NEUROSCIENCE QUARTERLY

SPRING 2009

"SfN is going to need every member to become engaged, and stay engaged, over the coming months and years to make the case for robust and reliable funding year in and year out, something very different than the extraordinary one-time, two-year stimulus for science funding we have just witnessed."

— SfN President Thomas J. Carew

IN THIS ISSUE

SOCIETY FOR NEUROSCIENCE

SfN Advocacy Supports Visionary Science Funding in U.S. Stimulus Bill

U.S. President Barack Obama signed the American Recovery and Reinvestment Act on February 17. The bill provided $10.4 billion in additional funds for the National Institutes of Health (NIH) and $3 billion for the National Science Foundation (NSF). *Neuroscience Quarterly* looks back at an unprecedented science-wide advocacy effort that supported the bill, and previews continued advocacy in the months ahead.

A blackberry message interrupted the SfN Government and Public Affairs (GPA) Committee 2008 fall meeting. A participant read aloud the news that the Economic Recovery Act of 2008 had been introduced in the U.S. Senate, in a surprising but welcome twist, it included $1 billion for the NIH. While that particular bill would not become law, it coincided perfectly with the GPA Committee's discussion that day about ensuring its advocacy articulated the substantial economic benefit to nations and communities, something particularly important amid a crumbling market.

With additional guidance over the ensuing months from Council, GPA Committee members, and other key neuroscience leaders, the discussion begun that day enabled SfN to be early, swift, and aggressive in advocating for bold and visionary funding for science.

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FY2010 Advocacy: Sustaining Scientific Momentum

Having thanked the President and congressional leaders for their tremendous support for research in the economic recovery bill, SfN and the scientific community are working to ensure that the nation seizes the scientific momentum created by this investment to improve health care and build a science-driven economy.

SfN is joining its advocacy partner Research!America in calling for an increase of at least 10 percent for NIH in FY2010, forming a foundation to improve health and create a stronger, science-driven U.S. economy. This recommendation, which seeks to reach $40 billion for the agency as soon as possible, will help ensure America seizes and builds on the scientific momentum that will emerge from the recovery bill. SfN also is recommending $7 billion for the National Science Foundation in FY2010, a 7.9 percent increase above last year.

SfN needs the full participation of its members to carry this message to U.S. lawmakers. In addition to the Capitol Hill Day on April 22, SfN will alert members to many opportunities this summer to reach out to senators and representatives. To stay updated on what's happening in Washington and become more involved, join the SfN Advocacy Network at www.sfn.org/advocacynetwork.

Message from the President

Funding Science: The Future Is Upon Us

Thomas J. Carew, SfN President

During their tenure, all SfN presidents are honored to write four quarterly columns that reach a global community on pressing topics confronting the science community. As I look around me — at my laboratory, my university, my nation, our global community — it is simply too important to ignore this profoundly consequential moment in our history.

These are extraordinary times — we are experiencing economic uncertainty not seen in a generation. And yet, here in the United States, we are also experiencing opportunities for science not seen in at least a decade. This is creating a new dynamic, where science, scientists, and the public share a common purpose that is clearer and more important than ever. Indeed, science and scientists are being tapped by the U.S. leadership in historic ways to help form the "pillars of recovery" for an historic crisis, as President Obama put it recently.

The American Recovery and Reinvestment Act, the "recovery bill," creates a sea change in opportunity for both scientific discovery and for the next generation of scientists. And in turn, it also creates profound responsibility for scientists — first and foremost, to do great science; second, to be accountable for the extraordinary investment afforded us by the nation; and third, to expand our advocacy, turning this unique scientific *moment* into sustained scientific *momentum*.

The science community is tremendously grateful to the U.S. leaders — especially President Obama, Senators Specter and Harkin, and Speaker of the House Pelosi — who championed science as a cornerstone for a stronger and ultimately more competitive high-technology economy, as well as a solution for global health care problems. This collective leadership has set a standard for aggressive science funding that others worldwide will emulate. The shift is profound and the scientific opportunity equally so. Who knows what new paths to discovery may be taken by neuroscience in the coming decade? With an infusion of resources, the recovery bill will potentially enable us to chart a course for many exciting scientific possibilities.

And beyond the unprecedented funding we are experiencing, the rapid change in attitude toward science in Washington is astonishing. Science leaders across agencies have renewed access to the President and renewed independence. We have colleagues like Harold Varmus, Francis Collins, John Holdren, Eric Lander, Jane Lubchenco, and many others helping to "return science to its rightful place," as the President's inaugural address noted. Already, stem cell restrictions are being lifted, and the voices of climatologists are being heard. Overall, this administration is *embracing* science as a means to help make the world a healthier, more economically successful and more vibrant place.

This moment also presents an extraordinary opportunity to strengthen the scientific enterprise by supporting young scientists. In my view, 2008 ended with science balancing on a knife's edge, threatened with losing a generation of extraordinary scientists struggling for independence and resources. With flat or falling funding, a remarkable cohort of young people has been imperiled, at least in part, because the scientific enterprise has not been structured to prepare for career holding patterns. I am tremendously hopeful that the current broader signals can encourage this next generation of professionals to stay the course, and that the science community will make it a high priority to ensure they have a place at the table. But we don't have much time — maybe only a year or so — before young scientists become an endangered species. If we lose them now, society loses their advances 20 to 40 years from now. And if they go, it will take a long, long time to reconstitute laboratory groups when (and if) funds come back in place. Once lost, intellectual, scientific, and personal momentum is incredibly hard to regain.

To avoid this potential threat to the next generation of scientists, and to ensure a bright future for science and scientists, we must maintain another kind of momentum — advocacy momentum. SfN is going to need every member to become engaged, and stay engaged, over the coming months and years to make the case for robust and reliable funding year in and year out, something very different than the extraordinary one-time, two-year stimulus for science funding we have just witnessed. Congress must ensure that America seizes the scientific momentum created by the stimulus to improve health care and build a science-driven new economy. This means strong advocacy must start with the FY10 federal budget, which is already being discussed in Washington. And it requires a new kind of science advocacy — not one trying to overcome opposition, but rather one making science a high priority that is integrated with a wide range of other worthy efforts.

I am tremendously proud of the role that SfN played this winter in promoting support for the stimulus. SfN took early leadership, and members quickly joined the call, sending nearly 19,000 letters to Capitol Hill and the President in only a few weeks — more than quintupling past efforts. In the past, we have been very good at local events and targeted issues. But the Society's advocacy efforts came of age this winter, acquiring a maturity learned and earned under the unique pressure of an economic and scientific crisis. Our members now appreciate that not only are we in a new domain, but also we can be VERY good at it.

While we celebrate success, we should note a reality — those letters were generated by no more than a quarter of the U.S. membership of SfN. And wow, did they do a great job! But imagine if ***every*** U.S. SfN member got involved. How easy would it be to direct 100,000, or 200,000 letters a year to our public leaders in support of science? Imagine if international members similarly engaged their policymakers to support science investments in their home countries? If you look at other successful policy advocates — whether or not we personally support their goals — sustained success is found in articulating a clear message over and over and having a huge number of voices convey that message. It's not enough to say it once — it takes repetition and volume. The Society has made it extremely easy to make a difference — six clicks in SfN's online Legislative Action Center advocacy system when a call to action is sent.

We have ***all*** got to get busy. After all, if there are two people rowing a boat, one rower is not doing the other a favor by "helping out." Only by rowing together can the pair make the boat go forward on a straight course. So when we advocate, we are not "doing favors" for one another. Rather we are upholding our collective responsibility — our community deeply relies on a strong and unified front to ensure that science has a loud and clear voice. Perhaps we don't like thinking of ourselves as an "advocacy group" — but what are we advocating for? More and better science, more and better health care options, and more and better economic vitality. These are good for science, good for America, and good for the world.

Finally, in our advocacy, we must articulate the role of science as an economic engine. I am the first to admit that we as scientists are not accustomed to thinking about our research in terms of jobs. For the most part, we get to follow our curiosity and let imagination guide us to discovery. Personally, I have never considered my laboratory members "employees." They are my colleagues — a research team that I am privileged to lead. But the fact is that the bulk of NIH/NSF grants support and create jobs for laboratory personnel. Nationwide and worldwide, teams of scientists, postdoctoral fellows, graduate and undergraduate students, and technicians work in thousands of local communities, pay taxes, buy groceries, put gas in their cars, and send their kids to local schools. These jobs in turn have sparked economic development and have promoted the notable rise of state-based, high-tech corridors. Thus as scientists, we have to appreciate the fact that, in addition to advancing knowledge, we are also part of, and drive, an economic engine that is fueled by our science. We can't be afraid to say that. Yes, we work in the service of discovery, but we also provide a vital contribution in the service of growing the economy.

Just like the science we all do, science advocacy is not a sprint, it's a marathon. This winter, SfN came out of the blocks in an extraordinary way, but in a long distance race, winning is achieved by pacing and never letting up. The scientific, economic, and advocacy force of research can and must be here to stay in order to truly catalyze lasting change. If we succeed, we blaze a path for the next generation of scientists. We owe it to them. ■

SfN Supports Scientists in Training in Response to Hurricane Ike

In October 2008, when Hurricane Ike destroyed much of eastern Texas, including the University of Texas Medical Branch (UTMB), the SfN Executive Committee quickly saw a need to respond to local members facing a crisis. UTMB, a premier research campus located on the Barrier Island of Galveston Island, includes six hospitals, various schools of medicine, and several institutes and research facilities. The destruction of Hurricane Ike was estimated at $709 million and left many UTMB students, faculty, and staff without homes, research facilities, transportation, and jobs. Once news broke of the devastating storm, SfN extended support and assistance.

With Neuroscience 2008 just around the corner, the Executive Committee authorized a special fund for graduate student and postdoctoral travel awards to the annual meeting in Washington, DC. SfN disbursed a total of 24 travel awards and provided complimentary registrations to 14 graduate students and 10 postdoctoral trainees at UTMB who might otherwise have been unable to attend the 2008 annual meeting.

To further assist with the recovery efforts in Galveston, SfN leadership approved a $15,000 donation to the UTMB Graduate School of Biomedical Sciences. UTMB reviewed over 400 applications from young scientists requesting assistance, and SfN funds went to 19 of 70 graduate students and research postdoctoral fellows in the Neuroscience and Cell Biology Program.

Individual letters infused with heartfelt appreciation for SfN's assistance were received from each of the funding recipients. One postdoctoral fellow described how the SfN funds, which were used to purchase an external hard drive and waterproof casing, helped her to get excited and motivated again about her research in the aftermath of the disaster. The loss and disruption for the UTMB community has been great; however, the community remains hopeful as jobs and research facilities are restored. SfN is pleased to have been able to contribute to encouraging and enabling its young members in Galveston to rebuild their lives and research careers. ■

Q&A with Alan I. Leshner

Alan I. Leshner

***Alan I. Leshner**, a neuroscientist and former director of the U.S. National Institute on Drug Abuse, is Chief Executive Officer of the American Association for the Advancement of Science and Executive Publisher of* Science. *He serves as Chair of the Forum on Neuroscience and Nervous System Disorders, a project of the Institute of Medicine at the National Academies. Since 2006, the Forum has led a multi-disciplinary, multi-sector discussion of critical issues confronting the field. The Forum includes representatives from academic, clinical, pharmaceutical, and advocacy communities who are involved in neuroscience, as well as public and private sector leadership. It has generated four major reports, including "From Molecules to Minds: Challenges for the 21st Century," released last fall, and "Venture Philanthropy Strategies To Support Translational Research," released this winter.*

***NQ:* Why was the Forum launched at the National Academies, and what do you think it has achieved in the past three years?**

Recognizing the need to bring together the diverse set of stakeholders involved in the neurosciences, the National Academies established the Forum on Neuroscience and Nervous System Disorders to engage leaders from private sector sponsors of biomedical and clinical research, federal agencies sponsoring and regulating basic biomedical and clinical research, private foundations, the academic community, and consumers.

Through its quarterly meetings and public workshops, the Forum has provided a venue where its members, other leaders from the neurosciences, and members of the public can have candid discussions about issues of mutual interest. We believe these discussions enhance understanding of research and clinical issues associated with the nervous system among the scientific community and the general public, and provide a mechanism to foster partnerships among stakeholders. Two particular examples include a Forum workshop and report on autism and the environment that brought together advocates, scientists, and funders, and a series of meetings on venture philanthropy, a relatively new phenomenon where advocates and patient groups become both funders and partners in research programs.

***NQ:* Neuroscience is a tremendously diverse field, linked by a common organ. How does the Forum leverage the diversity of opinion and interest to draw the field together? Are there times diversity creates more challenges than strengths?**

The diversity within what we call neuroscience has led both to unusual and very productive collaborations and to some competition among approaches. I think we all are aware of the tension that sometimes exists between what we might think of as the "reductionists" versus the "up-actionists," those interested in more systems or "higher order" questions, like the emergent properties of brain structure and function that lead to our experiences of our minds. But I also think that neuroscientists are as a group rather uniquely interested in broad sets of questions. As you say, we are all linked by this common organ, and each tends to want to know as much as one can about all of its aspects. In my own experience, neuroscientists are less stilted in their interest than are scientists in many other fields.

***NQ:* The Forum recently identified and released "grand challenges" in neuroscience to "rally scientists and the public around the possibilities of neuroscience in the 21st century." Why now and what is needed to accomplish the vision set forth by the Forum?**

The neurosciences are unquestionably among the most rapidly advancing and exciting fields of science, no matter how broadly construed. As was highlighted in the Forum's recent "Grand Challenges" workshop, recent breakthroughs in the many neuroscience sub-disciplines and related disciplines — molecular biology, psychology, neurology, chemistry, mathematics, physics, engineering, computer science — have led to a point where we believe some greater collective action and focus could lead to a substantial leap forward in our understanding of the brain, the mind, and the diseases that result from their malfunctioning.

From my perspective, ideally the vision of this Grand Challenges Initiative is to ultimately reduce the burden of disorders of the nervous system by framing a more integrated, large-scale research program that would both spark public excitement and attract substantial funding to move the field ahead in a quantum step. Scientifically, the time is right. What the neurosciences now need is leadership from within the field to refine and move forward these concepts. The implementation of this vision now rests with

the broader neuroscience community of researchers, policy makers, and funders to translate these or other ideas into a coherent initiative and implementation plan. A potential first step, as has been done by other scientific communities, like physics and astronomy, might be for volunteers or the Society for Neuroscience to establish a steering committee among active neuroscientists to define and flesh out the Grand Challenges Initiative. The core group might or might not include representatives of the critical funding agencies; both models have been used effectively by other

"The neurosciences are unquestionably among the most rapidly advancing and exciting fields of science, no matter how broadly construed."

fields. In addition, it will be extremely important to include colleagues from the patient advocacy community. Once refined, the Initiative can be submitted in partnership with the leaders in funding agencies to both Administration budgeters and Congressional appropriators.

***NQ:* What do you, as chair of the Forum and as CEO of AAAS, see as the biggest challenge for neuroscience in the coming decade? For science more broadly?**

The neurosciences are at a critical point where scientific knowledge is beginning to provide a much clearer glimpse into the underpinnings of who we are. Neuroscience has introduced new possibilities for understanding what makes us human — our minds, our selves. The ability to look into the brains of living, awake and behaving individuals and watch our minds in action is just one example of the new tools now available that could tell us a tremendous amount about our humanity and perceived individuality. This progress could be quite threatening to people's long-held values or beliefs about themselves. For that reason, scientific advances must be accompanied by consideration of the values, ethical and social issues that will inevitably arise and how to deal with them. We are in a position not dissimilar from where genetics and genomics were 20 years ago. These questions will be of great importance to many members of the general public, including particularly religious groups whose core concepts are more spiritual than grounded in biology. Much like the ELSI pre-Human Genome Project, it is critical for the field to be out in front of this potential conflict and begin a dialogue and develop a strategy for how to handle potential conflicts. I do think this is an area where the Society for Neuroscience could take the lead and help develop strategies to proactively engage the public in where our field is going. (Editor's Note: See Social Issues Round Table description on pg. 10)

***NQ:* Science education has been a personal passion for you for many years. We know the U.S. is falling behind other industrialized countries in science education and that many other countries do it much better. From a global perspective, what do you think needs to happen to better coordinate science and education policy?**

There really are two issues here. One is the question of the future science and engineering professional workforce. Frankly, I think that we in neuroscience are doing pretty well. Our field is among the most exciting in all of science, and we seem to be doing well in attracting young scientists. Our big problem in that regard will be in retaining young scientists, given the overall difficulties in funding, etc. But perhaps the economic stimulus package will help.

The other issue concerns the broader American labor force. The economy of the future clearly will be heavily science and technology based or at least related. We therefore must have a general labor force that is comfortable and familiar with science and technology and that won't be thrown off balance by new developments. That's where I think the United States falls far short. Science education directed at the full array of students (not just the "best and brightest") is, frankly, mediocre at best, and various international assessments show that the United States is way behind many other developed countries. Fixing this seems to be an almost intractable problem, given our very distributed system of education, where 16,000 independent school districts often act like independent countries. Solving this problem will require great public and political will, an increase in the general populations' belief in the value of science education for everyone's children, and a willingness to address the tough problems with education, like teachers' salaries. ■

. . . Bold and Visionary U.S. Science Funding, continued from page 1

Making the Case: Loud and Clear

This new GPA emphasis required new tools, and the committee tasked SfN staff with developing brief documents to explain the economic benefits of biomedical research. The resulting fact sheet arms science advocates with data about job creation, state economic impact, and potential reductions in economic burden of disease.

In early January, with an evident growing economic crisis, Congressional leaders and the President-Elect began drafting an historic economic recovery plan, focused on investing in projects and programs that would jumpstart America's economy, while also establishing a strong foundation to sustain it. To meet these goals, Congress introduced H.R. 1 — The American Recovery and Reinvestment Act of 2009.

SfN had prepared to call upon its members and didn't have to wait long. The Executive Committee authorized SfN to act in support of bold and visionary funding. Beginning in mid-January, SfN urged all U.S. members to contact Congress, and our members exhibited strong advocacy enthusiasm, sending nearly 19,000 letters from 6,000 members over six weeks to Congress and President Obama on behalf of research funding. This unprecedented grassroots advocacy effort was a crucial component of what eventually became an increasingly vocal, community-wide push: thousands of scientists, patients, and others sent a unified, loud, and clear message to American leaders that robust scientific investment is central to health and economic advances.

Congressional Briefing Focuses on Diversity in Science

As part of efforts to increase and enhance diversity in neuroscience, SfN cosponsored a March 12 briefing on Capitol Hill in Washington, DC, entitled *Building a Diverse Scientific Workforce: Collaboration for a Competitive and Healthy Nation*. Featuring Raynard Kington, National Institutes of Health Acting Director, and Wanda Ward, Acting Director for Education and Human Resources at the National Science Foundation, the briefing addressed the shrinking pipeline of talented individuals interested in science and technology and the need to ensure that future generations of scientists represent the nation's diverse population. More information on the briefing is available at www.cossa.org/diversity/diversity.html.

Members of Congress from every state heard from the uniquely credible and authoritative voices of scientists on why science funding must be included in the economic recovery bill.

Throughout, SfN's efforts were guided by the strong leadership of science champions, both in and out of Congress. Early on, SfN partner Research!America, an unmatched voice for medical research led by former Congressman John Porter, had urged a bold investment in science funding. SfN calibrated efforts in close coordination with Research!America. Sen. Arlen Specter (R-PA), an indefatigable champion for science, led the Capitol Hill charge calling for $10 billion for NIH, alongside fellow champion Sen. Tom Harkin (D-IA). SfN, Research!America, and others quickly heeded the senators' message and were among the first to urge their memberships to contact lawmakers in support. Soon, other advocates, coalitions, and allies joined the call and began the broad-based push. The hard work paid off and became a monumental achievement for basics, translational, and clinical research.

"We are committed to ensuring that ARRA funds will produce benefits to the economy, to scientific knowledge, and ultimately aid in improving the health of the nation."

— Raynard Kington, Acting Director, National Institutes of Health, before a House Appropriations Subcommittee, March 26, 2009

Stimulus Dollars: NIH Says "Not Business as Usual"

NIH and the scientific community already are identifying high quality research opportunities that will meet the new law's aggressive goals and timelines. NIH leadership has also put a premium on communicating with the science community about funding mechanisms as well as report-

ing expectations, something SfN President Tom Carew encouraged in a February 12 meeting with NIH Acting Director Raynard Kington. Once the funds are released, the Obama Administration has made it clear that all recipients, including the scientific community, will be called upon to demonstrate how the funding supported economic recovery and created jobs. The NIH and NSF also quickly responded to the President's call for transparency throughout the implementation process by posting information related to the distribution of these funds on their Web sites at www.nih.gov/recovery and www.nsf.gov/recovery. Information is updated on a central SfN page at www.sfn.org/recovery.

Looking Ahead: Building the Case for Sustained, Bold Science Funding

Many have cautioned, however, that this influx of funding cannot be confused with the necessary long-term campaign to re-establish robust, predictable, and sustainable increases for NIH and NSF. As stated by Tom Carew following passage of the bill, this investment is just the "first step to reprioritizing and stabilizing U.S. science funding and policy after years of neglect and flat funding." (See President's Message, this issue.)

Although the additional NIH and NSF funds will begin to restore science to its rightful place — a goal expressed in the President's inaugural address — significant and steady increases are the best long-term strategy to ensure global science leadership, better health, and economic strength. Research advocates must use the momentum from the economic stimulus package to translate this success into continued increases in science funding. As legislators begin to set their budget priorities for FY2010 and the years beyond, they must hear from scientists on the importance of strong and stable biomedical research funding. SfN strongly urges all U.S. members to engage in long-term advocacy efforts, and help the national economy recover by doing what neuroscientists do best: explore and discover. ■

SfN To Connect Neuroscience Research, Educational Practice

The study of learning, memory, and perception are converging to unite education and neuroscience around the "science of education" and the emerging field of "neuroeducation." This year, SfN is helping to contribute to this dialogue, ensuring scientists and education practitioners work together to develop strategies and tools with the potential to ultimately improve education.

Why now? While there has been a plethora of scientific findings of educational relevance (such as plasticity, imitation, executive function and the role of factors such as sleep, stress and nutrition), few studies have emerged from interdisciplinary programs aimed at informing education in an integrated way. Rigorous applications of these findings to the practice of education have been relatively slow to emerge.

"Collaborative research between neuroscience and education is a promising field," states SfN President Tom Carew. "There is an expanding landscape of discoveries and tools that are contributing to understanding the ways in which children and adults learn. At the same time, the education profession is eager to embrace neural and cognitive sciences and to actively inform the future agenda of brain research."

Work in this area is already underway. Recently, at the annual convention of the National Science Teachers Association in New Orleans, Carew addressed the thousands of educators present as he delivered a 'Shell Science Seminar' entitled: "What Neuroscience Can Teach Us About Teaching." He underscored the importance of conversations between basic and applied researchers and how exciting progress in the field of neurobiology of learning and memory may inform the work of teachers and the role they can play in shaping the direction of future research. SfN also sponsored two workshops for teachers on related topics of brain research applications to the classroom.

This June, SfN will host a "Neuroscience Research in Education Summit" to lay a foundation for ongoing dialogue. This special presidential initiative will convene at the University of California, Irvine, a small group of leaders from the education and science communities to consider such questions as "What do teachers want and need to know about how students think and learn, and how can teachers' questions drive neuroscience research?" Summit results will form the basis for a white paper for dissemination to the broader neuroscience and education communities and other stakeholders in the fall of 2009. ■

Neuroscience 2009 Preview

NEUROSCIENCE 2009

The 39th Annual Meeting of the Society for Neuroscience will be held October 17-21 in Chicago, IL. Scientists from across the globe will gather at the McCormick Place Campus to present and discuss the latest developments in neuroscience research.

Dialogues between Neuroscience and Society

The Dialogues between Neuroscience and Society presentation will explore the neuroscience of attention, memory, and perception featuring internationally known magicians and escape artists, James Randi, Apollo Robbins, and Eric Mead. Randi, best known as "The Amazing Randi," challenges paranormal and pseudoscientific claims. He was named a Fellow of the John D. and Catherine T. MacArthur Foundation in 1986. For more than 17 years, Robbins has mastered sleight-of-hand illusions, pick pocketing, and con-artistry to entertain a variety of audiences. Mead covers a wide range of magic and mentalism that blends the notion of what is real and unreal to create the illusion of mind reading.

Pre-Conference Workshops

Pre-conference events enable you to take advantage of available learning opportunities even before the conference officially begins. Register early, as space is limited.

Short Courses: The Society will offer three short courses covering Epigenetic Control and Neuronal Function, Rhythms of the Neocortex, and New Frontiers in Live Cell Imaging. Each daylong course consists of lectures presented by faculty and afternoon breakout sessions. A reception will be held in conjunction with the Neurobiology of Disease Workshop. Course fees include a syllabus booklet, breakfast, lunch, and the reception. Preregistration for short courses is required.

Neurobiology of Disease Workshop

The Neurobiology of Depression

This workshop, co-organized by Helen Mayberg, NARSAD Distinguished Investigator known for depression and deep brain stimulation research, and Tom Insel, Director of the National Institute of Mental Health, includes morning lectures and afternoon breakout sessions. A closing reception will allow faculty and students to informally interact and further discuss remaining questions. Breakfast, lunch, and the reception are included in registration. Preregistration is required.

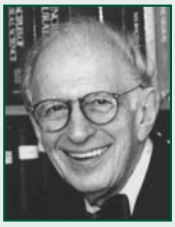
Meet-the-Expert Series and Professional Development Workshops

Other professional development opportunities will include the Meet-the-Expert Series and the Professional Development Workshops. The Meet-the-Expert Series has been expanded for 2009 to include an additional two sessions. Experts will speak on a wide range of topics including cognitive neuroscience and animal models of addiction. There will also be seven professional development workshops that cover such areas as "Surviving as a Junior Faculty" and "Teaching Neuroscience Using Case Studies." All Meet-the-Expert Series and professional development workshops are included in the registration fee, and no additional registration is required.

Beyond the Scientific Program

In addition to the plentiful learning opportunities, Neuroscience 2009

The 2009 Presidential Special Lectures will focus on the evolution of the changing brain in a changing world.



Erik Kandel of Columbia University will speak about molecular mechanisms in the changing brain.

Elizabeth Spelke of Harvard University will discuss mapping the cognitive world of a changing infant as it grows and develops.

Richard Morris of the University of Edinburgh will explore learning and memory at a systems level.

Nora Volkow of the National Institute on Drug Abuse will discuss addiction, the brain in a normal world, and when it goes awry.

Featured Lectures

- **Albert and Ellen Grass Lecture**
  Bob Wurtz, National Institutes of Health-National Eye Institute
- **Fred Kavli Distinguished International Neuroscientist Lecture**
  Daniel Wolpert, University of Cambridge, United Kingdom
- **David Kopf Lecture on Neuroethics**
  Steven Laureys, University of Liege, Belgium
- **History of Neuroscience Lecture**
  Larry Swanson, University of Southern California
- **Peter and Patricia Gruber Lecture**
  To Be Announced

will include events that highlight the intersection of science and society. Given a challenging external environment — from the economic crisis to increasing animal rights extremism — related events offer scientists a chance to see how their work fits into a national and international social context.

Public Advocacy Forum — Science and the Economy: Making the Case for Investing in Research

How does science contribute to the economy? The question is more pressing than ever given a global economic downturn, and policymakers are returning to an era that sees investment in science as a key economic stimulus. The 2009 Public Advocacy Forum will feature a panel-style discussion with a research university leader, business sector leader, and health economist to discuss how national and local economies benefit from strong, predictable, and sustainable funding for research. The event builds on the standing room only, 500+ crowd that attended the 2008 Public Advocacy Forum to discuss the impact of the presidential and congressional elections on science funding. Speakers at the event agreed that unprecedented challenges facing the Obama administration and Congress heighten the need for the science community to explain the benefits of a strong investment in science for the U.S. economy and the nation's health.

Animals in Research Workshop — Widening the Tent: Building Support, Creating New Allies for Animal Research

The Animals in Research Workshop will discuss approaches in promoting responsible animal research across the globe. Given growing violent threats to animal research, SfN and the biomedical research community will explore ways to "widen the tent" of supporters by developing new allies to promote responsible animal research. This workshop will focus on the active engagement of patient groups, health care providers, industry, and others who have a key interest in building support. The workshop will last two hours and feature an interactive panel Q&A session. Separate registration is requested for this event.

Brain Awareness Campaign Event

Are you an experienced neuroscience educator or just thinking about getting involved? The Annual Brain Awareness Campaign event offers tools and resources for everyone. Brain Awareness Week (BAW) is one of the most visible public education outreach efforts undertaken by neuroscientists worldwide that offers educational activities to local communities. The Annual Brain Awareness Campaign Event includes a special presentation by SfN President Tom Carew as well as a reception and poster session to celebrate accomplishments of neuroscience education and the public. Both new and experienced Brain Awareness participants are encouraged to attend the event.

Meeting attendees enjoy the unique opportunity to interact with leading experts.

. . . Neuroscience 2009 Preview, continued from page 9

Chapter Workshop

Local chapters offer an increasingly dynamic way for SfN members to network with colleagues and get involved in the Society. At our third annual Chapter Workshop, attendees will be provided with information on how to form and maintain an SfN chapter as well as how to develop successful educational outreach activities. Improving chapter communication using social networking and developing effective fundraising strategies will be given special emphasis this year.

Organized by the Membership & Chapters Committee, the workshop will include presentations from guest speakers and small group discussions on specific themes, including:

- Using social networking to enhance chapter activities and communication
- State-of-the-art technologies to enhance local chapter events
- Keeping your chapter active during challenging economic times

Web site design and presentation of Web site templates will be included in the discussion with an emphasis on "how-to" presentations. Participants will also have an opportunity to interact with fellow chapter representatives, share success stories, and discuss concerns with SfN leadership. Lunch will be provided. Separate registration is required to attend this event.

Chicago on a Budget

Chicago provides visitors with an urban array of adventures, countless cuisine choices, and numerous science and art museums. Learn more: www.choosechicago.com

***New* — Roommate Matching Forum Open to All Attendees — Save money at Neuroscience 2009 by finding a roommate.** Use SfN's online forum to help locate and correspond with other attendees interested in saving money by sharing a hotel room. In 2009, we are expanding this service, making it available to all annual meeting attendees. More information will be available in June at www.sfn.org/am2009

Registration Discounts: Renew your membership for 2009 and enjoy reduced member registration pricing in Chicago. Advance member registration opens July 14 and advance nonmember registration opens July 21.

Reduced Airfare: Special meeting fares have been negotiated for Neuroscience 2009 and are available for air and car rental.

Public Transportation: Use complimentary SfN shuttles to travel between the convention center and most SfN-contracted hotels. The Chicago Transit Authority Blue and Orange Line is fast and convenient for travel to/from the airports.

Free Museums: Several world-class Chicago museums offer limited free admission. The Museum of Contemporary Art offers free admission on Tuesdays and the Art Institute of Chicago offers free admission on Thursdays and Fridays from 5 p.m. until 9 p.m. Also, the Field Museum will offer a $2 discount off the general admission fee from October 17-21.

A Celebration of Women in Neuroscience

The Committee on Women in Neuroscience will host its fourth annual luncheon in Chicago to honor the accomplishments of women neuroscientists. Registration is free, but required to attend.

Social Issues Roundtable:

Engaging the Public on Ethical, Legal, and Social Implications of Neuroscience Research

This roundtable, chaired by Alan Leshner, CEO of AAAS, Executive Publisher of *Science*, and former director of NIDA (See Q&A this issue p. 4) will explore how:

New insights into the nature of the brain and mind can have great implications for such concepts as the self, soul, free will, or what it means to be human. Some of those implications are already causing discomfort in segments of the public, including some religious groups. This session discusses both the nature of those issues, and ways the scientific community can best engage the public to find common ground. This offers a chance to minimize potential tensions between the field and society while maximizing opportunity for progress. ■

Stay Up To Date on Neuroscience 2009
www.sfn.org/am2009

Neuroscience Information Framework Increases Online Access to Neuroscience Resources

Since 2004, SfN has played a key role in helping to facilitate the development and distribution of neuroinformatics tools and resources. This work includes helping to guide the development and release of a new portal from the Neuroscience Information Framework (NIF), a project of the National Institutes of Health Blueprint for Neuroscience Research. This spring, NIF has a new release with function improvements and additional resources. Maryann Martone, SfN Neuroinformatics Committee Chair and Primary Investigator on the NIF project, provides an update.

From its inception, neuroscience has been a richly diverse and interdisciplinary science, a tradition that continues unabated in the 21st century. The SfN annual meeting is but one example — a testament to the vibrancy and range of neuroscience endeavors, spanning multiple scales and modalities, and reflecting the complexity of the systems that it seeks to unravel. The annual meeting is also a testament to how difficult it is for neuroscientists to keep up with the barrage of information that accrues daily.

Neuroscience, like all of science, has seen the impact of the digital revolution in providing new venues for publishing information, as well as acquiring and exchanging data. Many online databases and other neuroinformatics resources established over the past decade provide powerful and readily accessible tools and data that are starting to deliver new insights into the brain and facilitate new hypotheses about its organization.

There is a tremendous need for informatics tools that provide neuroscientists with efficient ways to access and utilize the avalanche of information. Recognizing this need, the Society established the Neuroinformatics Committee in 2004. Its charge is to facilitate awareness of neuroinformatics resources, promote data sharing and help the field of neuroscience adapt, exploit, and contribute to progress in neuroinformatics. One of its early accomplishments was to launch the Neuroscience Database Gateway (NDG), a Web-based catalog of neuroscience resources and databases, information, materials, and tools. The NDG, launched in 2004, is available from SfN's Web site homepage.

In 2005, the National Institutes of Health Blueprint for Neuroscience Research funded the NIF consortium, which includes members of the Neuroinformatics Committee. The NIF portal builds upon the NDG and entails creation of a dynamic Web-based portal that helps neuroscientists access data, tools, and information. It is much more than a simple registry of resources, as it includes a customized Web index built for neuroscience, a set of neuroscience databases that can be directly queried through NIF, and a rich literature archive providing full text indexing and literature mining tools.

Underlying the NIF system is a comprehensive vocabulary for describing and searching neuroscience resources that allows researchers to perform "concept-based searches." The current vocabulary covers the major domains of neuroscience: anatomy, cells, molecules, function, disease, subcellular structure, and techniques. The NIF project has established the NeuroLex wiki (http://neurolex.org), an online wiki-based lexicon of neuroscience concepts, to provide an easy-to-use medium for neuroscientists to comment on and contribute to the NIF vocabularies. See page 14 to learn about SfN's Wiki Initiative.

The NIF portal, built by and for neuroscientists, is looking for Society members and other interested parties to help test and refine its content, look and feel, and functionality. All neuroscientists are encouraged to use the NIF, and see how online search engines and other community tools can enhance their existing research and provide new avenues for exploration. Neuroscientists who are creating databases, software tools, or other resources relevant for neuroscience are encouraged to make their resources available through the NIF, taking advantage of NIF's vocabularies and data federation tools to integrate their resources into the framework.

The next major release of NIF will be in April 2009. The new release will have more content, improved search functions and new features for organizing and understanding results. Please visit the NIF (http://neuinfo.org) and use the feedback option to let the team know what you think. More information about the NIF can be found in a special open access issue of *Neuroinformatics*. ■

Neuroinformatics Resources

NIF & NIH Sites
www.neuinfo.org
www.nif.nih.gov
http://neuroscienceblueprint.nih.gov

SfN Sites
Neuroscience Database Gateway:
www.ndg.sfn.org

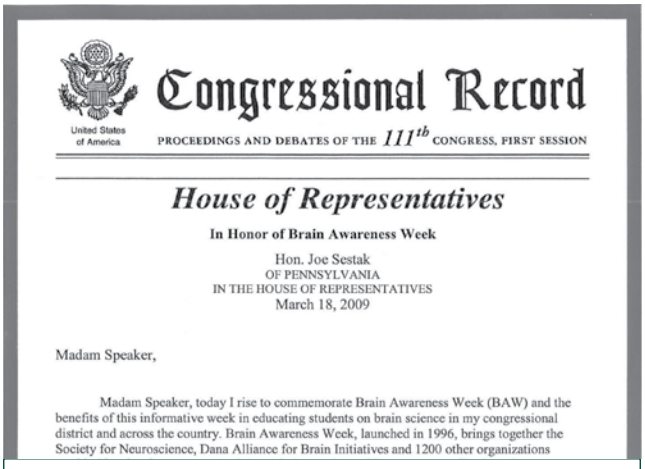
SfN Neuroinformatics Committee
www.sfn.org/NIC

Other Resources
International Neuroinformatics Coordinating Facility
http://incf.org/

Brain Awareness Week 2009

Neuroscientists from around the world joined together to promote the 14th annual Brain Awareness Week (BAW) Campaign, March 16-22, with events that raised public knowledge, engagement, and excitement about the brain. Events included hands-on activities, public lectures and forums, classroom visits, and more. The BAW Campaign, carried out with the Dana Alliance for Brain Initiatives (DABI), encourages engagement in public education outreach activities. BAW began in 1996 as a modest effort involving 160 U.S. organizations and has grown into a powerful international initiative with more than 2,200 partners in 76 countries.

Washington, DC kicked off BAW 2009 with official greetings from Mayor Adrian Fenty honoring Brain Awareness Week in the Greater Washington area. The Mayor's letter was delivered to the National Museum of Health and Medicine during their 10th annual BAW event, which drew over 750 local students throughout the week.



Congressional Record

United States of America

PROCEEDINGS AND DEBATES OF THE 111th CONGRESS, FIRST SESSION

House of Representatives

In Honor of Brain Awareness Week

Hon. Joe Sestak
OF PENNSYLVANIA
IN THE HOUSE OF REPRESENTATIVES
March 18, 2009

Madam Speaker,

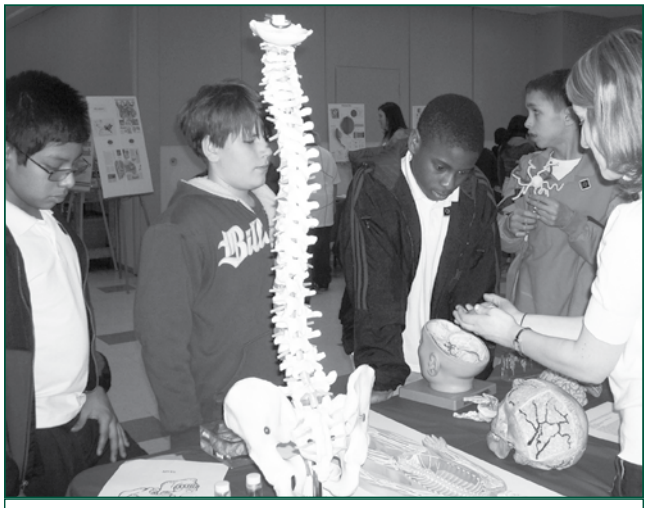
Madam Speaker, today I rise to commemorate Brain Awareness Week (BAW) and the benefits of this informative week in educating students on brain science in my congressional district and across the country. Brain Awareness Week, launched in 1996, brings together the Society for Neuroscience, Dana Alliance for Brain Initiatives and 1200 other organizations

Rep. Joe Sestak, 7th District of Pennsylvania, made a floor speech in the U.S. House of Representatives commemorating Brain Awareness Week. An official statement also was inserted into the *Congressional Record*.

During BAW 2009, Rep. Joe Sestak of the 7th District of Pennsylvania made a floor speech at the House of Representatives commemorating BAW as a premier youth educational effort to raise public awareness about brain science. The floor statement highlighted laboratory tours, museum exhibits and classroom discussions led by neuroscientists nationwide that excited K-12 youth about the wonders of the human brain during BAW. Sestak also spoke about the importance of continuing basic and clinical research for those affected by Traumatic Brain Inquiry. The joint BAW and TBI statement was included in the *Congressional Record*.

SfN Chapters Lead BAW Events Worldwide

SfN chapters, such as Philadelphia, St. Louis, Ile-Ife, Nigeria, and British Columbia provide the opportunity to fuse neuroscience outreach and professional development for neuroscientists worldwide.



The Philadelphia chapter engages local students with various brain models.

Philadelphia Chapter

The Philadelphia chapter celebrated BAW by hosting a two-day interactive Brain Fair at the Franklin Institute Science Museum from March 19 to 20. With support from SfN's Chapter Grant Program, more than 1,000 attendees were engaged in activities highlighting the five senses, brain structure, helmet safety, and Benjamin Franklin as a neuroscientist. Popular activities included a "Swim Cap" station, where students traced and colored the lobes of the brain as well as a "Brain Bar," where visitors interacted with healthy and pathological brain specimens.

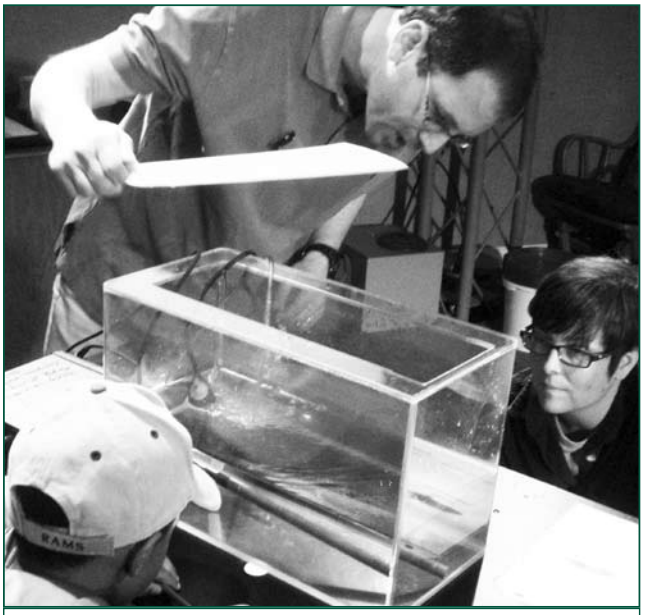
The Philadelphia chapter continues to further SfN's mission through BAW efforts, not only by providing young neuroscientists with outreach opportunities, but also by giving volunteers a chance to network with student and faculty volunteers in the Greater Philadelphia area. The Philadelphia chapter officers and student members have a particular passion for educational outreach. Said Sara Ward, chapter member and BAW coordinator, BAW presents the "perfect opportunity to give back to the community and offer access to information about the brain and the importance of keeping it healthy, it's truly a win-win for everyone involved."

St. Louis Chapter

The St. Louis chapter celebrated BAW on March 7 by inviting students in grades 4-12 to a NeuroDay: Brain Science Expo at the St. Louis Science Center. Members of the St. Louis chapter coordinated demonstrations, talks, and

hands-on activities for approximately 100 neuroscientists and 3,000 visitors! NeuroDay 2009 provided high school students with the opportunity to learn about local summer research programs, as well as various neuroscience disciplines.

The St. Louis chapter promotes brain awareness throughout the year with a variety of educational events for young adults. The chapter's semiannual Teen Brain Workshop invites high school students and parents to an interactive evening of presentations, discussions and activities related to adolescent mental health. The chapter also sponsors SciFest, an interactive exhibit run by eight graduate students that translates research into a reality show for the public. SciFest is a great opportunity for young neuroscientists to learn how to talk to the public about "their science."



St. Louis chapter Representative Erik Herzog explains the "Buzz About Electric Fish" by recording the electric organ discharge of weakly electric fish to show electric navigation, communication and how the nervous system encodes the sensory world. Signals were played over speakers so participants could hear the fish's discharge rate change.

Ile-Ife, Nigeria Chapter

The newly formed Ile-Ife, Nigeria chapter (SfN's first African chapter) immersed itself in BAW 2009 by coordinating K-12 lectures and activities that explored brain health and the functions of the brain. Several supplemental activities related to brain function excited elementary and high school students about the field of neuroscience. A quiz and debate competition held on the "biology of brain" involved three post-primary schools. The Ile-Ife chapter BAW events were covered by the Nigerian National Television Authority and broadcasted on March 23. Chapter members also coordinated classroom visits to encourage young neuroscientists to reach out and discuss their research. The Ile-Ife, Nigeria chapter continues to organize debate and quiz competitions throughout the year to support public brain awareness.

A local primary school student participates in the Ile-Ife, Nigeria chapter "Biology of the Brain" quiz and debate.

British Columbia Chapter

The British Columbia chapter and Let's Talk Science Partnership Program partnered to celebrate BAW with K-12 classroom visits. Throughout the month of March, chapter graduate students visited classrooms and introduced youth to neurobiology, brain functions, and brain disease. Each graduate student was paired with an experienced University of British Columbia instructor that guided and supported the implementation of classroom activities. With continued popularity of the British Columbia BAW outreach from graduate students, K-12 teachers, and their students, the chapter hopes to continue this highly enriching activity for all involved, throughout the year. ■

Mark Your Calendar for BAW 2010!

March 15-21, 2010

Visit www.sfn.org/baw for details

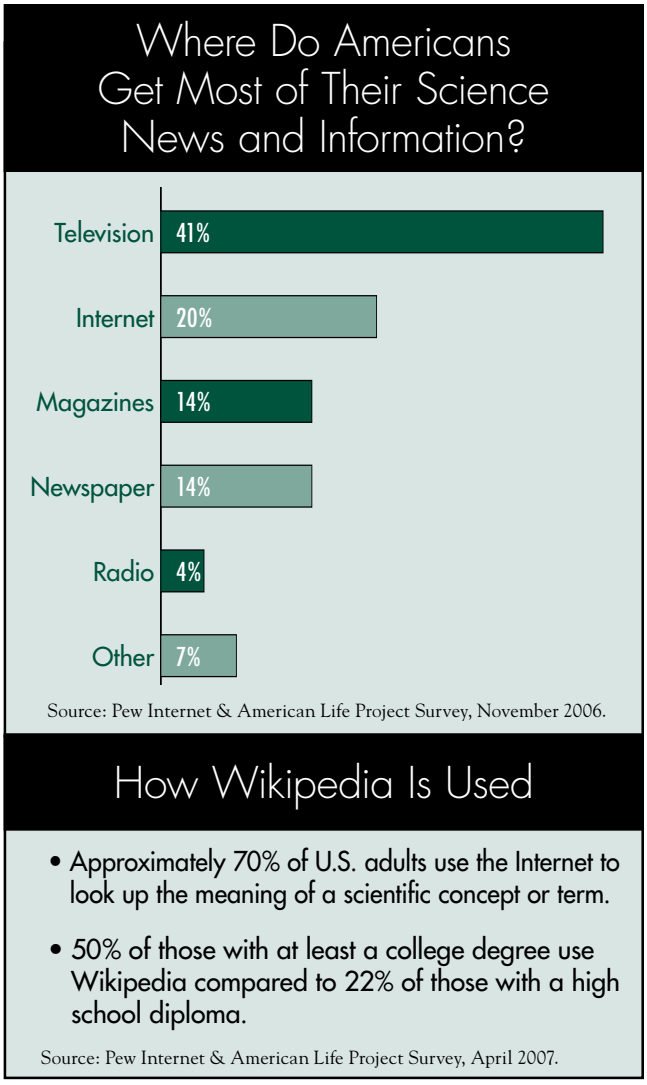
SfN Announces Wikipedia Neuroscience Initiative

Since its creation in January 2001, Wikipedia has grown into one of the largest reference Web sites in the world, with over 2,750,000 English-language entries on a vast array of subject areas — including neuroscience. To further its mission of promoting public education about neuroscience, SfN has just launched an initiative to engage its members in improving and expanding the neuroscience-related content on Wikipedia. Members will receive a letter from SfN President Tom Carew seeking their active participation. "SfN is calling upon members to improve and expand the neuroscience resources on Wikipedia by contributing and editing content related to your area of expertise," said Carew. "This creates an opportunity for all of us to share our knowledge with the broader community, build neuroscience literacy, and create a climate of more robust support for scientific research."

> *"This creates an opportunity for all of us to share our knowledge with the broader community, build neuroscience literacy, and create a climate of more robust support for scientific research."*
>
> — Thomas J. Carew, SfN President

Initially conceived by Past President Eve Marder, the effort also reflects a broader public outreach strategy that seeks to create a climate of more robust support for scientific research. "Wikipedia is a hugely popular and powerful tool that, in principle, provides authoritative information about any topic for anyone on this planet," said Marder. "This should be seen as a natural opportunity for scientists, as we have an obligation to share our knowledge with everyone — including taxpayers around the world who have, by and large, paid for our research."

Striving to become a comprehensive, online, multilingual encyclopedia, Wikipedia is currently a collaboration of more than 75,000 active contributors who volunteer to develop and continuously improve articles on topics with which they are familiar. It is currently the number one external site visited after users conduct a Google search and has become a significant source of free online science knowledge. After reviewing the landscape of existing online resources, SfN's Public Education and Communication Committee (PECC) concluded that working to improve the quality of neuroscience content on Wikipedia would be the most effective avenue to explore since, compared to other major online resources that exist or are under development (e.g., Scholarpedia, Medpedia, and the Neuroscience Wikia), Wikipedia is written for a general audience (not exclusively for academics and researchers) and it has a substantially wider reach.



SfN has chosen to focus its effort on the Wikipedia main Neuroscience page (http://en.wikipedia.org/wiki/Neuroscience). While there are additional sections and specialty projects dedicated to neuroscience content, PECC has chosen the main page, a major point of entry for many Wikipedia users, as a starting point.

SfN is seeking the support of its members to volunteer as contributors and facilitators to begin improving this content.

SfN has developed guidelines for contributors and facilitators. These provide basic information about how to most

effectively register and work with the Wikipedia site as well as links to resources that should help guide the process of developing new articles and using consistent terminology. To support this latter goal, SfN is encouraging members to take advantage of the NeuroLex resource that has been developed by the NIH-funded Neuroscience Information Framework (NIF) project [www.neuinfo.org]. NeuroLex is "a comprehensive collection of common neuroscience domain terminologies," which can serve as a useful guide as volunteer content facilitators and contributors begin looking at the way content is structured on the Wikipedia Neuroscience pages. The NeuroLex has started its own Wiki: http://neurolex.org to help with the process of expanding and tuning its terminology resources. One of the goals is to cross-reference and cross-fertilize NeuroLex with Wikipedia. See page 11 for Neuroscience Information Framework article.

Over the coming months, SfN will assess the impact its members are having on the overall neuroscience-related content on Wikipedia, and explore a second phase through which it could engage undergraduate and graduate neuroscience programs to formally involve students in developing Wikipedia content. It has become a growing trend for university professors to assign students projects involving developing articles for Wikipedia. For example, senior neuroscience students at the University of Lethbridge in Alberta, Canada, are required to revise articles in the area of drugs and behavior as part of their coursework. (A complete list of current and past Wikipedia school and university projects can be found at http://en.wikipedia.org/wiki/Schools_and_universities_project.)

In thinking about a Wikipedia project, Marder noted that the project leverages a key SfN strength: the growing number of younger SfN members. "Graduate students, postdocs, and beginning faculty are already using many emerging social communications tools and are very interested in public outreach. We hope to enlist thousands of young scientists in this effort, leveraging grassroots power in the science community to advance global science knowledge." ■

Call To Action:
SfN's Wiki Initiative Needs Your Expertise!

- Read about the SfN Wikipedia Neuroscience Initiative: www.sfn.org/Wikipedia
- Browse the main neuroscience Wikipedia page: http://en.wikipedia.org/wiki/neuroscience
- Identify target articles, particularly those covering fundamental concepts and ideas
- Improve and enhance Wiki articles—contribute new content
- Offer feedback and suggestions or contact an SfN content facilitator for guidance
- Involve students: Wikipedia School and University Projects: http://en.wikipedia.org/wiki/Schools_and_universities_project

NEUROSCIENCE QUARTERLY

Published quarterly by the Society for Neuroscience

Circulation: 39,000

Neuroscience Quarterly is printed on New Leaf Reincarnation Matte made from 50% recycled fiber and 30% 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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Contribute to the Neuroscience 2009 Scientific Program

Abstract submission opens April 23

Abstract submission for Neuroscience 2009 **opens April 23 and closes May 14**. Only SfN members in good standing (paid through December 2009) are eligible to sponsor abstracts.

New in 2009: Nanosymposia

Collaborate with other abstract submitters who share your topical area of interest and enter your own slide-based presentation as a nanosymposium. This new and exciting abstract submission category encourages a collaborative approach to the development of scientific presentations. Start contacting your colleagues now. Abstract submission opens April 23.

www.sfn.org/abstracts