focuses on the causes, consequences and treatments of sleep disturbance in the elderly. He is editor in chief (for the Americas) of *Sleep Medicine Reviews* and a is Fellow of the Gerontological Society of America.

SRS LEADERSHIP AT WORK AND PLAY



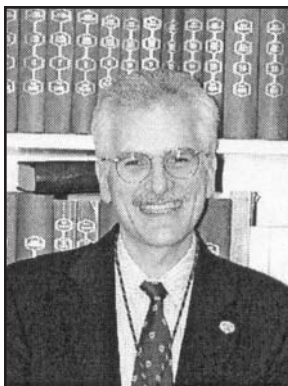
The current and several former presidents of the Sleep Research Society gather at the Past President's Lunch to discuss current sleep research and the future direction of the field.



Following a stimulating discussion these current and former leaders practice what they preach by enjoying a brief moment of sleep amidst busy APSS activities.

COMMITTEE LEADERSHIP

The Sleep Research Society is also deeply indebted to non Board members who volunteer to serve as chairs of standing committees. The SRS thanks them for their contributions and commitment to the profession.



Charles Czeisler, M.D., Ph.D.
Research Committee Chair

Charles Czeisler, M.D., Ph.D. received a doctorate in neuro and behavioral sciences from Stanford University and a medical degree from the same institution. He is professor of medicine at Harvard Medical School and the chief of the division of sleep medicine at the Brigham and Women's Hospital in Boston. Dr. Czeisler has been very

active in academics over the course of his career, has taught at a variety of venues, including medical school and university and hospital courses, and has held numerous professional leadership roles related to teaching. He holds membership with several medical and professional organizations and his research interests include the physiology of hypothalamic circadian pacemakers in humans and the temporal dynamics of neuroendocrine systems.



Kingman P. Strohl, M.D.
Educational Program Committee Chair

Kingman P. Strohl, M.D. is a member of the division of pulmonary and critical care at the Louis Stokes VA Medical Center in Cleveland and University Hospitals of Cleveland. He is involved in teaching, patient care and administrative responsibilities in pulmonary and critical care medicine. In addition,

he is the medical director for Home Oxygen and for the Sleep Disorders Program at the Louis Stokes VA Medical Center. Dr. Strohl is also director of the Center for Sleep Disorders Research at Case Western Reserve University. Dr. Strohl has served as an established NIH investigator in the field of sleep apnea and respiratory control. Dr. Strohl spends the majority of his time in basic and applied research as the principal investigator of national grants.

Members in the News

AWARDS AND HONORS

The Los Angeles Times published an article on insomnia and sleep-disordered breathing on Monday, January 6, 2003. The piece, "Waking up to Breathing Problems," featured a study published by SRS members Barry Krakow, M.D.; Christian Guilleminault, M.D.; and Avram Gold. The full text of the article is available by searching the archives section of the paper's Web site, www.latimes.com.

Gregory Stores, professor in the department of psychiatry at the University of Oxford, has recently authored two books: "A Clinical Guide to Sleep Disorders in Children and Adolescents," published by Cambridge University Press; and "Sleep Disturbances in Children and Adolescents with Disorders of Development," published by Mac Keith Press.

Thomas Thannickal, Ph.D., a staff research associate in neurobiology at the University of California, Los Angeles, is the recipient of the 2003 American Academy of Neurology Sleep Science Award. Thannickal received the award for his study, "Hypocretin/onexin: New Perspectives for Sleep Research," at the American Academy of Neurology 55th Annual Meeting, which has held March 29 to April 5, 2003 in Honolulu, Hawaii.

APPOINTMENTS

Hiroshi Kadotani, M.D., Ph.D. was promoted to associate professor at Kyoto University Graduate School of Medicine.

SRS Web Site

www.sleepresearchsociety.org



The site was designed to be a resource for members and to educate and inform the public. We suggest you visit us at www.sleepresearchsociety.org to view our recent upgrades and updates. Your suggestions and comments are welcome.

WELCOME NEW MEMBERS

As the Sleep Research Society grows, we strengthen the impact on the profession by offering members unique education and research opportunities and keeping members abreast of current sleep research and topics. In 2003, we ask each member to recruit at least one colleague for membership in the Society. Information regarding membership can be found on the SRS Web site, www.sleepresearch-society.org, or from Judy Milton, SRS coordinator, at jmilton@aasmnet.org.

Join us in welcoming the following new members who joined the Society since the first of the year.

FULL MEMBERS

Indu A. Ayappa, Ph.D.
New York University

Bassetti Claudid, M.D.
University Hospital - Switzerland

Mary Coussons-Read, Ph.D.
University of Colorado at Denver

Ronald E. Dahl, M.D.
University of Pennsylvania Medical Center Health System

Thom R. Feroah, Ph.D.
Medical College of Wisconsin

Alan Gevins, D.Sc.
San Francisco Brain Research Institute & SAM Technology, Inc.

Nalaka S. Gooneratne, M.D., M.S.C.E.
University of Pennsylvania

Anupama Gopalkrishnan, Ph.D.
University of Wisconsin-Madison

Michael Irwin, M.D.
University of California-Los Angeles

Todd Kirby, Ph.D.
Respironics

Andrew D. Krystal
Duke University Medical Center

Oleg Lyamin Ph.D.
University of California, Los Angeles

Linda McEvoy, Ph.D.
SAM Technology, Inc.

Melvi M. Methippara, Ph.D.
University of California-Los Angeles

Amy L. Salisbury, Ph.D., R.N., C.S.
Brown Medical School

Ronald Seifer, Ph.D.
E.P. Bradley Hospital/Brown University

Michael T. Smith, Ph.D.
Johns Hopkins School of Medicine

Ping Taishi
Washington State University

Donna Taliaferro, R.N., Ph.D.
Virginia Commonwealth University

Janet L. Tekell, M.D.
Dallas VA Medical Center/UT Southwestern Medical Center

Sergio A. Trujillo Vivar, M.D.
Instituto Nacional del Torax (Chile)

Xinzheng Xi
University of California-Los Angeles

Teimur Yeligulashrili, Ph.D.
Sleep Tech – New Jersey

ASSOCIATE MEMBERS

Christopher A. Angara, B.S.
University of California Los Angeles/VAGLHS

Rob Dansereau, B.A.
Washington State University

Sophia Greer
Emory University

Timothy M. Juergens, M.D.
University of Wisconsin-Madison

Andrea G. Peterson, M.S.
University of Wisconsin-Madison

Holly Marie Scofield, B.A.
Henry Ford Hospital-Sleep Research Center

Inez Solomon
Emory University

Laura-Beth Straight
Emory University

STUDENT MEMBERS

Hiroyoshi Adachi, M.D.
Osaka University Graduate School of Medicine

Moses Atanda Akanmu, M.S.
Tokyo Medical and Dental University

Genevieve Alain
Hospital of Montreal-Sleep Research Center

Cynthia Rosas Alquicira
Universidad Nacional Autonoma de Mexico

Lalin Anik
Brandeis University

Melissa Biesiadecki, B.S.
University of Wisconsin Medical School

Nicholas Carde
Washington State University

Kathleen Carter
Washington State University

Cassia Cearley
Washington State University

Jennifer H. Choi
State University of New York at Stony

Adam Christensen, B.A.
University of Rochester

Arlene S. Chung
Brown University

Jennifer C. Cousins, B.A.
University of Arizona

Rob Dansereau, B.A.
Washington State University

Danielle Delosh
State University of New York at Stony

Pamela Dubyak, B.A.
Brown University

| | | |
|---|---|--|
| Steve Esser, B.S. University of Wisconsin-Madison | Krishna Jhaveri Southern Illinois University School of Medicine | Milena Pavlova, M.D. Brigham and Women's Hospital |
| Jennifer Fahy, B.A. University of Wisconsin-Madison | Adrijana Koscec, M.S. Institute for Medical Research and Occupational Health (Croatia) | Jessica D. Payne, M.A. University of Arizona |
| Maria Livia Fantini, M.D. University of Montreal-Canada | Timothy LaVaute University of Wisconsin-Madison | Rickey Phillips, B.A. University of Arkansas at Little Rock |
| E'milie Fortier-Brochu University Laval (Quebec) | Kimberly A. LeChasseur College of the Holy Cross | Bartholomew D. Phillips, B.S. University of California-San Diego |
| Gretchen K. Fredricks University of Wisconsin-Madison | Anne Luebke, B.S. University of Wisconsin-Madison | Michelle F. Pittsley University of California-San Diego |
| Danielle Frey University of Colorado at Boulder | Bruce Mandt University of Wisconsin-Madison | Michael Rozenfeld University of Wisconsin, Madison |
| Loralee Geiger Indiana University/Perdue University Fort Wayne | Jessica Massicotte-Marquez, B.S. Hospital du Sacre-Coeur (Canada) | Sandeep K. Sood University of Toronto |
| Bridgette K. Harder University of Wisconsin-Madison | Annie Mathieu, M.A. University of Montreal | Khalil Guzman Vasquez Universidad Nacional Autonoma de Mexico |
| Brant P. Hasler University of Arizona | Dawn Michelle McNamee University of Wisconsin-Madison | Catherine Vena, Ph.D., R.N., M.S.N. Emory University |
| Pablo Henny Montreal Neurological Institute | Mandana Modirrousta, M.D. Montreal Neurological Institute | Edwin Vertraeten, Ph.D. Vrije Universiteit/Free University Brussels |
| Dane Holderman University of Arizona | Sarah M. Newman, B.S. University of Wisconsin-Madison | Laura C. Wagner Brown University |
| Alejandro Huerta-Saquero Universidad Nacional Autonoma de Mexico | Jeffery M. Noble Brown University | Masayuki Yao University of Tsukuba Institute of Community Medicine |

Federal Funding Opportunities and Resources

The NIH National Center on Sleep Disorders Research (NCSDR) coordinates federal government sleep research programs and the development of public and professional education programs by NIH, collaborating federal agencies, and partner organizations. Subscribers to the NCSDR listserv, SleepRFA-L, receive brief E-mail messages on selected government funding opportunities and NIH meetings as this information becomes available on topics of potential interest to sleep, circadian, and clinical researchers. The funding opportunities posted on SleepRFA-L include initiatives that target sleep and other disorders where sleep may be a relevant direction for research such as metabolic dysfunction, mind-body interactions, and behavioral research. Investigators and trainees may find SleepRFA-L helpful in keeping up with NIH developments potentially relevant to sleep/circadian research. The listserv is open to the public and self-subscribing (<http://list.nih.gov/archives/sleepdfa-l.html>). A complete archive of previous announcements and search functions are also available on the SleepRFA-L home page.

The NCSDR Web site (www.nhlbi.nih.gov/ncsdr) offers access to the NIH Sleep Research Plan, the Trans-NIH Annual Report on sleep research, and sleep disorder education materials that you can download and reproduce for children, patients and physicians. Questions about the NCSDR or its activities can be sent by E-mail to ncsdr@nih.gov, or contact the NCSDR by phone at (301) 435-0199.

APSS ANNUAL MEETING RECAP

The Sleep Research Society hosted two well-received events at the APSS Annual Meeting in June and thanks all members who attended the functions to support and celebrate the Society and its members.

The inaugural *Discovering the Secrets of Sleep* research fundraising dinner was a tremendous success! In conjunction with the American Academy of Sleep Medicine, the Society co-hosted the dinner, which was held on June 4, 2003. More than 300 people enjoyed the festivities, which included a seated dinner, live music and centerpiece giveaways for each table. Andrew Chesson, M.D. and Ruth Benca, M.D., Ph.D., co-hosts for the evening, wish to thank the patrons, sponsors, and individuals who attended the event for supporting sleep-related research. The Sleep Research Society will contribute their portion of the funds raised to trainee activities, the junior faculty development program, and promotion of sleep research, which reinforces the Society's commitment to providing members with unique educational and professional opportunities.

The Sleep Research Society hosted an evening reception on Thursday, June 5, 2003 to commemorate the 50th anniversary of the discovery of REM sleep and recognize Jubilee Award winners for their original and significant contributions to the field of sleep research. More than 375 individuals attended the reception and eagerly anticipated the evening's program.

The Sleep Research Society presented a plaque to representatives from the University of Chicago in commemoration of the 50th anniversary of the discovery of REM sleep by Drs. Eugene Azerinsky and Nathaniel Kleitman. The university representatives were honored to attend the event and recognize the profound importance of the discovery on the sleep research field.

The reception also celebrated the founders and significant early contributors of the sleep research field. The event gathered the most prominent researchers, whose pioneering contributions considerably advanced the field and shaped the landscape of modern sleep research, and recognized their vast contributions. The SRS Founders are recognized for their seminal contributions between 1953 and 1962. Significant Early Contributors are recognized for their valuable discoveries that moved sleep research science forward between 1963 and 1972. Although the SRS has identified many of those who were instrumental in advancing the science of sleep research and medicine, we acknowledge there are many worthy of honor who are not included on this list. Today's researchers are indebted to the work and dedication of these individuals.

In the box on page 13 is a list of the Founders and Significant Early Contributors honored at the reception.



William C. Dement, M.D., Ph.D. and Michel Jouvet, M.D. co-presented the keynote address at the APSS Annual Meeting.



Attendees at the *Discovering the Secrets of Sleep* Dinner intently listen to the evening's program.

Jubilee Award Recipients

Founders

William C. Dement
 Irwin Feinberg
 David Foulkes
 J. Allan Hobson
 Laverne C. Johnson
 Michel Jouvet
 Anthony Kales
 David J. Kupfer
 Elio Lugaresi
 Ottavio Pompeiano
 Allan Rechtschaffen
 Howard P. Roffwarg
 Mitcea Steriade
 Barry Sternman
 Wilse B. Webb

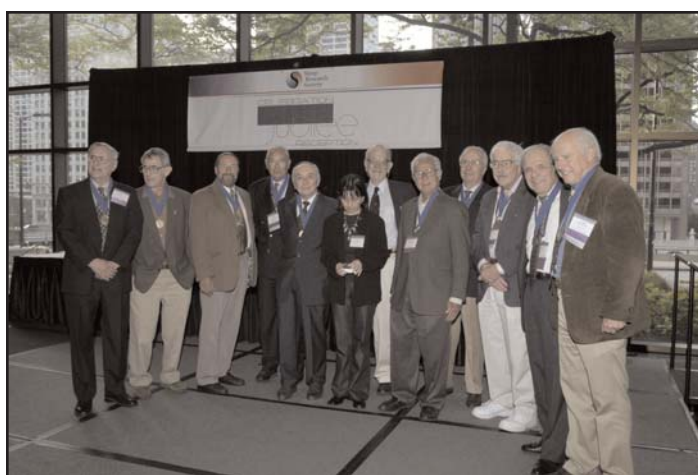
Posthumous Founders

Eugene Aserinsky
 Jürgen Aschoff
 Frédéric Bremer
 Walter Rudolph Hess
 Herbert Jasper
 Nathaniel Kleitman
 Horace W. Magoun
 Giovanni Moruzzi
 Walle J.H. Nauta
 Henri Pieron
 Curt P. Richter
 Richard E. Weizman

Significant Early Contributors

Joëlle Adrien
 Truett Allison
 John Antrobus
 Frederick Baekeland
 Mary Anne Baker
 Odile Benoit
 Ralph Berger
 Giovanni Berlucchi
 Emilio Bizzi
 Alexander A. Borbély
 Roger J. Broughton
 Giancarlo Carli
 Rosalind D. Cartwright
 Michael H. Chase
 Carmine Clemente
 Michael Corner
 Edward F. Domino
 William Fishbein
 Lucinde Garma
 J. Christian Gillin
 Claude Gottesmann
 Ramon Greenberg
 Christian Gilleminault
 Ernest L. Hartmann
 Peter J. Hauri
 David R. Hawkins
 James N. Hayward
 Steven J. Henriksen
 Yasuo Hishikawa
 Yutaka Honda
 Peter Huttenlocher
 Turan Itil
 Yoshiaki Iwamura
 Barry L. Jacobs
 Marc Jeannerod
 Barbara E. Jones

Ismet Karacan
 Werner P. Koella
 Milton Kramer
 Daniel F. Kripke
 Daniel Kurtz
 Vincenzo Longo
 Mauro Mancia
 Robert W. McCarley
 Dennis J. McGinty
 Merrill M. Mitler
 Jamie M. Monti
 Adrian R. Morrison
 Teruo Okuma
 William C. Orr
 Ian Oswald
 John R. Pappenheimer
 Pier Luigi Parmeggiani
 Arthur Parmelee
 R.T. Pivik
 Miodrag Radulovacki
 Peter Reich
 Martin L. Reite
 Gian Franco Rossi
 Thomas Roth
 Kazuya Sakai
 Piero Salzarulo
 Jon F. Sassin
 Chsrles H. Sawyer
 Franz Schulte
 Reidun Ursin
 Jean-Louis Valatx
 Jamie Villablanca
 Gerald Vogel
 Robert T. Wilkinson
 Alberto Zanchetti
 Vincent P. Zarcone Jr.
 Harold Zepelin



The Founders, recognized for their seminal contributions to sleep research between 1953 and 1962, gather at the SRS Jubilee Awards ceremony.



Significant Early Contributors present at the APSS Annual Meeting assemble at the SRS Jubilee Awards ceremony.

8TH ANNUAL TRAINEE DAY

The Sleep Research Society each year sponsors Trainee Day in conjunction with the APSS Annual Meeting to foster scientific investigation, professional education and career development in sleep research and academic sleep medicine. Trainee Day also offers young researchers and scientists an unparalleled opportunity to glean knowledge and experience from established professionals about current topics in the field. The Sleep Research Society is able to provide this education opportunity with the generous support of Pfizer Pharmaceuticals.

This year's Trainee Day was held on Wednesday, June 4, 2003, and was the largest gathering to date, with approximately 200 enthusiastic scientists attending the day-long series of workshops and discussions. The highly-anticipated event began with a breakfast program that included introductory comments, a brief orientation and a keynote address, which was an audio/visual presentation of Dr. Eugene Aserinsky discussing his role in the discovery of REM sleep entitled, "How, as a Student, I Discovered REM Sleep: A Tale of Trials, Belief in Self, and Perseverance." The address, introduced by Dr. Roger Broughton, was particularly relevant for trainees as Aserinsky's discoveries were made while he was a graduate student.

Throughout the day, trainees attended four sets of one-hour workshops, with 22 different presentations in total, which explored basic science topics, career development issues, and clinical presentations. The day also included a lunch, which allowed presenters to share information on the current state of a given area of research or clinical topic, discuss career-related issues and inspire trainees to appreciate the potential for young scientists in the field.



David Dinges, Ph.D. presenting a workshop session at the 17th APSS Annual Meeting.

The Sleep Research Society thanks all presenters who generously volunteered their time and effort to make Trainee Day a unique opportunity and shared their experience and knowledge with attendees:

Roseanne Armitage, Ph.D.
Daniel Buysse, M.D.
Mary Carskadon, Ph.D.
Rosalind Cartwright, Ph.D.
Sudhansu Chokroverty, M.D., F.R.C.P.
David Dinges, Ph.D.
Sean Drummond, Ph.D.
Barbara Jones, Ph.D.
Clete Kushida, M.D., Ph.D., R.P.S.G.T.
Kenneth Lichstein, Ph.D.
Robert McCarley, M.D.
Dennis McGinty, Ph.D.
Margaret Moline, Ph.D.
Timothy Monk, Ph.D.
Charles Morin, Ph.D.
Adrian Morrison, D.V.M., Ph.D.
Seiji Nishino, M.D., Ph.D.
Eric Nofzinger, M.D.
Mark Opp, Ph.D.
Edward Pace-Schott, M.S., M.A., L.M.H.C.
Michael Perlis, Ph.D.
Gina Poe, Ph.D.
Timothy Roehrs, Ph.D.
David Rye, M.D., Ph.D.
Paul Shaw, Ph.D.
Jerome Siegel, Ph.D.
Robert Stickgold, Ph.D.
Giulio Tononi, M.D., Ph.D.
Hans Van Dongen, Ph.D.

The Trainee Day Symposium was the result of the work of a subcommittee of student members of the SRS. This year's subcommittee members were: Jennifer Martin (chair), Margaret Borkowski, Margaret Carno, Mairav Cohen-Zion, Amanda Freeman, Philip Gehrman, Anne Germain, Janna Morrison, Tim Murphy, John Peever, Dante Picchioni, Ana Ribeiro, and Daniel Taylor. Dr. Eric Nofzinger, the SRS Program Chair for Trainees oversaw the subcommittee's activities and provided valuable guidance.

DISTINGUISHED 2003 SCIENTIST



Ruth Benca, M.D., Ph.D. presents the Distinguished Scientist Award to Alexander A. Borbély, M.D.

Each year, the Sleep Research Society presents the Distinguished Scientist Award to recognize significant, original, and sustained contributions of a basic, clinical or theoretical nature to the sleep research field; it is the highest award presented by the Sleep Research Society. The Society presented the Distinguished Scientist Award to Alexander A. Borbély, M.D. at the APSS Annual Meeting for his vast work and research in the field.

As the recipient of the Distinguished Scientist Award, he was invited to present a lecture at the APSS Annual Meeting. On Saturday, June 7, 2003 he presented "Sleep States and Sleep Processes" to a well-attended assembly.

Alexander A. Borbély, M.D. is professor of pharmacology at the Medical Faculty at University of Zurich, Switzerland. He is former dean of the Medical Faculty, and is currently vice president for research at the University of Zurich.

Dr. Borbély was born in Budapest, Hungary, and received a medical degree from the University of Zurich. He spent two post-doctoral years at the Massachusetts Institute of Technology's Research Laboratory of Electronics, gaining experience in electrophysiology and biosignal analysis. Upon returning to Zurich, he established a sleep research center at the Institute of Pharmacology and Toxicology at the University of Zurich. The center's research activities focus on sleep regulation in humans and animals, and on mathematical models of sleep processes based on EEG analysis.

Dr. Borbély's research efforts continue to have an impact on the sleep research field. In collaboration with Drs. Serge Daan and Domien Beersma, Dr. Borbély established the two-process model of sleep regulation, which has been used as a framework in numerous experimental studies. In recent years, Dr. Borbély's research group has focused on regional aspects of sleep EEG (local sleep) and its modification by pre-sleep activities (use dependent changes). Additionally, his book, *Secrets of Sleep*, is translated into 10 languages, and he is the author of more than 200 research articles and book chapters.

Dr. Borbély has been recognized with several honors and awards, including the World Federation of Sleep Research Societies Distinguished Scientist Award. He holds membership with several professional societies, and has served these organizations in various capacities.

2003 YOUNG INVESTIGATORS

The Sleep Research Society presents the Young Investigator Award to an individual conducting outstanding research in the field of sleep research. A committee reviews all applications, and the basis for evaluation of candidates is a single publication in a peer-reviewed journal and a letter of recommendation. The award is presented each year at the Annual Meeting of the Associated Professional Sleep Societies. The recipient receives a \$1,000.00 grant to be applied toward travel to the Annual Meeting.



Ruth Benca, M.D., Ph.D. presents the 2003 Young Investigator Award to Natalia Suntsova.

This year, the Sleep Research Society presented the Young Investigator Award to two individuals as both were excellent research efforts in two different areas, animal and human research. The SRS presented a Young Investigator Award to Natalia Suntsova for her paper, "Sleep-waking discharge patterns of median preoptic nucleus neurons in rats," which was published in the prestigious *Journal of Physiology*. The research hypothesizes that these vlPOA and MnPN neuronal populations act as parts of a GABAergic/galaninergic sleep-promoting (anti-waking) network that exercises inhibitory control over waking-promoting systems and that MnPN neurons that progressively increase activity during sustained waking and decrease activity during sustained sleep states may be involved in homeostatic regulation of sleep.

The Young Investigator Award was also presented to Hans P.A. Van Dongen for his manuscript, "The cumulative cost of additional wakefulness: Dose-responsive effects on neurobehavioral functions and sleep psychology from chronic sleep restriction and total sleep deprivation," which was published in the journal *SLEEP*. He utilized state-of-the-art scientific methods to conclude that chronic sleep restriction produces cognitive perform-

ance deficits equivalent to up to three nights of total sleep deprivation.

Suntsova earned a doctorate and doctor of sciences (D.Sc.) at Rostov State University in Russia. She is currently a postgraduate researcher in the department of psychology at the University of California, Los Angeles and a senior researcher in the A.B. Kogan Research Institute for Neurocybernetics in Russia. Her research has focused on the forebrain mechanisms of sleep-wake states generation with a primary focus on the role of preoptic area neuronal populations in sleep initiation and maintenance and in executive mechanisms of non-REM and REM sleep. Suntsova's current research is concentrated upon the role of preoptic area sleep-promoting neuronal groups in the mechanisms of generalized epilepsy.



Ruth Benca, M.D., Ph.D. presents the 2003 Young Investigator Award to Hans Van Dongen.

Van Dongen is research assistant professor of sleep and chronobiology in the department of psychiatry at the University of Pennsylvania School of Medicine. He received a master's degree in astrophysics and a doctorate in chronobiology and sleep from Leiden University in the Netherlands. In 1998, he came to the United States for a postdoctoral position in the laboratory of Dr. David F. Dinges at the University of Pennsylvania; a year later he joined the faculty. Van Dongen's research is focused on inter-individual variability in sleep and wakefulness, with an emphasis on sleep deprivation. He also recently investigated the neurobehavioral effects of chronic partial sleep deprivation. He demonstrated that by considering cumulative excess wakefulness instead of cumulative sleep debt, the effects of chronic sleep restriction can be reconciled with those of acute total sleep deprivation.

CLUB HYPNOS

Two Club Hypnos Events Scheduled at Fall Annual Meetings

Sleep Research Society Club Hypnos events are receptions held in conjunction with meetings of allied organizations. The receptions provide opportunities for colleagues to discuss their interest in sleep research, socialize with other members, share ideas, and learn about the benefits of SRS membership.

The SRS is hosting a Club Hypnos event at the Society for Neuroscience Annual Meeting, which is being held November 8-12, 2003 in New Orleans, Louisiana. The event will be held on Tuesday, November 11, 2003 from 6:30 to 8:00 p.m. at the Sheraton New Orleans Hotel in Napoleon Ballroom B1-B2; refreshments will be served. Immediately following the Club Hypnos reception, the National Institutes of Health's National Center on Sleep Disorders Research, in collaboration with other allied societies, is sponsoring the Sleep and Circadian Rhythms Datablitz.

The Sleep Research Society, in a continuing effort to advance sleep research, invites and encourages meeting participants to attend the Club Hypnos reception. The evening will provide stimulating conversation with leading researchers in the field. For additional information, contact Mark R. Opp, Ph.D. at (734) 615-8768 or via e-mail at mopp@umich.edu.

The SRS will also be sponsoring a Club Hypnos event in conjunction with the Association for the Advancement of Behavior Therapy annual conference. The conference is November 20 to 23, 2003 at the Boston Marriott Copley Place in Boston, Mass. This activity is scheduled in conjunction with the insomnia and sleep disorders special interest group meeting. For additional information, contact Kathy Sexton Radek, Ph.D. at (708) 442-8946, or via e-mail at ksrsleep@aol.com.

COMMITTEE INFORMATION

The Sleep Research Society is indebted to the work and dedication of the many members who volunteer their time to serve in various capacities on committees. The work of the individuals who constitute the respective committees advances the goals of the organization and contributes to the continued development of the field.

This year, several changes were made to the committee structure in an effort to ensure the maximum efficiency of each committee.

The SRS has elected to relieve some committees as their charges were complete and the remaining work of these groups could be absorbed and executed by other existing committees. Additionally, the SRS will institute a graduated rotation system to keep committee work vital and to generate new leadership.

The Sleep Research Society looks forward to the many programming and educational recommendations and contributions the committees will make in the coming year.

HIGH SCHOOL ESSAY CONTEST

This year, the Sleep Research Society sponsored a nationwide essay contest to encourage high school students to explore the field of sleep research. This year's contest was a success, with thirty-three students submitting essays for review and consideration. Based on the high quality of entries, two papers were selected as winners by a review committee comprised of Society members.

Katherine Jares of Saint Albert High School in Council Bluffs, Iowa submitted an essay about the risks and consequences associated with sleep deprivation in teenagers entitled "The Aging Sleeping Beauty."

The other winner, Galen Lande of Cardinal Newman School in Columbia, South Carolina, submitted "The Role of Sleep Deprivation in Treating Depression," which discusses the role and effectiveness of sleep deprivation in treating depression.

Each winner received a prize of \$250, a certificate of merit and a signed copy of *The Promise of Sleep* by William C. Dement, M.D., Ph.D. Their respective school also received a signed copy of *The Promise of Sleep* for the school library. The SRS sent all other entrants a thank you letter, SRS key chain, and mouse pad in recognition of their participation and essay submission.

PROMOTIONAL ITEMS

The Sleep Research Society has several new promotional items available for sale. The items are great gift ideas and a way to support the Society and its initiatives. New items include an embroidered baseball cap available for \$20, a mug for \$10 and key chain for \$8. Individuals who wish to purchase items can visit the SRS Web site, www.sleepresearchsociety.org, to view pictures of the merchandise and download a product order form.

See promotional items order form on page 26.



The SRS now offers a hat, mug, and key chain for purchase.

NEW SLEEP EDITOR



There has never been a time of greater public interest in sleep and sleep disorders by the medical community and the public, and this is reflected in the continued growth and success of the journal *SLEEP*. In January, the APSS joint operating committee appointed David White, M.D. to a five-year term as the editor in chief of *SLEEP*.

The journal has positioned itself as the preeminent resource in the field of sleep-disorders research, and has earned a reputation for publishing a broad spectrum of high quality research.

This increased success and visibility allowed the journal to grow and impact a larger audience:

- *SLEEP*'s impact factor significantly rose, from 1.8 to 4.24 for Volume 25;

- Circulation reached 6,500 with a readership estimated at more than 20,000;
- Production of the journal was streamlined and *SLEEP* is now published in-house;
- The abstracts presented at the APSS Annual Meeting are printed in a supplemental issue of the journal;
- Turnaround time for manuscript review declined each of the past three years;
- All abstracts and papers are also available on the Web site through subscription.

Dr. White is currently associate professor of medicine at Harvard Medical School, the director of Brigham and Women's Hospital Sleep Disorders program and the medical director of Sleep HealthCenters, LLC. He received a medical degree from Emory University and conducted postdoctoral training at the University of Colorado Health Science Center. He served as president of the AASM from 1996-1997 and as APSS program committee chair from 2001-2002. Dr. White has been an associate editor of *SLEEP* since 1998.

IMPROVED SLEEP WEB SITE

The Associated Professional Sleep Societies launched the improved journal *SLEEP* Web site on Friday, August 15. The redesigned site complements the print version of the journal and enables the societies to continue to disseminate high-quality sleep research. As a result of these improvements, it is necessary for new and existing subscribers to establish a new user name and password when revisiting the site for the first time. We appreciate your patience and cooperation during the transition.

FEATURE EDITORIAL

Understanding the Effect of Animal-Rights Activism on Biomedical Research

Adrian R. Morrison, D.V.M., Ph.D.

Laboratory for Study of the Brain in Sleep, Department of Animal Biology, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA.

This article was originally a presentation delivered to the Association for Research in Otolaryngology (ARO) in St. Petersburg, FL on January 27, 2002. It was published in *Actas de Fisiologia*, 8:9-22, 2002 and is reprinted with permission.

I want to thank you for inviting me to speak today. I should note that last November marked the twentieth anniversary of my involvement with the problem of the animal rights movement and its attack on biomedical research. That fall I made the fateful decision to become an expert witness for the defense of Dr. Edward Taub in what was to become commonly known as the Silver Spring Monkey Case. This led to several years defending him, the establishment of the Committee on Animals in Research (CAR) of the Society for Neuroscience (SFN), and my eventual chairmanship of CAR from 1987-1990. My activism, particularly as chair of CAR, led the Animal Liberation Front (ALF) to attack me in 1990. Thus, I bring you thoughts and insights on the phenomenon of animal rights gained over two decades.

Medicine made tremendous progress during the past century, thanks in large measure to research involving the use of animals. In spite of the many marvelous contributions to human (and animal) health, a cadre of individuals works to hamper biomedical research. They believe it unjust to sacrifice animals for the benefit of human beings and, so, do all they can to stop their use in research. These efforts range from the nefarious to the legal/political, but they all depend for their success on a rather poor understanding among the general populous of the ways of scientific investigation.

Ignorance of science, which provides a fertile soil for misinformation campaigns, includes, unfortunately, most journalists and public officials. The last are probably the most important. Consequently, research has suffered perhaps as much, or more, from legal attempts to erect roadblocks via bureaucratic regulation and continual lawsuits as from attacks on individual scientists and destruction of laboratories. Regrettably, scientists have been grossly negligent in countering these threats to their profession. Worse, I believe, has been the inadequate provision of funds by those with the real resources, the drug companies in particular, to develop and maintain an effective educational effort at all levels. Perhaps the economic damage to Huntingdon Life Sciences inflicted by animal-rights attacks will wake up the CEO's of the large pharmaceutical firms.

Of course, what many in the public do not know is that the use of our animals is highly regulated by two federal agencies, the Department of Agriculture and the Public Health Service, as those of you who work with animals know. (Morrison, 1993) Let me add we should realize that despite the sometimes (often?) excessive bureaucracy to which we are subjected, our animal subjects ultimately depend upon us — our set of values. The government bureaucrats may not like it, but it is our ethical sense that is the final arbiter of our animals' welfare.

My intent today is to analyze the phenomenon of the animal rights movement and describe the practical consequences of the particular view of human-animal relationships loosely labeled as the 'animal-rights philosophy' that drives the movement. Fundamentally, we are faced with contrasting values, ours and those of individuals who can utter such things as: "Animal liberationists do not separate out the human animal, so there is no rational basis for saying that a human being has special rights. A rat is a pig is a dog is a boy. They're all animals," made famous by Ingrid Newkirk of People for the Ethical Treatment of Animals (PETA). (Brown 1983, p. B10) Less familiar will be this timely quote from Karen Davis, the head of United Poultry Concerns: "I think it is speciesist to think that the September 11 attack on the World Trade Center was a greater tragedy than what millions of chickens endured that day and what they endure every day because they cannot defend themselves against the concerted human appetites arrayed against them." (Davis 2001)

A segment of the population takes such thinking to heart. Indeed, some, including Ms. Davis and Newkirk, seem consumed by the idea that human use of animals for any purpose is immoral. The Strands said in their book, *The Hijacking of the Humane Movement*, that individuals such as those just quoted appear to "identify with animals, projecting their feelings of helplessness onto them while they, through some sad route, have disconnected from their own species." (Strand and Strand 1983, p. 130) But these are hardly the thoughts of a majority of the public. Indeed, the various surveys that have sampled the views of the population at large have consistently found that a majority of citizens support

the use of animals for biomedical research, and with additional knowledge, the numbers increase

Nevertheless, the annual budgets of the two major animal-rights organizations, the Humane Society of the United States and PETA, range around \$30 million and \$13 million. The three organizations with anti-vivisection in their names — the American Anti-Vivisection Society, the National Anti-Vivisection Society and the New England Anti-Vivisection Society — have combined budgets of nearly \$4 million, more than quadruple the size of that of one of the two largest national organizations defending biomedical research, the Foundation for Biomedical Research. (Foundation for Biomedical Research 1997) The stinginess of those with the money on our side has been very shortsighted.

Clearly, the animal-rights movement is getting a message across successfully. What is the message? Why is it so effective? How does it impede medical progress?

Before addressing those questions, though, let me remind you that the animal-rights movement (at the top at least) is about demolishing the linkage between man and animals that has existed for thousands of years. Biomedical research is but one target, but it is an easy one to use for general fund-raising. The Strands have stated the situation well: “The animal rights movement basically attacks people on moral grounds, one group at a time, shaming, and dividing and conquering as they go. Each group is played off against the others as being the repulsive one.” (Strand and Strand 1983, p. viii)

Now for the message and its philosophical base:

The message is simple, if dishonest and dead wrong. It states that animals are treated carelessly and cruelly in laboratories and that they are not necessary for research anyway. Direct inspiration for the movement comes from two philosophers, Peter Singer, an Australian ethicist now at Princeton, and Tom Regan from North Carolina. In fact, PETA’s founders claim to have been inspired to action by the 1975 edition of Singer’s book, *Animal Liberation*. (Singer 1975)

Neither philosopher convinces me for one reason: They are too far beyond the bounds of common sense. Conservation writer, Richard Conniff, referring to animal-rightist thought in general, was even less kind in his assessment, stating they have “elevated ignorance about the natural world almost to the level of a philosophical principle.” (Conniff, 1990, p. 132) And were it not for the misrepresentations of the necessity and nature of animal use in biomedical research that are the movement’s stock-in-trade, including grotesque distortions of what legitimate scientists do, far fewer of the public would be contributing to the animal-rights cause. Most people would not be persuaded by its philosophical basis. If boldly, openly stated in fund-raising materials, the reasoning of Singer and Regan would fail to connect with the ‘man in the street.’ Indeed, my plumber’s response to their ideas is: “That’s just crazy.”

How removed from the real world are these ideas? What are their implications? Consider Singer first. Very appropriately, he did not call his book *Animal Rights*. Rights for him are established

by law and, therefore, arbitrary. Instead, his argument is based on the idea that actions should do the most good and the least harm for as many individuals as possible. This is a simple definition of utilitarianism.

Thanks to Singer, though, something new has been added to the concept of an ‘individual’ or ‘person’: **animals**. If we use (exploit) animals just because they are animals, we are guilty of ‘speciesism.’ Of course, it is a take-off on racism and, regrettably, is accorded equal moral weight with racism. Singer essentially ignores everything that makes us human other than our capacity to experience pain, which we most assuredly share with all animals.

Although many assume that Singer views humans and animals as moral equals, he does not, although the practical effect of adhering to his philosophy would create that effect. ‘Preferred’ humans must meet a certain standard though. Singer states: “The preference in normal cases, for saving a human life over the life of an animal when a choice has to be to be made is a preference based on the characteristics that normal humans have, and not on the mere fact that they are members of our own species who lack the characteristics of normal humans. We can no longer say that their lives are always to be preferred to those of other animals.” (Singer 1994, p. 21) As one untrained in medicine Singer is also too ready to give up on ‘defective’ persons, such as hemophiliacs and those with spinal bifida, who may have real possibilities for improvement in their conditions just around the corner.

Singer has abandoned the ‘old-fashioned’ belief in the sanctity of human life. Among other reasons, he is quite taken by the idea that “we share 98.4% of our DNA with chimpanzees.” An editorial in the *New Scientist* gleans something different from this data. To quote: “Unfortunately, it has become fashionable to stress that chimpanzees and humans must have staggeringly similar psychologies because they share 98.4 per cent of their DNA. But this misses the point: genomes are not cake recipes. A few tiny changes in a handful of genes controlling the development of the [cerebral] cortex could easily have a disproportionate impact. A creature that shares 98.4 per cent of its DNA with humans is not 98.4 per cent human, any more than a fish that shares, say, 40 per cent of its DNA with us is 40 per cent human.” (Editorial 1999) The gap between probing termite mounds with a twig and constructing the space shuttle or making several painfully learned signs to communicate wants and declaiming the Gettysburg Address is the difference between 100% and 98.4%. Some would say the soul is in there too.

Philosopher Tom Regan (1983), author of *The Case for Animal Rights*, comes at the question from a different philosophical tradition; but he, like Singer, crusades against the use of animals. Regan does not use a utilitarian argument and so hardly comments on the ‘cruel uselessness’ of animal experimentation. Rather, he argues that animals’ lives have an inherent value preventing our harming them simply because they are animals. Because they are conscious and goal-oriented, they may be regarded as being “subjects-of-a-life,” the quality that gives them the inherent value upon which we cannot trample without further consideration. With this thinking, Regan would leave us helpless against the forces of Nature, at least as far as conquering disease

through animal research. For example, one finds the following in his book: “If that [abandoning animal research] means that there are some things we cannot learn, then so be it... We have no basic right against nature not to be harmed by those natural diseases we are heir to.” (Regan 1983, p 388)

Regan does not say animals and humans are equal in every way. Although he argues that animals are equal to humans in their right not to be harmed arbitrarily, humans have much greater prospects for various satisfactions. So that if one were asked to choose between saving a single animal’s life or a normal human’s life, Regan would choose the person. The severely mentally impaired, though, would risk the same fate as with Singer.

What these gentlemen would do in a real life situation is interesting to contemplate. The true believers, those who proudly proclaim their refusal to eat meat, wear leather or fur because their production involves the suffering of animals, engage in rank hypocrisy. Do they then refuse medical treatment because animals were used in providing the advances from which they benefit? No! Lance Stell (1995), a philosopher at Davidson College, has contrasted the principled behavior of Jehovah’s Witnesses, who since 1941 have refused life-saving blood transfusions because of their religious beliefs. Their well-publicized refusals have been important in the development of the legal right to the informed refusal of treatment. In contrast, there is no body of case law built on the refusals of animal rightists to accept medical treatment. An organization like PETA, with so many members, and philosophers like Regan and Singer could be in the forefront in taking a principled stand — refusing medical treatments based on future research with animals.

Why is the message so successful?

Primarily, animal-rights leaders are not hampered by a perceived need to tell the truth. Even when proven wrong, they continue to extol an action in a manner that misleads. Ultimately, though, the success of such a misanthropic movement depends on the audience addressed. Here is the nut of our problem so let us examine the audience.

Although the public marvel at medical breakthroughs and eagerly anticipate more, most are not equipped to appreciate that those advances result from many, many small steps. Experiments seemingly unrelated can be trivialized, and a public poorly trained in science is unable to appreciate such a maneuver. If the claim of deliberate cruelty, however false, is linked with the leaders of the movement’s claim that biomedical research is trivial and even unnecessary — just do it on a computer or in a petri dish — one is faced with a real public relations problem.

Secondly, animals have a tremendous draw for people. There is a deep need in most of us to connect with them that I do not fully understand but know is very real. Ignoring that need when trying to convince the uniformed public to support animal use in research is hazardous indeed. Couple that attraction to animals with another seemingly innate human characteristic, identification with the underdog, and you have an audience receptive to persuasion.

Next, although interest in animals remains high, our interactions with them (other than as pets and at a distance on television nature programs) have greatly diminished over a century or so. In 1880, one in two Americans lived on a farm. We were a rural society, and people recognized how much they depended on animals for their own existence. Now the ratio is less than one in fifty. (Strand and Strand 1993) Thus, most citizens’ direct experience with animals is with their pets, creatures serving only one human need, a need that is benign from the animal’s point of view. Why would people not be very sensitive to claims of cruelty in laboratories?

There is yet another factor: Those born after the early 1950’s are part of the healthiest population in history. They do not fully appreciate how healthy they are!

Why are our more benign opponents, those who contribute to organizations and voice disapproval via polls without engaging in nefarious actions, involved? Frankly, I think they have not thought deeply enough to appreciate the medical consequences of blindly adhering to an unrealistic philosophy and have no inkling of the process of science. But, appreciating how science progresses is truly difficult for them and for the average kindly contributor, such as my elderly aunt

Now for the more active, those who do the bidding of the leaders, either illegal, undercover operations inspired by their false claims against researchers or legal, but often immorally intimidating, vigils at researchers’ homes. The fanatical can justify such behavior, of course, because researchers are ‘evil’ and doing useless, harmful things to animals. Beyond this, they are true believers, fanatics for a variety of personal reasons I am sure.

Fred Goodwin, former Director of the National Institute of Mental Health, also suggests that the adherents of the animal-rights philosophy were primed to become so because “there began to evolve in the mid-60’s, a kind of demoralization or nihilism concerning the human condition; in the USA, part of this shift reflected a post-Vietnam, post-Watergate mistrust of society’s establishments and institutions.” (Goodwin 1992)

How harmful is the movement?

In speaking of harm, one can refer to millions of dollars in direct damage to research facilities, including the loss of valuable data, and the considerable sums spent on previously unnecessary security measures. This translates into less money for research and, consequently, slower progress. But there is another, equally (perhaps more) serious cost and that is the one suffered by individuals, specifically, targeted scientists. Imagine reading something like this in a national magazine after a night-time visit from the Animal Liberation Front: “PETA intends to use Morrison to persuade other vivisectionists who were heartened by his strong stand on animal research that it doesn’t pay off,” Newkirk says. “Now the spotlight is on him, and what happens next will deter others who might want to follow in his footsteps.” (Rosenberg 1990, p. 34)

Quite a few scientists have been singled out like this, putting up with ‘vigils’ in front of their homes, efforts to discredit their work

in the media and anonymous or direct threats. Over time, the harassment may fade away, even if the memory does not, and the scientist can return to work. Sometimes he or she cannot. This is terrorism, of course, and it can certainly hamper the creative spirit upon which science depends.

Terrorism works strikingly well. I think the attack on me was effective in largely silencing SFN if not me during the 1990's. As I mentioned earlier, I was chairman of the Committee on Animals in Research for the Society for Neuroscience at the time of my attack in 1990. Thereafter, with a couple of exceptions, SFN was essentially silent on the issue – shamefully silent — during, of all times, the Decade of the Brain. Indeed, the word 'animal' did not appear once in a SCIENCE editorial that extolled the advances made by neuroscientists, which was published at the end of the Decade of the Brain. The President and Past-President of SFN wrote it.

There are also the enervating effects of the bureaucracy that has grown to 'purify' us. I think the IACUC system is fundamentally a good one, but I am sure many of you could recite tales of woe dealing with the pettiness of some actions. The only way to handle them is to regard the requests as the cost of doing business and to move on.

Muddled thinking also harms us and aids the movement:

For example, the way the general media handles the issue presents a real problem. They almost never consider the credentials of those from whom they seek information – or they are not qualified to judge them. Thus, the thoughts of an animal-rightist will be accorded equal weight to those of an eminent scientist. An animal-rightist physician without serious scientific credentials will balance equally with a working scientist too often unprepared for the clever arguments of the animal-rightist.

Another bit of muddled thinking has led directly into meddling with the scientific process, on this occasion the United States Congress. The more extreme in the movement argued that alternatives to animals are at hand if scientists would only use them. Out of this grew the effort of more moderate groups to convince Congress to put pressure on the National Institutes of Health to focus on the development of alternatives. This resulted in a 1993 amendment to the Public Health Service Act requiring the director of NIH to develop a plan for supporting research into ways to improve and reduce animal usage and to encourage scientists to adopt proven methods. After many meetings involving scientists from all the NIH institutes and related agencies, the report in 1993 revealed that NIH had been meeting most of the requirements for years. (Department of Health and Human Services 1993) Of course, you know scientists are not fixated on using animals: we seek methods that will lead to the answers of important questions. We have developed all of the 'alternatives' in use. The organizations that promoted this law should be challenged to contribute more than the meager sum they do into developing different methods rather than diverting problem-driven scientists from doing the best science possible using the most appropriate tools at hand.

Unfortunately, some of those who should represent science do

not have a clear understanding of the issues either. Recently, a once proud reporter of science, *Scientific American*, muddied the waters by insisting on treating the subject of the contributions of animal research to medical progress as a debate between two scientists, Jack Botting and me, (Botting and Morrison 1997) and two animal rightists, albeit physicians, Neal Barnard and Steven Kaufman. (1997) The editors failed to recognize that there are really two components to the issue, ethical beliefs and medical history, and that animal rightists always use distortion of history as a means of supporting their ethical views. I could spend this hour just recounting the outrageous claims of these physicians and others. Jack and I tried to convince *Scientific American* they should not publish the debate but to no avail. Predictably, Barnard and Kaufman wrote an article full of misrepresentations of medical history. Now, *Scientific American* stands guilty of harming science for all time: they have provided a seemingly legitimate scientific reference for the animal-rights literature. And the animal rightists have jumped at the opportunity. They have been using the Barnard and Kaufman references in fundraising materials and in published arguments against the usefulness of animals for research.

Contributing to the muddled thinking is a confused guilt over animal use – and not just for science — deriving I am sure from the barrage of claims by the animal rights movement over many years. Some in the scientific community have come to believe that using animals is fundamentally wrong, but a 'necessary evil.' A natural love of animals fosters such thinking. This thinking has even spawned a group calling itself the 'troubled middle', a presumptuous phrase suggesting that only they care. Concern for animals under ones care and a desire to advance science and help one's fellow man are not mutually exclusive.

An industry has grown up around this sense of guilt in the form of somewhat repetitive conferences focusing much of their attention on how to oversee research involving animals: how to be the perfect Institutional Animal Care and Use Committee member for example or how to avoid using animals by finding alternatives through imposed literature searches. Not that these topics are unworthy of discussion. I simply note that the process is over done in my estimation by what I call the 'community of concern' – and it is generally done without consulting actual working scientists. Rarely is one of my colleagues, a working scientist without administrative responsibilities, a major speaker on the program. Perhaps if they were more alert, researchers would clamor to participate. Scientists should realize that we are at the bottom of the policy food chain when it comes to deciding the future course of experimentation.

How do we answer the message the animal rights movement brings to the public?

There are two parts to the answer. The public must first be helped to understand how science works. This is a truly monumental task. It is so easy to pick on any particular experiment and make it look insignificant. The answer is education, but scientists are unwilling to devote their efforts to this enterprise, and, as I have mentioned, institutions that should be very concerned, pharmaceutical firms heading the list, have allotted a shamefully small fraction of their resources to the effort.

Scientists who understand the vital role animals play in biomedical research also should not shy away from challenging the ethical base of the movement. Few philosophers, let alone scientists, have bothered to respond to Singer and Regan. I think it fair to say that philosophers, like most scientists, probably think the subject to be too far from reality to be worth the trouble. This is too bad, for we need as many clear-thinking people as possible to counter the inhuman ‘animal-rights philosophy.’ For example, in limiting his equation to pain and happiness Singer brings human beings to the level of animals in elevating the latter. As columnist George Will (1999, p. 82) says: “Singer’s utilitarianism is so dry and desiccated that it drains the drama from philosophy. Gone is the juice of life that human beings seek in poetry or religion.”

All but a few sense a duty to their fellow man that supersedes obligations to other species. Humans are unique in so many obvious ways, e.g., brain complexity leading to sophisticated use of language (consider Shakespeare’s plays versus the human-taught sign language of apes) and use of intricately fashioned tools (even to make other tools to make other objects, such as automobiles). Those who try to draw other species into our fold, the great apes in particular, by emphasizing intellectual abilities that are but shadows of our own demean them in my opinion. They cannot come close to us intellectually. Appreciate them in their own right: wonderful creations of nature.

We have a concept of ourselves that goes well beyond a chimp’s ability to ape itself in a mirror. We can see ourselves “as independent individuals with our own integrity, sense of purpose, and worth. We have a concept of our own lives—their origin, duration, self-guided direction, and terminus in death—of world history, and of the limitless reaches of time and space beyond the self.... Humans are the beings who because of their acute sense of self experience anxiety, guilt, despair, shame, remorse, internal conflict, pride, hope, triumph, and so many other emotion-laden states.” (Fox 1986, p. 45) Oddly, the last is a quote from an excellent book by a Canadian philosopher who later recanted, in his own words, at the request of a radical feminist. (Fox 1987) This event led me to do my own thinking on ethical issues.

Only with the capacities I just listed can a being be called cruel or humane in its actions. My cat, playing with a dying mouse, cannot be judged cruel. But I certainly would be were I to torture it to death. We can only kill respectfully and for a defined purpose — and as painlessly as possible. Anything else is cruel. The duck hunter who follows the rules of his craft merits my respect; he who shoots at a passing crow for fun is a cad.

Human intelligence enables us to project the course of our lives well into the future. Given this ability, the exposing of other species to discomfort or even loss of life because we foresee benefits for ourselves and other human beings, is consistent with our belief in the sanctity of human life and our associated obligations to promote human welfare. As Goodman (1998), a rabbi, says: “No other creature [than man] can make the necessary judgments or even recognize the pertinent claims.”

Speaking as a biologist, not a moral philosopher, I would say that the most powerful imperative that justifies the use of animals in

research is that of survival and of protecting kin and other members of the human species from conquerable disease, disability and untimely death. In a very real way, biomedical researchers pursue studies designed to protect fellow human beings. The use of animals by humans to promote the welfare of their own seems no different from or less supportable than a cat’s killing mice in order to maintain her ability to nurse her kittens or a mother eagle’s dismembering prey to feed her fledgling eaglets. Both the human acts and the animals’ acts meet the needs of survival. Viewed from this naturalistic perspective, humans’ intelligence does not render them more culpable of wrongdoing. To the contrary, failure to promote our own species’ well-being — due to some misplaced scruple against the use of other animals — would itself be wrong, because it would ignore the realities of Nature and the power of natural impulses for our own species’ survival. Man’s first obligation is to ensure humanity’s survival. Not to use our own highly developed minds to protect ourselves would be both inane and an affront to evolution.

The ethical problem comes when animals have discomfort or real pain for extended periods. Then we have moved beyond the activity that characterizes many of Nature’s creatures to one that is uniquely human: inflicting pain of varying degrees in order to learn, most frequently as a by-product of the inquiry, e.g., experimental surgery to develop new operations or to implant measuring devices. At the same time, we sense our obligations to these animals and debate the appropriateness of our experiments and the manner in which they are performed. Thus, unlike any other species we pay attention to their welfare as we pursue our interests. There is an irony here, though: the animal rightist argues that every other species should be free to pursue its interests free of our interference; only we are held — foolishly I would say — to a different standard, to our detriment.

Lately, I have come to realize the obvious: we create animals in the image we would like them to have. Animals, of course, are oblivious to our categorizations. We eat pigs in some cultures and abhor them in others. They are even beloved pets sometimes. Speaking of pets, even though we know they are not little persons, we create them as such. Let me give a personal example. I have a young cat, Buster, who captured my heart during his kittenhood. If I stopped walking while he was near me, he would lie on my feet so I would pet him before moving on. He would often stand on my chest while I lie in bed and look closely at me while purring very close to my face. What Buster was thinking, I will never know. Even now that he is mature I look forward to his visits once or twice during the night, when with a soft meow he settles down, purring, for a belly rub. I talk to him all the time while he watches me working in the yard, but he never answers. When I move elsewhere, he follows but at a distance chosen by him, then climbs a tree, seemingly to show off. I enjoy this very much.

Yet, for most of my career I used members of his species in my research on sleep mechanisms because, due to their size and habits, cats are well suited for neurophysiological studies on sleep and other phenomena. How could I do this? Indeed, I asked myself several times a year whether I really wanted to continue. The answer was always ‘yes.’ It came down to faith in the process of science and knowledge of medical history, a belief that

my work would provide a bit of knowledge ultimately useful for solving a human problem. Otherwise, it could not be justified. Now our work involves rats, and I am relieved. To one who keeps a rat for a pet, however, this would not be a satisfactory solution, again emphasizing the point that we decide what the animal is to be in relation to us.

To conclude:

The animal-rights movement will continue to press its case and will impede medical progress through a variety of means. They have the money and will to hound a researcher or an institution into submission. Legal, vigorous protests coupled with rank terrorism are powerful silencers of those who can best challenge them intellectually, scientists. In these activities, the movement is criminal beyond the obvious, for they most certainly insure the deaths or continuing suffering of many of their fellow humans. The movement also possesses the resources to mount legal challenges to laws at all levels of government and to succeed in having unhelpful legislation made into law. Indeed, I think the last is our biggest concern. Lawmakers can be induced to pass legislation or bureaucrats to propose regulations based on pressure from misinformed constituents.

The only defense against this fundamentally anti-science movement is an intensive effort to educate all levels of society in the process of science – school children, teachers, journalists, government officials and ‘the man on the street.’ Scientists should feel an obligation to help them understand the consequences of impeding, through legal or illegal means, the biomedical science that works for them, no matter how important animals are to them. This is an immense task that interested parties must be willing to support financially, for it will require enormous sums of money. As I have said, the bulk of the committed financial support is on the other side of the divide.

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