JROSCIENC E L A R Т R FALL 2010

"Like a hawk teaching its fledglings to hunt, we lead and guide through example."

Michael E. Goldberg, SfN President

THIS ISSUE IN

New Diplomatic Efforts Support a Growing International Membership1
Council Round-Up: Summer 2010 Meeting 1
Message from the President 2
Q&A: Alan Guttmacher4
Inside Science: New Insights into Addiction 6
New NIH Tool Provides Quicker Access to Best Animal Models9
U.S. Congress Convenes Oversight Hearing on Neuroscience Research
2010 Meeting Offers Expanded Professional Development
Personalize Your Meeting, Enhance Your Experience11
Join the Digital Discussion of Great Science12
EV2010 Prograss Report Center Insert



VEUROSCIENCE 2010

New Diplomatic Efforts Support a Growing International Membership

Today, SfN reflects the increasing size and reach of the global neuroscience enterprise — with almost 40 percent of its membership residing outside the United States. Recognizing the role and responsibility it has to serve this growing international community, SfN has been actively exploring new prospects and approaches to provide members around the world with greater opportunities to exchange knowledge and information and to more fully engage in the life and activities of the Society.

At the 7th FENS Forum of European Neuroscience, held recently in Amsterdam, SfN leaders met with leaders of several national societies and international neuroscience organizations to discuss opportunities for pursuing mutual interests and leveraging resources to support the global neuroscience community.

INTERNATIONAL STRATEGY AND GLOBAL PARTNERSHIPS

SfN expanded its international strategy to reflect the growth of its global membership, in 2009. One of the strategic plan's aims is to "collaborate with national, regional, and international neuroscience societies through strategic partnerships and jointly sponsored activities." Such collaborations are a means of leveraging resources to help SfN better serve the professional development, scientific exchange, public education, and advocacy goals of its members around the world.

With this aim in mind, SfN is proactively building on existing international relationships and developing strategic new partnerships with national and regional societies

Continued on page 8...

Council Round-Up: Summer 2010 Meeting

The SfN Council met August 16–17 in Vancouver, British Columbia, for its annual summer meeting. As with past years, the summer meeting focused on long-range strategic planning. This time enables the Society's leadership to discuss and engage in emerging trends within the organization and the broader neuroscience community, and evaluate potential opportunities to enhance service for the field. The following overview highlights key discussions.

SfN BUSINESS MODEL

Council reviewed and approved a set of multi-year planning and pricing principles developed by the SfN Finance Committee over the last year. Through prudent management, SfN will ensure the organization can serve members well in spite of expected economic turmoil, and provide predictable and sustainable resources to invest selectively in priority programs that benefit members. Approved principles include the following:

• Operating budgets should include a \$1 million net revenue target, except in years that a known risk of a potential decline in annual meeting attendance makes reaching the target unattainable.

Message from the President Individual Action for Neuroscience



What did you do today to shape the future of neuroscience? *I made progress on my experiment*, you might say. Without a doubt, it is critical, exciting, and passion-inducing work. It leads to further understanding of biological processes, progress for disorders and conditions, and maybe even recognition for you among your peers.

But while it is necessary, it is *not* sufficient to shaping the larger future for neuroscience.

Each of us must also realize we shape the next generation of neuroscience through frequent advocacy in the public sphere, and our sustained commitment to mentor the next generation of scientists.

The challenge for each of us is to recognize the importance of individual action — and its cumulative effect. If individual scientists engage beyond the bench, it adds up to a collective voice that is able to rise above competing needs and reach new listeners. That listener might be a congressman considering science funding, a high school student considering career paths, a resident in your local senior community wondering what is going wrong with her brain, or a postdoc considering chemistry or neurochemistry. But all of them need to hear from you.

What is our biggest hurdle to shaping our future? Well, to use an old saying, "We have met the enemy and he is us." Truthfully, in the best of all possible worlds, I suspect relatively few of us *want* to do anything but research. It is, after all, our personal and collective passion. But we've got to get over that pull to isolation at the bench or in the lab there is a real world out there, and as much as we impact it, we also rely on it.

My challenge to you is to engage in at least one action each week beyond the bench to benefit neuroscience. I would like to suggest a few places to start: first, help shape the future within neuroscience by mentoring the next generation. Second, work to shape our future within society by engaging with the public and by voting.

MENTORING AND SUPPORTING THE NEXT GENERATION

Little of what we do is a solo effort. Every day, postdoctoral and predoctoral researchers, technicians, students, and myriad colleagues join forces on projects from the conceptual to the concrete. This work forms the body of knowledge we draw from, build on, pick apart, and acclaim.

That is why fostering and supporting these relationships is so important for the future of the field, and why SfN is launching a new effort to develop a more robust mentoring program as a key part of its emerging strategy for neuroscience professional development. Like a hawk teaching its fledglings to hunt, we lead and guide through example. Here are a few examples of how your individual actions can strengthen the future of neuroscience:

- Mentor: Mentoring is more than teaching; it's a two-way contract that exists far beyond the halls of science and doors of labs. Mentors play a critical role in inspiring young colleagues to new insights, helping them navigate complex communities, and fostering continued career success. In addition, a mentor has an obligation to listen, to support, and to advance the interests of their students and postdocs beyond their work in labs. Visit the new mentoring Web page at www.sfn.org/mentoring.
- Inspire the next generation of scientists: We can significantly contribute to the field by interacting with students of every generation. Existing efforts, like the Neuroscience-Teacher Partnership Program and the Brain Awareness campaign, make it easy for you to get involved and to light the vital spark of excitement about scientific discovery in others.

DISMANTLING THE IVORY TOWER OF SCIENCE

Research cannot exist in an ivory tower any longer. It's not a coincidence when a politician supports legislation for medical research or when a newspaper opines on the progress of scientific discovery. They have often had regular visits from scientists and patient advocates who reinforce these values.

Recent court actions threatening U.S. funding for human embryonic stem cells research prove yet again science does not exist in a vacuum. And the continuing threat to responsible animal research reminds us all that progress is never assured. Society and politics play a critical role in the course of research, locally and internationally.

You have a fundamental, irreplaceable role to play in changing the trajectory of research funding and policy. Here's how that change can begin with you:

• Communicate and advocate: We must all do much more to inform our friends, neighbors, and policymakers about the importance of research. SfN has easy-to-use tools and resources to stay on top of the latest developments. Get involved with Brain Awareness Week (www.sfn.org/baw) to reach the public. Sign up for the Society's Advocacy Network (www.sfn.org/advocacy) through which SfN promotes opportunities to engage on funding and animal research issues. SfN generated 19,000 letters during debate over the Recovery Act,

playing a role in building support for historic investment at NIH and NSF. All those letters came from YOU, one at a time. If the science community could sustain that kind of mobilization — one e-mail at a time, including from you — it can make a big difference.

• Vote and contribute: In this U.S. election season, and for many of you around the globe, I can't say it enough: vote, vote, vote in the primaries and the general election. Make a small contribution to the candidate or party of your choice. Political support for science makes a real difference, whether it is supporting funding, working to ensure continued responsible animal research, or trying to repeal harmful restrictions on human embryonic stem cell research. Then, be sure to tell your policymakers why you contributed and voted for him or her — because of their support for research. In the United States, SfN partner Research! America has a great Web site, www. yourcandidatesyourhealth.org, that helps you find out

where your candidates stand on critical research and health issues. And members worldwide can partner with their national societies to help advance advocacy in their own countries. Looking ahead SfN Council is exploring ways we can work more actively with FENS and IBRO to help national societies foster their own nation-specific advocacy efforts around the globe.

DAILY STEPS FORM THE PATH TO MORE DISCOVERY

In the end, all things lead to research. Our actions and interactions are all daily opportunities to stand up for the future of neuroscience. It's not enough to simply assume that someone else is taking care of it. If you're not, why imagine someone else is? Our role as mentors, communicators, and advocates need not be a burden, but a regular part of our work that helps support scientific discovery. It's a compelling responsibility that we must all undertake. I urge you to ask yourself --- "How did I shape the future of neuroscience today?"

Congressional gridlock, an impending election, and federal budget shortfalls are creating an uncertain outlook for U.S. federal research funding. SfN advocacy efforts, and those by broader scientific coalitions, remain active in working to make as much headway as possible in this environment, and SfN continues to encourage members to get involved and help shape scientific support in a new Congress that will convene in January.

FY2011 FUNDING

Prior to the summer congressional recess, several House and Senate Appropriations Subcommittees completed work on FY2011 bills of interest to the neuroscience community. The Labor, Health and Human Services subcommittees in the House and Senate provided NIH with \$32 billion and the Commerce, Justice, and Science subcommittees included \$7 billion for NSF. Both levels reflect the request made by President Obama. While the NIH funding level falls below the \$35 billion advocated by SfN, the Society applauds and endorses the \$7 billion for NSF. Neither the House nor the Senate has voted on final passage of these bills, and neither is expected to resume consideration prior to the November mid-term elections.

Thus, with FY2011 beginning October 1, Congress has approved temporary funding through mid-November under a continuing resolution at a funding level equal to the current fiscal year, excluding dedicated Recovery Act dollars. It is unclear what will happen post-election, but it is

New U.S. Funding Uncertain — Budget, Elections Play a Role

possible that Congress will bundle funding for all government agencies into one omnibus appropriations package.

LOOKING AHEAD

The mid-term elections coupled with the nation's ongoing budget crisis will present a potentially uncertain environment with regard to future funding levels for NIH and NSF. In the coming months the Administration will be forced to make tough FY2012 budgetary decisions as they face a broad range of competing priorities. Research proponents will need to make their voice heard about the necessity of a sustained federal investment in biomedical research.

Given the President's expressed commitment to science, and the significant boost to biomedical research through ARRA and the \$32 billion FY2011 funding levels, it is critical that the Administration continues to hear from the many voices that make up SfN's membership about the promising research underway, its impact on local economies, and what our research means for millions of Americans suffering from neurological and psychiatric diseases. Last year, SfN members generated thousands of letters to the President. Wider efforts by SfN members and the broader community will be vital to impacting the FY2012 budget.

The mid-term elections also will present SfN with an opportunity to not only educate the many new lawmakers who are expected to take office next year, but also begin laying the groundwork for building new champions for neuroscience and biomedical research.

Look for alerts and resources to help you to participate in SfN advocacy efforts, and visit www.sfn.org/advocacy to get involved.

Q&A Alan Guttmacher: Sharing National Priorities, Reaching Common Goals



Alan E. Guttmacher was appointed director of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) in July 2010. He previously served as the institute's acting director, and in numerous leadership capacities within the Human Genome Research Institute. Guttmacher is a highly regarded pediatrician, geneticist, and a decade-long leader and visionary

within NIH. He has played a significant role in supporting the mission of NICHD and in identifying new scientific opportunities in support of its mission to improve health outcomes across the life span.

NQ: What are your top priorities for NICHD?

My top priority for NICHD is simply to accomplish our noble, but challenging, mission: "to ensure that every person is born healthy and wanted, that women suffer no harmful effects from reproductive processes, and that all children have the chance to achieve their full potential for healthy and productive lives, free from disease or disability, and to ensure the health, productivity, independence, and well-being of all people through optimal rehabilitation."

NQ: NICHD's mission spans the life cycle, covering all stages of human development. Given such a broad mandate, what is the greatest challenge to NICHD's pursuit of its mission, and what role does neuroscience play?

Perhaps the greatest challenge is that the most important questions we seek to answer are, unsurprisingly, hard ones. The neuroscience community will play a key role in answering many of these questions, such as how do humans learn, what are the causes of autism, how can we develop more effective prostheses and other assistive devices, etc.

And, recognizing that a great challenge (and opportunity) for all of NIH is that today's best science often involves multidisciplinary teams and approaches that cross the historical boundaries that some would claim divide NIH institutes. NICHD also works closely with other NIH institutes and centers in many efforts of interest to the neuroscience community, from neuroplasticity to the epigenetics of the developing nervous system, from cognition to rehabilitation medicine.

Of course, NICHD strongly encourages investigatorinitiated proposals, in the areas above, as well as other emerging areas of interest to the neuroscience community, to move research forward. We are also very interested in supporting pre- and postdoctoral training in neuroscience to help strengthen the intellectual capital of the field and grow the future workforce in neuroscience research.

NQ: How will NICHD prioritize within specific scientific areas and target groups of scientists given the current funding constraints?

NICHD will set priorities based both on scientific opportunity and public health impact. One way we are working to accomplish this is through a scientific vision process, recently underway, to identify the most promising scientific opportunities of the next decade across the breadth of our institute's mission.

Over the coming months, we will hold a series of small workshops on nine different themes, including development, cognition, plasticity, and other NICHD research areas. These workshops will involve a diverse mix of researchers and clinicians — neuroscientists included — and others weighing in on the research questions they think are most critical. Throughout the process, we will post updates and accept comments from the research community and the public at www.nichd.nih.gov/vision.

My hope is that, despite current funding constraints, this process will stimulate creative thinking and crossdisciplinary collaborations, inside and outside of NICHD, and give us new momentum to overcome some of the biomedical and public health challenges we face.

NQ: NICHD recently reported research on the impact of combat-deployed parents on the emotional and behavioral development of their children. How can NICHD work with neuroscientists to gain greater understanding of the complexities of human reactions to war and deployment?

Neuroscientists can play an important role in at least two areas. The first is the impact of wartime engagements and deployments of military personnel on families, particularly children. The second is the rehabilitation of those injured during wartime, particularly those with traumatic brain injury.

NICHD is interested in understanding more about the unique stressors facing military families and discovering strategies to overcome them. This relates directly to such neuroscience areas as variation in autonomic reactivity, HPA axis function, and how neural systems involving the corpus callosum and dorsolateral prefrontal cortex function after exposure to violence and trauma.

Because of the prevalence of improvised explosive devices in the Iraq conflict, the long-term effects of traumatic brain injury (TBI) among returning soldiers is also a major concern. The NICHD supports an active program to understand TBI and stroke, and recently funded six R01 grants to improve outcomes in TBI. Because studies using targeted agents to improve outcomes in TBI were largely unsuccessful, this Request for Applications solicited studies to obtain preclinical data on the effects of using multiple drug combinations to target the array of physiological changes associated with TBI. We hope the findings from these studies lead to more effective treatments in the future.

NQ: Are there new funding initiatives in the NICHD pipeline and how can neuroscientists support these efforts?

We anticipate that many new initiatives will emerge from the NICHD scientific vision process, and that the neuroscience community will find a number of them worth pursuing. Of course, the community should also be aware of the five areas of special opportunity that NIH Director Francis Collins outlined when he came on board as NIH Director a year ago: high-throughput technologies, translational medicine, healthcare reform, global health, and efforts to reinvigorate and empower the biomedical research community.

Another way that neuroscientists can support both new initiatives and biomedical research in general is to share the importance of their work with the public and with policy leaders. For instance, inviting members of your Congressional delegation and their staffs to visit your lab is often a wonderful way to showcase the intellectual and economic power of neuroscience research, as well as its impact on improving human health and well-being. [*Editor's note:* In July, SfN released a new guide to help SfN members host a lab tour; visit www.sfn.org/labtours.]

NQ: How is NICHD engaging with the larger Blueprint for Neuroscience Research framework?

NICHD is a strong supporter of the Blueprint, and we have been actively involved in developing workshops, research initiatives, and training and education opportunities in neuroscience as part of the Blueprint. Perhaps our main contribution has been to bring a developmental perspective to these conversations. For example, we helped ensure the NIH Toolbox for Assessment of Neurological and Behavioral Function (www.nihtoolbox.org) would be geared toward children as well as adults. Studies of the Toolbox assessment now include samples with individuals as young as three years of age. We also secured funding to expand a large neuroimaging database, funded by Blueprint, to include diffusion tensor images from additional participants, newborns up to 22-year-olds.

Another major trans-NIH initiative that may interest the neuroscience community is the Basic Behavioral and Social Science Network, or OppNet, which Director Collins launched in November of last year (http://oppnet.nih.gov/). OppNet initiatives are multidisciplinary, and many include roles for neuroscientists, like the current initiatives on sleep and self-regulation.

NEW SFN MENTORING PROGRAM BEGINS THIS FALL!

Get connected and become a mentor or mentee (or both!) through SfN's expanded Mentoring Program – offering online mentor matching and other new program features.

- Find a mentor to help guide your career
- Find a mentee who can benefit from your experience
- Take advantage of online message boards, discussion forums, and mentoring resources

The intellectual wealth and diversity of the SfN membership is at your fingertips. The mentoring program is available year-round and worldwide.

This unique career networking resource is the latest SfN member benefit.

Visit www.sfn.org/mentoring for information on how to get involved.

SOCIETY FOR NEUROSCIENCE

Inside Science New Insights into Addiction

Addiction is a devastating disorder with widespread social consequences. In 2006, 23.6 million Americans aged 12 or older needed treatment for an illicit drug or alcohol abuse problem, according to the Substance Abuse and Mental Health Services Administration. Research indicates that addiction takes its toll on behavior by altering brain cell morphology, chemistry, and molecular biology.

As part of an ongoing series, "Inside Science" highlights emerging research presented at SfN's annual meeting. At a press conference at Neuroscience 2009 moderated by George Koob of The Scripps Research Institute, researchers described new discoveries on three distinct stages of addiction: binge, withdrawal, and long-term impact. Their findings, which span molecular, cellular, and behavioral research, indicate why drug abstinence is so difficult to sustain.

ALCOHOL BINGES ALTER NEUROGENESIS

In adolescent non-human primates, chronic alcohol consumption impairs hippocampal neurogenesis, according to new research presented by Chitra Mandyam of The Scripps Research Institute. The findings are consistent with previous research in rats. If the research extrapolates to humans, it could help explain why alcohol abuse diminishes peoples' executive function and spatial and working memory.

In the current study, monkeys were allowed to drink an ethanol-laced Tang drink for one hour per day for a period of 11 months. The animals consumed all the alcohol available to them — equivalent to nearly six cans of beer in each one-hour period.

Two months later the researchers examined the hippocampal dentate gyrus for changes in cell proliferation and differentiation and found that both were decreased. Furthermore, they found signs of neural degeneration and indicators of a necrotic mechanism for nerve cell death. The researchers suggest that hippocampal neurogenesis may be a potential therapeutic target for treating alcohol addiction.

COGNITIVE DEFICITS IN COCAINE USERS: PRE-EXISTING OR DRUG-RELATED?

Chronic drug use has been linked to cognitive deficits, but it has been unclear whether cognitive problems were the cause or effect of drug use. In a study of rhesus monkeys, Charles Bradberry of the University of Pittsburgh and VA Pittsburgh Health Services reports that chronic cocaine use is to blame for cognitive decline.

Bradberry and colleagues allowed the monkeys six cocaine infusions four days per week for seven months. Every other

week, the researchers administered cognitive tests to assess visual working memory (using a delayed-match-to-sample task) and cognitive flexibility (using a discrimination/ reversal task). The monkeys showed impaired cognitive flexibility; additional evidence pointed to a possible impact on attention and stimulus discrimination.

The findings suggest that in human addicts, cognitive deficits are related, at least in part, to drug use.

New Treatment Reduces Drug Craving

Khaled Moussawi, a graduate student in the lab of Peter Kalivas of the Medical University of South Carolina, reported a potential new treatment for addiction, a non-toxic amino acid derivative called N-acetylcysteine (NAC). The treatment restores a cocaine-induced imbalance in a brain circuit that regulates reward and cognitive control.

The reward circuit is normally under the control of glutamatergic projections from the prelimbic prefrontal cortex (PFC) to the nucleus accumbens (NAc). Chronic cocaine leads to anatomic and physiologic changes in the NAc that depress PFC-NAc synapses and interfere with behavior control. The researchers sought an intervention that would normalize glutamate transmission between the PFC and NAc. They found that NAC successfully reversed changes in the brain's circuitry associated with cocaine addiction.



Following exposure to cocaine, rhesus monkeys tested in a drugfree state had difficulty adjusting when the rewards they had learned to expect were changed. These findings demonstrate a direct effect of cocaine on cognitive control, and suggest that impairments seen in human users are at least in part due to drug exposure rather than pre-existing traits. Courtesy, with permission: Charles W. Bradberry. After permitting rats to self-administer cocaine for two weeks, the researchers began extinction therapy and injected the animals daily for two to three weeks with NAC. Following another three weeks of drug abstinence, NACtreated animals showed none of the drug-seeking behavior that would have been expected, despite exposure to cocaine and cocaine-associated cues. This behavioral effect was correlated with normal synaptic transmission, normal excitatory and inhibitory impulses at PFC-NAc synapses, and a return to normal cell anatomy.

The researchers believe NAC prevented relapse by stimulating extrasynaptic metabotropic glutamate receptors. Moussawi reports that preliminary clinical trials involving humans addicted to cocaine suggest that NAC may be useful for decreasing drug cravings.

New Directions: Addiction and Self-Control

Why does drug addiction lead a person to shift focus away from normal needs to drug-seeking behaviors? The answer is related to the disruption of neurotransmitters and brain circuits that drive normal pleasure and inhibition, according to Nora Volkow, director of the U. S. National Institute on Drug Abuse.

Using brain imaging and radioactive tracers to measure dopamine binding, Volkow and colleagues found that dopamine is crucial for addictive behavior — just not in the way they expected. Rather than increasing dopamine, the drug "high" after a while was associated with reduced dopamine binding and a blunted response. In other words, repeated exposure to drug-induced dopamine reduces the normal dopamine burst that would activate the frontal cortex and its connection to the basal ganglia for controlling pleasure and motivating behavior.

In contrast, researchers found that *anticipation* of drug use remains associated with dopamine binding. Hence, the drug abuser places extra value on the drug seeking. As Volkow explained, "The drug is no longer sought by the addict because of liking it (pleasure) but because of needing it (to relieve distress)."

ADDICTION AND EPIGENETICS

Addiction can be viewed as a stable form of drug-induced neural plasticity brought about by long-lasting changes in gene expression. Eric Nestler of Mt. Sinai School of Medicine is working to understand the addiction-related mechanisms that regulate chromatin — the compacted DNA and proteins that compose chromosomes — in order to understand how drug abuse affects genes of the brain and perhaps even to understand how altered genes might be passed from parent to offspring.



At Neuroscience 2009, George Koob moderated a press conference highlighting new discoveries on different stages of addiction.

Chronic exposure to cocaine or opiates causes prolonged activation of certain transcription factors within the brain's reward system, including Δ FosB. Researchers are exploring the molecular mechanisms by which Δ FosB and other transcription factors contribute to the complex pathophysiology of addiction. Nestler reports that Δ FosB influences the density of dendritic spines in NAc neurons. His research group is looking at Δ FosB-mediated chromatin remodeling including changes in the acetylation or methylation of histones that bind to drug-related gene promoters.

In addition, Nestler and others are studying addictive effects on specific genes known to regulate synaptic function, plasticity, and neuronal morphology. The group also is looking broadly for other genes that may be the target of transcription factors that are activated by drug abuse.

Although the gene changes studied in the drug-addicted brain are not heritable, the question of whether changes in histone acetylation or methylation could be inherited and establish a propensity for addiction among offspring of drug users remains an intriguing possibility.

WHAT'S NEXT?

According to the presentations at Neuroscience 2009, changes to the addicted brain are true impediments to recovery from addiction and may be permanent. In turn, researchers are using novel strategies to understand the etiology of addiction and hope to translate their discoveries to develop better diagnostics and therapeutics.

One example is real-time fMRI biofeedback to help people control regional brain activity and regulate their response to craving. In addition, ongoing cooperative work in the public and private sector is testing the efficacy of vaccines that block addictive substances from reaching the brain. The many paths being explored will ultimately converge into treatments that might one day change millions of lives.

To view the video of the press conference and related slides, go to www.sfn.org/amhighlights.

across the globe. Initially focusing on countries with large numbers of SfN members or areas of potentially significant membership growth, SfN is seeking to share experiences, adapt resources, and develop joint programs that support international member needs.

ESTABLISHED BILATERAL PARTNERSHIPS

SfN has historically maintained close ties to Canada and Mexico, which combined account for nearly 2,800 SfN members. Recent collaborations with the **Canadian Association of Neuroscience** and **Sociedad Mexicana de Ciencias Fisiologicas** in areas of public advocacy and education have been productive and can serve as models for SfN's emerging bilateral partnerships. SfN provides guidance, funding, and shared resources to help these societies develop their own national advocacy programs. This is resulting in, among other things, the translation of SfN public awareness materials into French and Spanish.

STRONGER TIES WITH EUROPE

Across the Atlantic, Europe represents the single largest region of SfN members outside the United States, with more than 6,500 members in 36 countries (16 percent of total members; 44 percent of international members). SfN continues to strengthen its long-standing ties with the Federation of European Neuroscience Societies (FENS) through an increasing number of joint initiatives. Collaborative working groups on professional development and advocacy have resulted so far in cosponsorship of an annual FENS-IBRO-SfN School in Europe to support the training of young neuroscientists from around the world. FENS and SfN also are sharing experiences and resources related to promoting public awareness about the use of animals in research, and are discussing ways to jointly engage with the World Health Organization to encourage a global focus on brain wellness. Discussions are ongoing between SfN's Committee on Neuroscience Departments and Programs and FENS's Network of European Neuroscience Schools regarding collaboration in support of neuroscience education and training in North America and Europe.

While not restricted to Europe, the International Brain Research Organization (IBRO) is another historical and key partner of SfN. In addition to its role in the joint FENS-IBRO-SfN schools, IBRO cosponsors with SfN an annual Teaching Tools Workshop for teachers of neuroscience in Africa. Discussions in Amsterdam centered on possible new directions for the IBRO-SfN partnership, including organizing for the first time a joint symposium at the IBRO World Congress next year on the topic of responsible conduct and research ethics. Other ideas discussed included a joint intra-regional training program for young investigators in the Americas. Within Europe, United Kingdom neuroscientists comprise the largest group of SfN members, with more than 1,340 members. The **British Neuroscience Association** (BNA) and SfN leaders met in Amsterdam and exchanged information and experiences about ways to provide value to members through annual meetings, journals, chapters, etc. Among the results are plans for BNA staff to visit SfN headquarters and an invitation for SfN to participate on an advocacy panel at BNA's 2011 annual meeting.

LEVERAGING NEW COLLABORATIONS IN ASIA

Recognizing that Japanese members of SfN comprise the largest group outside the United States (close to 3,000 members, or 7.3 percent of total membership), SfN reached out to the **Japan Neuroscience Society** (JNS) and last year exhibited for the first time at the 2009 JNS annual meeting. Together with JNS, SfN organized a symposium on global public outreach that also included representatives from FENS and the Australian Neuroscience Society. The second joint symposium — "Ethics and Assessment of Neuromodulation" — took place September 2010 in Kobe, Japan, with SfN President Michael Goldberg serving as a co-moderator. Discussions are underway for another joint international symposium in 2011, this time on neuroscience training and education.

In the case of China, while membership in SfN is still relatively low (just over 250 in 2009), the numbers have been steadily growing at 15-16 percent each year with a significant potential for rapid growth given the burgeoning neuroscience community in China. SfN leaders met in Amsterdam for the first time with the **Chinese Society for Neuroscience** (CSN). A priority for collaboration emerged around supporting Chinese efforts to strengthen research ethics and responsible conduct. Planning is underway for a joint international symposium at the CSN 2011 annual meeting, possibly followed by a two-day training workshop for Chinese neuroscientists on this topic.

In the coming year, SfN will continue to engage these and other national and regional societies to identify new opportunities to promote scientific exchange, professional development, public awareness, and global advocacy to benefit its international members. Working together and leveraging the Society's growing network of international chapters, SfN and national/regional societies can combine their respective strengths and resources to serve the global neuroscience community in ways that enable us all to achieve more than we can alone.

For more information about SfN's programs, resources, and activities in support of its international members, visit www.sfn.org/international. ■

New NIH Tool Provides Quicker Access to Best Animal Models

The NIH National Center for Research Resources (NCRR) has launched Linking Animal Models to Human Disease Initiative (LAMHDI), a new online tool that integrates data and information about animal models and makes them available to researchers. LAMHDI project officer Harold Watson, NCRR Division of Comparative Medicine, said that in creating LAMHDI they set out to make "a simple, yet comprehensive Web-based resource that will enable scientists to quickly find the best animal models for their research studies." The overarching goal is to help scientists who work with animal models increase efficiency, improve collaboration, and help bridge the gap between basic science and human medicine. Watson also added, "Critical tools such as these can help accelerate the research process, ultimately leading us to faster treatments."

According to NCRR, LAHMDI is initially focusing on five species: mice, zebrafish, rats, yeast, and flies, and will soon expand to include others, in addition to models such as microbes and tissues. LAHMDI makes the process of selecting an appropriate animal model easier by identifying the links between various models, species, and sources. The site also offers a search of *PrimateLit*, a database of literature about non-human primates, as it relates to models of human disease. Future work will include focusing on neuroscience, infectious diseases, and drug development.

NCRR reported that the LAMHDI initiative grew out of their Animal Models: Informatics and Access meeting in August 2008, as "animal research and informatics experts explored ways to remove research barriers and to develop frameworks for effective computation on existing animal models data to facilitate medical progress." They hope the LAMHDI project, along with the processes and structures created for collecting, organizing, improving, and sharing models and data, helps set a standard for successful knowledge sharing in the future.

Learn more by visiting www.lamhdi.org.

U.S. Congress Convenes Oversight Hearing on Neuroscience Research

The U.S. House of Representatives hosted an oversight hearing on neuroscience on September 29, entitled "From Molecules to Minds: The Future of Neuroscience Research and Development." The hearing, held by the House Oversight and Government Reform Subcommittee on Domestic Policy chaired by Rep. Dennis Kucinich (D-OH), addressed the state of neuroscience research and current efforts to expand knowledge of neurological disorders. Rep. Patrick Kennedy (D-RI), long-time advocate for brain research and mental health, was instrumental in encouraging the committee to focus on this topic.

Witnesses included leaders from research institutes at the NIH, Department of Defense, and Department of Veterans Affairs. John. H. Morrison, chair of SfN's Public Education and Communication Committee, testified on behalf of SfN, and other testimony was provided by academic leaders, pharmaceutical representatives, and patient advocacy organizations.

Morrison's testimony highlighted the tremendous strides neuroscientists have made over the last several decades and the importance of a continued strong investment in basic neuroscience to sustain progress. He also urged that the field develop team-oriented collaborative approaches between basic and clinical researchers to ensure future



John. H. Morrison, chair of SfN's Public Education and Communication Committee, testified at a congressional hearing on behalf of SfN, alongside other leaders in the neuroscience research field, including SfN past president Huda Akil.

success in advancing biological knowledge and human health. His testimony highlighted examples of progress made in better understanding the neurological components of the aging process, increased understanding of the brain circuits involved in post traumatic stress disorder, and the importance of practical application and translation in our increased understanding of synaptic brain plasticity. Full testimony can be found at www.sfn.org/advocacy.

NEUROSCIENCE 2010

2010 Meeting Offers Expanded Professional Development



The 40th SfN annual meeting offers attendees a more diverse array of career development opportunities — the fruit of yearlong planning by SfN's new Professional Development Committee (PDC). The PDC, along with a Council-appointed Professional Development Working Group, has developed recommendations for a multiyear plan (*see the Council Round-Up on page 1*) aimed at enhancing the range of professional development programs and activities for the many SfN constituencies.

These constituencies reflect different career stages as well as various demographics, such as female, underrepresented minority, and international neuroscientists. Along with many of the familiar sessions, Neuroscience 2010 attendees will find new events to support the diverse universe of SfN members and their professional development needs.

GUIDANCE FOR FIRST-TIME ATTENDEES

Neuroscience 2010 offers a new workshop on "Navigating the SfN Meeting," created for students and other first-time attendees. A panel of savvy SfN meeting veterans will share tips on how to get the most out of the rich and potentially bewildering array of activities. To accommodate attendee schedules, this session will be offered twice — on Saturday and Sunday.

CAREER WORKSHOPS FOR A WIDE RANGE OF ATTENDEES

This year SfN offers an expanded line-up of 10 additional workshops focusing on a broad range of issues. Attendees can choose from popular past workshop topics while finding new sessions aimed at varying career stages and needs:

- Professional Image NEW
- Grant Writing in the New NIH Format *NEW*
- Writing Manuscripts for Publication *NEW*
- Funding Transition from Trainee to Independent Investigator *NEW*
- Becoming an Engaged SfN Member through Volunteer Opportunities *NEW*
- Essential Skills for a Successful Mentoring Relationship *NEW*
- Careers Beyond Academia
- Managing a Research Lab
- Teaching Neuroscience
- Why Academia?

New Poster Sessions Showcase Young Neuroscientists

Also new in 2010 is a special poster session on Saturday evening for travel award recipients where graduate student and postdoc winners can present and discuss their research in a smaller setting. This session will be run concurrently with the Diversity Fellows Poster Session and International Fellows Poster Session, which also feature the work of earlycareer neuroscientists. Combined, they offer an excellent opportunity for meeting attendees to engage with these outstanding young scientists.

NEW MENTORING AND NETWORKING EVENTS

As mentoring has consistently been identified as highly important to SfN members, mentoring events have a prominent place at Neuroscience 2010. On Saturday, more than 50 experienced SfN neuroscientists will be on hand to offer advice on a wide range of topics in an informal, roundtable format. Discussions will center on work-life balance, being a clinician-scientist, choosing graduate schools and postdoctoral positions, job hunting in the biotech industry, and more.

A new workshop, "Essential Skills for a Successful Mentoring Relationship," explores the various facets of mentoring across the entire life cycle of a neuroscientist. Experienced mentors will be on hand and lead a discussion on new and more flexible approaches to mentoring. Meanwhile,



With more than 16,500 abstract submissions this year, Neuroscience 2010 offers attendees an abundance of neuroscience discovery.

NEUROSCIENCE 2010

the annual "Celebrating Women in Neuroscience" luncheon features Barbara Sahakian, a professor of clinical neuropsychology at The University of Cambridge, and offers yet another opportunity for networking with mentors.

Build Your Scientific Knowledge

While much at Neuroscience 2010 is new, other popular professional development sessions return, including the day-long Neurobiology of Disease Workshop (NDW) and Short Courses. This year's NDW on "The Neurobiology of Obesity" focuses on this escalating global health threat. The three Short Courses cover a variety of fascinating and timely issues: genes, photons, and electrons in systems neuroscience; posttranscriptional regulation in nervous system development and plasticity; and large-scale brain networks.

The Meet-the-Expert series introduces 10 experts who will discuss their research techniques and accomplishments in small-group sessions. These gatherings offer participants an opportunity to engage in an informal dialogue and gain a behind-thescenes look at factors influencing the expert's work.

NEUROJOBS RESOURCES AVAILABLE

For those seeking jobs or looking to hire neuroscientists, the NeuroJobs Career Center will again provide access to on-site interview booths and dedicated computer terminals for posting and searching for jobs, scheduling interviews, and using the message service. Sign up early at www.sfn.org/neurojobs.

As the premier global venue for emerging neuroscience, SfN's annual meeting offers numerous opportunities for neuroscientists to share and build knowledge, and to network and enhance careers. Plan to take advantage of the expanded professional development offerings at Neuroscience 2010. Details can be found on the annual meeting Web site, www.sfn.org/am2010. ■

Personalize Your Meeting, Enhance Your Experience

This November, scientists from around the world will gather in San Diego for Neuroscience 2010, the premier venue for cutting-edge research on the brain and nervous system. SfN's interactive tools and resources make getting around Neuroscience 2010's variety of programming choices and personalizing your meeting experience easy.

NMP GOES MOBILE

Merge the science you want to see with the lectures and events you want to attend for a truly personalized meeting experience. The Neuroscience Meeting Planner (NMP) provides detailed information online about every event at the annual meeting, including time, date, location, speakers, and abstracts. The advanced search option uses a variety of fields to locate presentations, such as theme, title, author, and more. The itinerary option allows attendees to plan each day of the annual meeting according to area of study and specific interests. New this year, attendees can create a meeting itinerary and download to a calendar like Microsoft Outlook 2007 or Apple iCal. Once created, a personal meeting itinerary can be exported to a .csv file for use in Microsoft Excel, or viewed on a personal mobile device. Have your meeting itinerary at the tip of your fingers, upload to your mobile device, or add to your personal calendar before you arrive.

VIEW THE SCIENCE ON YOUR E-READER

Join SfN in its commitment to environmental responsibility by opting for the electronic version of annual meeting publications. If you own a Amazon Kindle, Sony E-Reader, Barnes & Noble Nook, iPhone, or iPad, plan ahead by downloading the *Program* and abstracts in PDF format before you arrive. For download instructions, visit www.sfn.org/am2010. These new features make program information more accessible for attendees.

USE THE NMP: PLAN AHEAD

- Search sessions using a variety of search fields
- **Create** a personal itinerary before the meeting
- View your itinerary in different views and grid displays
- Download to Outlook 2007 or Apple iCal *NEW*
- Export to Excel NEW
- Visit the on-site NMP viewing room for quick updates and printing
- Reference the NMP at six abstract locator stations on the poster floor.

Access the NMP online at www.sfn.org/nmp.

NEUROSCIENCE 2010

Join the Digital Discussion of Great Science



To increase awareness of the annual meeting and to make resources available to as many attendees as possible, SfN is excited to continue its social media outreach through blogging, Twitter, and Facebook.

CREATING BUZZ ABOUT NEUROSCIENCE — NEUROBLOGGING

With the successful launch of neuroblogging at Neuroscience 2009, SfN again invited members to apply to serve as official Neurobloggers. The 2010 blogs will serve as an informative online meeting resource and offer previews of research found within lecture halls and on the poster floor. Like last year, the 2010 blogs will provide personal commentaries about sessions, conversations about meeting life, interviews with speakers, and more — from an attendee's point of view.

While the blogs touch on various aspects of meeting life and create buzz about science, they also serve as an essential channel of communication with the lay public. "Neuroblogging helps put the heavy science into lay language, and makes what we are doing more understandable and interesting, especially when it can be related to daily life experience," notes Scicurious, a 2009 Neuroblogger. Detailing science to a public audience allows researchers not only a chance to learn how to explain their own science, but also gives bloggers the unique privilege of demonstrating "how tax dollars are being spent and how scientists ask their questions and test hypothesis, ultimately providing great education on the scientific process," added Scicurious.

Wide ranging topics posted to the blogs also give attendees the opportunity to branch away from their own research and hear about other areas of the field, potentially inspiring collaboration. Attendees can then find "buzz" about posters and from researchers themselves. Science posted to the blogs creates online coverage and gives researchers the opportunity to interact by asking questions and providing feedback.

Follow the Meeting on Twitter

Find Neuroscience 2010 on Twitter at **Neurosci2010**. Tweets will feature daily program highlights, special features, and meeting announcements. Use and follow the official hashtag, #SfN10, to comment on cutting-edge science and meeting experiences and to hear what your peers are saying about the annual meeting.

Join SfN on Facebook Before Arriving in San Diego

Don't forget to join the official SfN page on Facebook, which posts regular announcements keeping more than 9,400 fans up-to-date with annual meeting resources and events. Become part of the community today at www.facebook.org/ SocietyforNeuroscience.

SfN WEB SITE — YOUR VALUABLE RESOURCE

While navigating the SfN meeting, bookmark the SfN Neuroscience 2010 Web site, www.sfn.org/am2010, for current information on lecture rooms, exhibit listings, and session times. While in San Diego, watch for *Nexus Extra*, your daily digest via e-mail for all things Neuroscience 2010.

FREE WIRELESS INTERNET

Bring your wireless device or laptop to the meeting and check-in with SfN interactive resources between attending lectures and seeing the science on the poster floor. Use free wireless Internet throughout designated areas of the convention center.

Your laptop or PDA must have a built-in wireless card or external card that is 802.11a, or 802.11g compatible to use this service. A wireless support desk will be available for Internet connection assistance in the attendee services area. Wireless service will not be available in the exhibit halls or poster session areas. For more information, visit www.sfn.org/wireless.

Your Meeting — Your Experience

Make your experience a personal one — gain more from your time at Neuroscience 2010 in San Diego by using these specialized resources, designed with the attendee in mind. For more information about these and other annual meeting features, visit www.sfn.org/am2010.

Learn about hot topics and areas of interest that span the field — follow the 2010 Neurobloggers at www.sfn.org/bloggers.

VISIT THE SFN BOOTH #2013 IN THE EXHIBIT HALL!

Learn about SfN MEMBERSHIP BENEFITS and RESOURCES

Creating Venues for Great Science

- Pick up a free copy of the latest issue of The Journal of Neuroscience
- Learn about the manuscript submission and review process
- Learn more about The History of Neuroscience book and video series

Supporting the Neuroscience Community

- Renew your membership
- Find a chapter in your area or learn how to start a chapter
- Learn about career, award, and fellowship opportunities
- Sign up for SfN's online mentoring program

Educating and Engaging the Public

- Learn how SfN is championing scientific research
- Discover how you can help educate the public about the wonders of the brain

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- Program enhancements or departures from the multiyear planning targets should be balanced by revenue increases and/or expenditure reductions.
- SfN should seek to achieve and maintain a reserve of 115 percent of the identified risks in the Multi-Year Reserve Strategy document such that a 30 percent reduction in market value of SfN's reserves such as that experienced in the most recent downturn would still allow for at least 85 percent coverage of identified risks. SfN is on track for 83 percent coverage by the end of FY2011 and 89 percent by the end of FY2012.

Council also adopted a multi-year plan for SfN's pricing structure that seeks to maintain equity across membership categories while providing the necessary resources to invest in emerging priorities. Prices in most fee categories will now increase annually by a smaller percentage — in contrast with recent larger increases every two years - providing for steadier and more predictable funds for program priorities. The approved strategy also provides continued discounts for students and postdoctoral fellows, as Council believes strongly that these two groups represent the future of the field. As membership dues for regular members increase annually, SfN will modify fees to ultimately achieve a 65 percent discount for student members, and maintain the current 25 percent reduction for postdoctoral members. Similarly, as annual meeting registration fees increase each year, SfN will work to achieve a 50 percent discount for student members and a 25 percent discount for postdoctoral members.

EMERGING STRATEGIC PRIORITIES

Based on business model decisions that ensure a sound financial footing, Council explored four emerging areas of opportunity to enhance member value.

1. Professional Development — The last SfN member survey revealed strong interest in expanded professional development opportunities. In response, Council created a Professional Development Working Group (PDWG) in summer 2009. Comprised of Council and committee leaders, the PDWG was tasked with investigating and making recommendations for addressing key cross-cutting professional development challenges and opportunities, and worked over the past year to draft a multi-year plan.

The draft plan, which was discussed and enthusiastically endorsed by Council, initially focuses on recommendations for easily achievable, lower-cost, and short-term strategies and then expands to larger, long-term initiatives, that reflect the following approaches and principles:

- Identifying and addressing needs across all career stages and reflecting the full range of career options for neuroscientists.
- Broadening venues at which SfN offers professional development opportunities to balance annual meeting activities with those outside the meeting.
- Using Internet tools and technologies to cost-effectively reach the widest possible audience.
- Leveraging collaboration with existing and potential new partners.
- Maintaining a sustainable pricing strategy.

The plan envisions enhancing existing programs (see page 10 for a discussion of expanded professional development programming at the annual meeting), while also introducing new initiatives that leverage SfN's strengths and those of partner organizations. The PDWG will now work with staff to craft an implementation plan for future Council consideration.

2. Social Technologies — Over the past year, SfN has been evaluating the potential to apply social media technologies to advance the organization's mission, while protecting and enhancing its business model. Ensuring that a robust and flexible infrastructure is in place to support these technologies has been a priority in recent years, and early experiments in the area have enabled the organization to identify interest and areas for potential growth. These include the rapid growth of SfN's Facebook and LinkedIn communities, as well as promoting active "neuroblogging" at the SfN meeting.

During its summer meeting, Council formed an advisory group to provide scientific and member perspective on the application of social technologies, project prioritization, and potential resource needs. The expectation is that selected new initiatives will continue launching in coming months and that social media will be a key tool for providing robust SfN member programs and services.

3. Changing Membership — To ensure SfN continues to deliver value to a growing membership, Council has formed an advisory group to explore how membership demographics are changing and which services and programs will best meet the needs of these constituencies. The Society has experienced continued membership growth, with a record 40,290 active members in 2009. This represents a 43 percent increase since 1998 and reflects SfN's continued success in delivering value to an expanding field. The

fastest growing sectors of the membership are students and members residing outside the U.S. The advisory group will guide the creation of the next comprehensive membership survey. This survey will be conducted in early 2011 and will pay particular attention to the needs of students and international members, as well as other key member constituencies. Results will then inform the development next summer of an updated membership enhancement strategy.

4. Annual Meeting — The SfN annual meeting continues to be the world's premier meeting for the exchange of neuroscience discovery. As attendance grows and attendee demographics evolve, SfN is working to ensure the meeting satisfies both continuing and emerging needs and goals of the Society's members.

Council appointed a working group to make recommendations about how to maximize the value of face-to-face scientific exchange, sustain scientific dynamism, enhance the on-site experience, and amplify the meeting's value throughout the year. Additionally, the group will identify and evaluate benefits of new technologies that could be used either at the annual meeting or to manage content presented there. It is anticipated this group's work will be informed by the groups focusing on professional development, social technologies, and the changing membership.

STRATEGIC PLAN

Council developed the current SfN Strategic Plan in 2005 and it has been revised and refreshed annually since. It was designed as an essential governance tool that would guide activity as well as evolve based on achievements and critical opportunities. In Vancouver, Council undertook an evaluation of the plan and made several changes, which fell into three main categories:

1. Major Revision to a Strategy — A major revision to the Public Communication and Education Strategy was done to create a roadmap for the next three to four years of activity to improve the public's neuroscience knowledge and conduct public outreach. Informed by a process undertaken by the Public Education and Communication Committee, the new plan establishes priority activities through which SfN is best positioned to educate the public, support its members in outreach activity, and meet the needs of today's teachers.

2. Identifying Other Strategies for Revision — Three strategies were identified as needing major revision either because of evolving opportunity or partial achievements: the Enhancing the Member Experience Strategy, the Annual Meeting Strategy, and the Financial Reserve Strategy. These have been temporarily removed and are in the process of being revised. New strategies in each area are expected to be approved over the next year.

3. Elimination of Strategies — After careful review, Council eliminated two strategies because the objectives had been largely accomplished: Open Access Publishing Strategy and Committee Realignment Strategy. Council believes strongly that both of these areas need to be monitored carefully on an ongoing basis.

The revised strategic plan may be found at www.sfn.org/strategicplan.

NEUROSCIENCE Q U A R T E R L Y

Published quarterly by the Society for Neuroscience

Circulation: 39,580 © 2010 Society for Neuroscience

Opinions expressed in *Neuroscience Quarterly* do not necessarily reflect those of the Society or its officers and councilors.

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Neuroscience Quarterly is printed on New Leaf Reincarnation Matte made from 100% recycled fiber and 50% post-consumer waste, printed with soy inks, and processed chlorine free. By using this environmental paper, SfN saved the following resources:

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Members who renew by Dec. 31, 2010, will have the opportunity to register and secure housing for Neuroscience 2011 in Washington, DC, a full day before registration and housing opens for all members.

Registration and housing for members in good standing will continue to open one week prior to nonmember registration.

For further details, visit www.sfn.org/memberbenefits



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