

# NEUROSCIENCE

WINTER 2004

Q U A R T E R L Y

*"New advances in genetics and in imaging of the brain are likely to lead to unimaginable new benefits in health care in the coming years, and I intend to do all I can in Congress to see that this research has the full support it needs."*

— Senator Edward Kennedy

## Kennedy Receives SfN Award; Lauds Neuroscience Research

Sen. Edward Kennedy (D-Mass.) accepted the Society's 2003 Public Service Award in December from SfN President Anne Young. The awards ceremony was held at the John F. Kennedy Library in Boston. Young noted that the award was given "in recognition of the Senator's leadership in Congress supporting biomedical research funding, mental health parity, therapeutic cloning, and other efforts to improve the lives of Americans by increasing access to health care."



SfN President Anne Young and Sen. Kennedy

Kennedy thanked the Society and said, "In this new century of the life sciences, no branch of medical research has greater potential than neuroscience. Learning more about the brain and the nervous system is one of the great frontiers of science today, and all of us who care about the issue respect the Society for its leadership in the field."

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## Message from the President

### A "Call to Arms" For Federal Biomedical Research Funding

With the approval of the Bush administration's 2004 budget, the National Institutes of Health (NIH) ended its five-year run of 14 to 15 percent annual funding growth. During this period, NIH's total funding grew from \$13.6 billion in 1998 to \$27.2 billion in 2003. The administration has stated that future budgets are projected to include only 2 to 3 percent increases. This will have a powerful impact not only on grantees but on the millions of Americans who are counting on the NIH to deliver new treatments for the bedside.

What's more, the evolution of the NIH's mission to include a special focus on bioterrorism has exacerbated the funding crunch, forcing patient advocates for research on specific diseases to fight even harder for support. Under President Bush's plan to fund the NIH at \$27.9 billion, for example, the number of nonbioterrorism research grants awarded by the NIH next year will drop. Such a decline has happened only once since 1989.

The proposed 2 to 3 percent increases for 2004 and 2005 cut by three-quarters the steady 7.5 to 8 percent growth rate the agency had enjoyed before the five-year effort. And the 4 percent annual "cost-of-doing-research" increases already promised for ongoing grants are to be scaled back to 1 percent per year. (Please see Q&A with John Marburger, the president's science adviser, on page 8.)

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## Message from the President



Anne Young,  
SfN President

At no time in recent memory has the outlook been as grim or the need as great for neuroscientists to act as a group and as individual citizen-scientists. We must urgently write our elected officials. We must visit them in their home offices. We must invite them and the public into our labs. All in a crash effort to make the best case possible for continued increases for federally funded biomedical research.

For most NIH institutes, the final 2004 budget passed in January does not provide for an increase equal to inflation. This means only a “steady state” level of funding. If someone gets a new grant, someone else has to lose one.

While I believe that the Bush administration sincerely wants to see improvements in human health, the current direction of funding policy is based on a fundamental misreading of the importance of biomedical research and how research progress happens. Advances occur over long periods of time with continuous, dedicated effort.

In this new funding environment, groups such as the Society for Neuroscience (SfN) must be engaged earlier in the budget process, fight harder for available research dollars, and use a variety of tactics to ensure sufficient funding for biomedical research. We must counter the perception that the biomedical research enterprise has “been taken care of.”

We will need SfN members’ time and talent, and coalitions with other organizations, to come together as never before to advocate for increased funding for agencies including the NIH, National Science Foundation, Department of Energy, and others. In short, this “call to arms” requires enlisting the support of every organization with a stake in the biomedical research enterprise – from patients and their advocates to investigators and their research institutions.

The health community has already united in support of an 8 to 10 percent increase for NIH in Fiscal Year 2005. Some 600 health and disease advocacy organizations, including SfN, signed a letter delivered to the President in mid-November urging him to endorse this level of funding. But we as a society of scientists and you as individuals have a daunting challenge during the next few years. When analyzing our position, the word “alarm” may not be strong enough.

Neurological and psychiatric disorders alone affect more than 90 million Americans at total costs exceeding \$550 billion annually. If the entire NIH budget was spent on brain disease it would cost the government a mere \$300 for every person with a brain disorder.

Surely, the nation’s investment in efforts to understand and treat these disorders should be a top priority. From an economic point of view, benefits in terms of jobs created and the boost to the nation’s pharmaceutical, biotech, and related industries are other powerful arguments for continued increased biomedical funding.

A 2000 report from the Senate’s Joint Economic Committee notes that the federal government, mainly through NIH, funds about 36 percent of all U.S. medical research. “Publicly funded research in general generates high rates of return to the economy, averaging 25 to 40 percent a year,” it says. The report goes on to cite a study showing that “spending an additional \$15 billion on research and development would save lives whose economic value was conservatively measured at about \$27 billion, thus suggesting a high rate of return.”

*“The Society for Neuroscience (SfN)  
must be engaged earlier in the budget  
process, and fight harder for available  
research dollars.”*

—Anne Young

Given the millions with disease who can be helped and the positive economic contributions to the nation created by the biomedical research enterprise, we cannot sit idly by and wait for the prevailing attitude to change in Washington. We must act now.

**SfN’S INITIATIVES TO SUPPORT RESEARCH FUNDING**  
We must act to educate the nation about the importance of continued increases for the NIH and other funding agencies. SfN has developed a more assertive and aggressive plan to inform Congress and the public about the benefits and promise of neuroscience research. The SfN Council approved several initiatives in November and agreed to continue and strengthen several ongoing activities.

Starting in 2004, the Society will forge a new partnership with the Federation of American Societies for Experimental Biology (FASEB) and the Campaign for Medical Research (CMR) to reach key policymakers on Capitol Hill; continue to work with the Joint Steering Committee for Public Policy (JSC), a coalition of scientific organizations concerned about public policy issues; and help strengthen a coalition of brain-related societies and patient advocacy organizations. We will continue to send legislative alerts on funding and other issues urging letters to Congress, send letters from the SfN leadership to Congress

and the administration, and meet with key legislators on Capitol Hill.

We also will continue to work with the National Association for Biomedical Research on issues related to the responsible use of animals in research.

*Brain Research Success Stories*, a new publication series, will debut this year and be used in our advocacy efforts on Capitol Hill. These two-page newsletters explain what good for patients has come from the recent NIH doubling and what further gains can be made with sufficient future funding. The first of 12 topics include stroke, Parkinson's disease, posttraumatic stress disorder, and depression.

Scientific coalitions are a fundamental part of getting the biomedical research community's word heard by players who determine funding for federal agencies. They set funding targets, track legislation, set strategy through conference calls, send letters, run newspaper advertisements, set up meetings at opportune times during the funding process, and write white papers on crucial issues.

### INFLUENCING PUBLIC POLICY

In response to an invitation from FASEB, the Council agreed that SfN should join the CMR. This group is one of a few influential advocates that had a major impact on ensuring the doubling of the NIH budget. It is now dedicated to keeping Congress focused on the need for increased funding for all biomedical research.

FASEB and SfN will provide essential funding to enable CMR to continue its leadership role. Both FASEB and SfN will have seats on CMR's board and be included in its day-to-day activities and weekly strategy phone calls.

The Society will continue and strengthen its relationship with the Joint Steering Committee for Public Policy (JSC), a coalition made up of the American Society for Cell Biology, the Genetics Society of America, and SfN, along with other leading scientists. It advocates for basic biomedical research funding and policy.

The Society is fortunate to have two former NIH institute directors serving as its representatives on the 16-member JSC board — Steven Hyman and Gerald Fischbach, a past president of SfN. The JSC board is chaired by former NIH Director Harold Varmus.

To strengthen relations with patient advocacy groups, the SfN Council approved active leadership in the American Brain Coalition, an organization of about 30 groups concerned with brain-related disorders formed in 2001 under the auspices of the American Academy of Neurology.

Its activities include education, advocacy with legislators and policymakers, lobbying for increased funding for biomedical research, and communicating among members to use its

resources wisely. It makes good sense for SfN to play a role in this organization because neuroscience underlies all of the disorders the advocacy group members are eager to cure.

To coordinate all of the activities above, SfN has hired a new legislative advisory firm to raise our visibility on Capitol Hill and keep the pressure on the key players. In December, we hired Cavarocchi-Ruscio-Dennis (CRD) Associates, a leading advisory firm with much experience in advocating on behalf of biomedical research.

We look forward to working with CRD to develop strategies and concrete goals for 2004. This should help keep SfN ahead of the curve on policy issues with strategy advice early in the game, provide access to funding policymakers, and identify opportunities to leverage our influence at the right time for maximum impact.

### WHAT YOU NEED TO DO

While the Society leadership is moving to achieve a more prominent position in advocating for increased biomedical research funding, each of our members can act in their own communities.

SfN's *Guide to Public Advocacy*, available online at [www.sfn.org/guide](http://www.sfn.org/guide), is a blueprint for communicating the importance of biomedical and neuroscience research to elected officials, the press, and the public.

The *Guide* outlines methods that will enhance your ability to communicate with elected officials, the media, and the public through letter writing, phone calls, e-mails, faxes, and media resources. It also facilitates understanding of the basics of the legislative process and provides information that will enable you to take action.

The *Guide* also shows you how to contact public officials; write a letter; schedule a visit with a legislator; place a phone call; use the media; involve the public; have a personal plan of action; and use e-mail, faxes, and the Internet.

You also can use CapWiz ([www.sfn.org/legalert](http://www.sfn.org/legalert)), a Web-based legislative action center, to respond to legislative issues. Simply input your zip code, and sample letters to your specific senators and representative are generated and sent from your computer. Background on policymakers, their voting record, and campaign contributors are all available.

Brain Awareness Week, March 15-21, 2004, is an excellent opportunity to use these techniques, and to speak at schools, museums, hospitals, and other community organizations. Our Web site ([www.sfn.org/baw](http://www.sfn.org/baw)) contains useful advice on participating in media interviews, legislative outreach, conducting laboratory tours, and how to conduct classroom sessions.

The time to act is now. The biomedical research enterprise and the patients it can help have too much to lose if we wait. If we wisely use the tools available, we have much to gain. Your role as citizen-scientists has never been more important. ■

# Federal Budget Timeline and SfN member action

As you may know from legislative alerts and previous discussions of the budget, the House and Senate appropriations subcommittees of concern to SfN are the Labor, Health and Human Services Subcommittee (LHHS) and the Veterans Affairs, Housing and Urban Development Subcommittee (VA-HUD). The LHHS Subcommittee funds the National Institutes of Health (NIH). The VA-HUD Subcommittee funds the National Science Foundation (NSF) and Veterans Affairs (VA). Words in italics below indicate points in the process when the SfN leadership is likely to decide upon the timely use of strategic tactics to influence health research funding.

1. The federal budget process generally begins in February and ends, ideally, by September 30, when the fiscal year concludes. In February, the president, via the Office of Management and Budget (OMB), creates and submits his budget to Congress. *This juncture provides an opportunity for SfN to become engaged.*
2. The Congressional Budget Office (CBO), along with the House and Senate Budget Committees, submit reports on their respective budget outlooks to the Budget Committee. Each year, the budget resolution must be adopted by April 15.
3. The budget resolution sets forth budget aggregates and spending levels for each functional category of the budget and usually is ready between February and April. SfN is concerned with Function 550 for Health. The House and Senate Budget Committees hold hearings and receive opinions and estimates

from other committees before the budget resolution is marked up and reported. At times, the Budget Committees may discuss particular governmental programs while formulating the budget resolution. *This juncture provides an opportunity for SfN to become engaged.*

4. The House and Senate appropriations committees receive the final budget number, directed by the budget resolution, usually between April and June. The appropriations committees then subdivide the amounts they receive among their 13 subcommittees. As mentioned above, the LHHS and VA-HUD Appropriations Subcommittees are what interest SfN. *This juncture provides an opportunity for SfN to become engaged.*
5. The appropriations process begins with House and Senate subcommittees' markup of appropriations bills, which are then submitted to the full House and Senate appropriations committees for consideration, usually between June and October. Finally, the bills are sent to the floor for an official vote by the entire House and Senate. If differences in funding amounts exist between the House and Senate bills, a conference measure is necessary to resolve them. Once a conference report is finalized, the bill goes back to the full House and Senate to be voted on. *This juncture provides an opportunity for SfN to become engaged.*
6. Once the House and Senate agree, the bill is sent to the president. ■

## Budget Glossary

**Appropriations Bill** — A bill that gives authority to spend or obligate federal money.

**Budget Resolution** — Resolution passed by both houses encompassing the entire congressional budget; usually in trillions of dollars.

**Conferees** — Representatives from the House and Senate who serve on a conference committee.

**Conference Committee** — Temporary joint committee created to resolve differences between the chambers on a measure.

**Congressional Budget Office** — The Congress's budget office, which provides cost estimates of government spending.

**Fiscal Year (FY)** — October 1 through September 30. The fiscal year always starts three months ahead of the calendar year (e.g., fiscal year 2005 begins October 1, 2004).

**Function 550** — One of 13 budget functions included in the overall budget resolution, which pertains only to health.

**Labor, Health and Human Services (LHHS) Subcommittee** — Appropriations subcommittee that funds the National Institutes of Health.

**Office of Management and Budget (OMB)** — The President's budget office, which assists him in developing his budget and factors in his key priorities.

**Recess** — Period of time when one or both houses of Congress are not convened.

**Veterans Affairs, Housing and Urban Development (VA/HUD) Subcommittee** — Appropriations subcommittee that funds the Veterans Administration and the National Science Foundation.

# SfN Joins with Other Groups Advocating for Increased Funding for Biomedical Research

*The Society for Neuroscience is a member of several organizations concerned with important science issues, particularly increased support for biomedical research. Here is a brief overview of these organizations.*

## **Ad Hoc Group for Medical Research**

Supported by the Association of American Medical Colleges, this group advocates for increased funding for the National Institutes of Health (NIH) and has high visibility in Washington, D.C. It presents testimony on Capitol Hill each year, hosts breakfast briefings on health topics on the Hill, often sets the percentage increase for NIH that the biomedical community endorses, and engages Congress throughout the year through letter-writing campaigns by its grassroots membership on specific NIH funding issues.

## **Campaign for Medical Research (CMR)**

This organization was established in 1998 by philanthropist John Whitehead as a nonprofit organization dedicated to working with the executive and legislative branches to double the annual NIH budget by Fiscal Year 2003. Upon the successful completion of the doubling effort, CMR has worked to ensure that Congress does not shift its focus from medical research funding.

Over the past six years, the Campaign has conducted more than 350 meetings with top administration officials, senators, and congressmen. CMR has started each year by first meeting with the House and Senate Budget Committees, and then with the House and Senate Appropriations Committees. Its representatives meet regularly with the OMB director, key White House health advisers, key Senate and House appropriations committee chairs, and majority and minority leaders.

CMR works to ensure that the health community speaks with a single voice on NIH funding issues. It has coordinated a regular series of conference calls and policy breakfasts to bring health leaders together to discuss funding strategy.

The group is regarded as a key player in advocating for continued progress in medical research funding. CMR has been strongly supported by organizations such as the Federation of American Societies for Experimental Biology.

## **Joint Steering Committee for Public Policy (JSC)**

This is a coalition of three scientific societies — the American Society for Cell Biology, the Genetics Society of America, and the Society for Neuroscience — that advocate for basic biomedical research funding and policy. The total membership of these societies is about 57,000.

The JSC's goal is to assess government policy related to the conduct of research and to ensure that funding is provided in scientifically effective ways. A top priority is to obtain optimal

federal funding for basic biomedical and biological research, with emphasis on the NIH and the National Science Foundation.

Each participating society is invited to designate two voting members to the 16-member JSC board. The current chairman is Harold Varmus, president of Memorial Sloan-Kettering Hospital, and former NIH director. The current president and the executive director of each member society are invited to attend the twice-a-year board meetings as nonvoting members. The board also holds monthly conference calls.

JSC's congressional liaison committee operates: 1) an alert system urging scientists to relay their opinions on important issues to their representatives; 2) a personal visit program that encourages scientists to visit their representatives; and 3) a program urging scientists to submit opinion pieces to publications emphasizing the contributions of biomedical research to the local community. The JSC also develops position papers on issues such as indirect costs, untargeted research, economic contributions of biomedical research, and support of key appointments such as NIH director.

JSC was the primary organizer of the Congressional Biomedical Research Caucus, a nonpartisan group of representatives who provide an ongoing presence for biomedical research in Congress. The caucus advocates for biomedical research and hosts roughly 10 briefings annually by leading scientists who explain their research to members of Congress and their staff.

Among the JSC's urgent action items are letter campaigns in opposition to legislation that would ban cloning or nuclear cell transfer technology and to support stem cell research and the NIH Stem Cell Guidelines.

## **National Association for Biomedical Research (NABR)**

This organization is the only national, nonprofit group dedicated solely to advocating sound public policy that recognizes the vital role of humane animal use in biomedical research, higher education, and product safety testing. Founded in 1979, NABR provides the unified voice for the scientific community on legislative and regulatory matters affecting laboratory animal research. NABR's membership comprises more than 300 public and private universities, medical and veterinary schools, teaching hospitals, voluntary health agencies, professional societies, pharmaceutical companies, and other animal research-related firms.

NABR supports the responsible use and humane care and treatment of laboratory animals in research, education, and product safety testing. Further, the membership believes that only as many animals as necessary should be used in animal research; that any pain or distress animals may experience should be minimized; and that alternatives to the use of live

# Explaining the NIH Roadmap: How Neuroscience Research Fits and Benefits; and Future Goals



Many SFN members have asked about the role of neuroscience in the new NIH Roadmap. Story Landis, director of the National Institute of Neurological Disorders and Stroke, coordinated the following article with Thomas Insel, director of the National Institute of Mental

Health; Nora Volkow, director of the National Institute on Drug Abuse; Paul Sieving, director of the National Eye Institute; Ting-Kai Li, director of the National Institute on Alcohol Abuse and Alcoholism; and James Battey, director of the National Institute on Deafness and Other Communication Disorders.

NIH Director Elias Zerhouni arrived 18 months ago. Among his first actions was the creation of a Roadmap: a plan for research that coordinates efforts across institutes, overcomes current roadblocks to progress, and yields measurable outcomes for health. In addition, the Roadmap addresses a chronic concern from the scientific community that NIH is failing to support innovative research.

While the idea of a Roadmap came from Zerhouni, its development was a broad, year-long effort involving all of the institutes and centers, the extramural scientific community, and several public advocacy groups. From a series of meetings held between the summer of 2002 and the spring of 2003, three general themes emerged: 1) new pathways to discovery, 2) research teams for the future, and 3) re-engineering the clinical research enterprise. Descriptions of these themes and the specific programs that comprise them are available at <http://nihroadmap.nih.gov>. For each theme, several specific programs were developed via a matrix that maps out short-term (three- to five-year) and long-term (seven- to 10-year) goals.

Several members of SFN have asked how neuroscience fits into the Roadmap. There are several answers to this question. The first is that the Roadmap was not designed to address any organ system, disease, or pathway. The purpose of the Roadmap is to provide enabling tools for many areas of science, similar to the Human Genome Project. That said, there are a number of specific projects within the Roadmap that should involve neuroscience and neuroscientists. Each project has an implementation group with members from the neuroscience institutes. Indeed, several directors of neuroscience institutes are co-chairing these implementation groups: Ting-Kai Li, (Building Blocks, Biological Pathways, and Networks), Paul Sieving (Structural Biology), and Tom Insel (Molecular Libraries and Imaging). As most of the Roadmap will be extramural, Requests for Applications (RFAs) are created for many of these projects. All of the grant and funding opportunities are listed on the Roadmap Web site as the announcements are released.

A second commonly asked question is how neuroscience will benefit from the Roadmap. The goal of the Roadmap is to develop tools and technologies that will benefit science

generally and there is no reason to think that neuroscience would not be included. One obvious example is the structural biology initiative. Nervous system function is absolutely dependent upon voltage and ligand-gated ion channels and g-protein coupled receptors. Because membrane proteins have been extremely difficult to purify and crystallize, very few structures are available. The intent of the structural biology initiative is to fund interdisciplinary groups of scientists to develop new methods for producing large quantities of research-quality membrane proteins that can be used for structural determinations.

Similarly, the molecular libraries initiative will fund several extramural centers to screen small molecules from the first large chemical repository available to academic researchers. Unlike drug development efforts in pharmaceutical companies, the molecular library program will create the molecular tools for investigating new cellular pathways or designing new probes for imaging. Neuroscientists should be contributing to the screening centers and they should be among the first beneficiaries of the molecular tool kits that are developed.

A third commonly asked question is whether these Roadmap projects will reduce the funding for R01s or institute-specific projects. The budget for the Roadmap will be from pooled funds across the institutes, with a collective total over the first five years of nearly \$2 billion (against a projected NIH five-year budget of more than \$140 billion). Because the funds will be pooled across all institutes, if neuroscientists compete successfully for the new RFAs, there is potentially more funding than would be available without the Roadmap. It also seems likely that there should be economies related to the investment made in technology. Using structural biology again as an example, the NIH believes that the two large centers will be able to solve the problems related to membrane protein production far more efficiently than individual scientists, each working on their favorite ion channel or receptor.

Finally, several astute observers have asked about future goals and whether Roadmap goals will remain the same for the next several years. The Roadmap has always been conceived of as an iterative process, adapting to the next big discovery. The goal is to overcome roadblocks to progress, not to set up inflexible infrastructure. We expect to revisit the goals and redevelop the matrix as we go, recognizing that progress cannot always be scripted or predicted. The existence of the NIH Roadmap highlights the opportunity to create a Brain Roadmap that could develop neuroscience-specific infrastructure and integrate research efforts targeted toward understanding how the human brain works. One thing should be clear: this is not "business as usual" at the NIH. All of us are enthusiastic about the Roadmap process, but this will only succeed for the neuroscience community if neuroscientists participate. ■

# SfN Joins Legal Initiative to Protect the Responsible Use of Animals in Research

The Society for Neuroscience and several other influential scientific organizations have joined together to explore ways to respond to the attempt by animal activists to gain personhood status for animals used in research. Working with legal counsel experienced in this field, the group will examine outreach methods that would be well-received by the legal community and the public, educating these audiences about this legal debate from the biomedical research perspective.

Legal activists for animal rights have put forth the argument that, because science is increasingly able to place animal cognition, communication, and self-awareness along a spectrum together with mentally disabled humans, denying legal rights to every animal species is at odds with science. (See 2003 Spring NQ.)

The argument contains a number of flawed assumptions. One of them is that rights are scientifically measurable, when in fact rights are not grounded in science but in beliefs about the moral dignity of human beings. An important challenge facing biomedical research, and particularly neuroscience, is whether the moral uniqueness of humans as a species can be defended going forward.

Clearly, this is a challenge that deserves our immediate and focused attention, particularly since a wide array of top legal talent has lined up in favor of the animal rights position, including prominent lawyers from Harvard, Stanford, and the University of Chicago law schools. This new legal movement

includes members of a growing number of animal law committees affiliated with bar associations, and is reflected in the proliferation of animal law classes – currently 32 – around the country. In addition to the Society for Neuroscience and National Association for Biomedical Research (NABR), groups participating in the biomedical research community’s initiative include the American Association of Anatomists, the Association of American Medical Colleges, the American Academy of Neurology, the American College of Neuropsychopharmacology, the American Physiological Society, the American Society for Pharmacology and Experimental Therapeutics, and the Federation of American Societies for Experimental Biology.

The effort on the part of SfN and the scientific community comes at a critical time and is unique, in that this is the first time biomedical organizations are intervening at the beginning of a potentially threatening situation instead of when the challengers have already built a solid foundation. Because of the complexity of the issue, the initiative will be a long-term endeavor that must develop a detailed understanding of the issue and build a consensus within the biomedical research community itself. Researchers, as much as lawyers, judges, and the public, need to understand that legal rights do not correlate to certain measurements of neurological performance.

This important effort, managed by NABR, deserves wide support among the scientific community. ■

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# The President's Science Adviser Discusses Biomedical Research, Funding, and Policies



John Marburger

*John Marburger is the Bush administration's science adviser. Prior to this appointment, he was director of Brookhaven National Laboratory and president of the State University of New York at Stony Brook. Marburger earned his bachelor's degree in physics from Princeton University and his PhD in applied physics from Stanford University.*

**NQ:** *What do you believe are the most exciting directions for biomedical research in the near future?*

**Marburger:** Thank you for inviting me to comment on these issues. I am a physicist, as you know, but my Associate Director for Science, Kathie Olsen, is not only a biologist, but a neuroscientist and long-time member of the Society for Neuroscience. We are both committed to ensuring that the full breadth of contemporary scientific endeavor is represented in the administration's deliberations on science policy.

Conditions have never been better for biomedical research. Steady advances in fundamental knowledge, combined with amazing new tools and technologies, have opened new frontiers for research and spurred the translation of discoveries into clinical applications. Mapping the human genome opened the door to striking new developments in genomics and genetic medicine. Elucidation of the molecular basis of cellular processes and their significance to the organism remain important mainstream research activities, as do integrative and interdisciplinary approaches to complex biological systems. This work will continue to give new insight into human development, behavior, health, and disease. In neuroscience, recent major advances in understanding the human brain demonstrate the value of integration across the diverse fields of psychology, anatomy, cellular and molecular biology, physics, endocrinology, computer science, and pharmacology.

**NQ:** *What is the future of the National Institutes of Health (NIH) funding under the Bush administration? Is the 2 to 3 percent increase expected this year typical of what the scientific community should expect in future years?*

**Marburger:** NIH funding has enjoyed the highest priority for science funding in this administration. It currently consumes approximately half of all federal science and technology funds. In the immediate future, tight budgets will make it difficult to effect large increases even in the highest priority areas, but the administration is committed to maintaining its leadership in fields of science important to future economic competitiveness. It will do this through continued emphasis on planning, prioritization, and careful management of scarce resources.

**NQ:** *What can national science policies do to foster quicker translation of basic biomedical research into clinical applications?*

**Marburger:** I think the new Roadmap for Medical Research unveiled recently by NIH Director Elias Zerhouni is an important guide to policy that will improve the environment for translation of biomedical research into applications. The Roadmap envisions a new set of relationships among patients, community-based physicians, and academic researchers to translate basic research results efficiently into products. It outlines how NIH will work to optimize the clinical research infrastructure, train the workforce, and create research networks.

*"The NIH Roadmap is not a new program that requires new funds, but rather a planning tool that allows the agency to prioritize and manage its programs, regardless of the level of funding."*

—John Marburger

**NQ:** *The NIH Roadmap is an ambitious enterprise. As a scientist, what are your thoughts on the Roadmap as an approach? Will funding for the Roadmap be additive, or will it come out of funding for existing research?*

**Marburger:** The Roadmap approach is a good one and is well adapted for planning in an increasingly interdisciplinary world. The NIH Roadmap is not a new program that requires new funds, but rather a planning tool that allows the agency to prioritize and manage its programs, regardless of the level of funding. We strongly support this approach.

**NQ:** *How does the administration balance the need for combating bioterrorism with ensuring appropriate funding for the rest of the biomedical research enterprise?*

**Marburger:** The administration recognizes that each area of science has intrinsic needs and processes that have to be supported if the whole apparatus is to work effectively. Balance in this case may not be as difficult as one might imagine because of the "dual use" aspect of research related to bioterrorism. For example,

a primary target of bioterrorism research is infectious disease, whose understanding is required to address naturally occurring as well as deliberately induced outbreaks.

**NQ:** *Many scientists have expressed concern that federal outsourcing and centralization of personnel at the Department of Health and Human Services (DHHS) will have a negative influence on biomedical research. What is your perspective?*

**Marburger:** The context for the changes in federal agency business and management practices is the President's Management Agenda, which is a tool for increasing efficiency and responsiveness throughout the federal government. New management approaches within DHHS and NIH are strongly indicated by the changing scale and nature of biomedical research. Outsourcing and centralization are management tools that can improve the climate for biomedical research when appropriately deployed.

**NQ:** *This administration has changed the status of science adviser to assistant to the president from Cabinet rank. Should the president's science adviser be a Cabinet-level position?*

**Marburger:** No. The effectiveness of the science adviser depends almost exclusively on the quality, timeliness, and relevance of advice, not on the title.

**NQ:** *Where does biomedical research stand in the administration's priorities? In your testimony before the House Committee on Science for fiscal year 2004, there was a strong mention of the physical sciences, with less emphasis on biomedical research.*

**Marburger:** Biological, physical, and information sciences have converged at an incredible pace. It is necessary to address needs in all these areas to ensure sustained progress. The need to address priorities in other areas does not imply that biomedical research is unimportant, only that it is not uniquely important.

**NQ:** *Only 12 to 14 of the 78 embryonic stem cell lines identified by the National Institutes of Health as meeting the President's policy guidelines are available, and not all of those have proved viable for research. What is the administration's position on allowing more stem cell lines to become available for federal funding?*

**Marburger:** The President established the current administration position on stem cell research in his address of August 9, 2001, available on the White House Web site, ([www.whitehouse.gov/news/releases/2001/08/20010809-2.html](http://www.whitehouse.gov/news/releases/2001/08/20010809-2.html)). This speech remains the best and most lucid statement of this policy.

**NQ:** *Outside the United States, several countries, including Sweden, Israel, the United Kingdom, and Singapore, have accelerated their embryonic stem cell research programs without the limitations on use that constrain U.S. researchers. How can the United States maintain leadership in this field if other nations create a better environment for stem cell research?*

**Marburger:** I think your concern comes from an overly narrow definition of "this field." It is not at all obvious that efforts to understand and influence developmental processes in organisms are significantly inhibited by current restrictions on stem cell research.

**NQ:** *Several scientific and medical groups, most recently the American Association of Medical Colleges, have expressed concern about reports that some 200 NIH-funded research grants largely dealing with sexual behaviors are being subjected to extraordinary scrutiny as a result of pressure from either members of Congress or private advocacy groups. The review questions the NIH's peer review process. Are you aware of this extraordinary pressure and do you endorse it? Do you support the current NIH peer review process?*

*"The administration is committed to maintaining its leadership in fields of science important to future economic competitiveness."*

—John Marburger

**Marburger:** The current NIH peer review process is very robust, and it is constantly undergoing review and improvement. As recently as July 2003, the NIH Center for Scientific Review published an evaluation of the reorganized peer review structure for neuroscience. The NIH peer review process is designed to guide the grant award process according to judgments about scientific quality. I am confident that it will continue to do so.

**NQ:** *What is the administration's position on the teaching of evolution in schools?*

**Marburger:** Evolution is a cornerstone of modern biology. It is an appropriate, indeed an essential, component of a modern science curriculum.

**NQ:** *Several reports, most prominently by Donald Kennedy in Science magazine editorials, have described the politicization of the scientific advisory panels appointed by the executive branch in areas ranging from reproductive health to the environment. Kennedy says "appointees to scientific advisory committees are subjected to tests of political loyalty." How do you respond?*

**Marburger:** The essential criteria for a member of a scientific advisory panel are technical expertise and personal integrity. Other aspects are unimportant.

**NQ:** *A Washington Monthly article published during the summer of 2003 accused the administration of "finding" the science to fit its policy decisions rather than objectively evaluating the prevailing view in science. How do you respond to those who say that this administration is anti-science?*

**Marburger:** These accusations are untrue, in my experience.

**NQ:** *The private sector has largely taken the lead in funding a Human Proteome Project similar to the Human Genome Project.*

# Major Talks on Addiction, Neuroethics, and Depression Highlight Neuroscience 2003

Attendance at the Society's 33<sup>rd</sup> Annual Meeting in New Orleans broke the previous record. An impressive 28,778 neuroscientists and their colleagues traveled to New Orleans November 8 – 12, topping the previous attendance record, reached at the 2001 San Diego meeting. This achievement followed directly on the heels of another: Society membership passed 34,000 in October, reaching an all-time high.

"This is an exciting time for the Society," said SfN President Anne Young. "Neuroscience is branching out to touch many areas – research, advocacy, education – and the annual meeting provides an important venue for SfN's growing membership to bring all of these achievements to the forefront."

Among the highlights of the meeting were a public lecture on the addicted brain by Nora Volkow, director of the National Institute on Drug Abuse (NIDA); a social issues roundtable on addiction; a lecture on neuroethics by Donald Kennedy, editor-in-chief of *Science*; and a panel discussion on depression.

## PUBLIC LECTURE AND SOCIAL ISSUES ROUNDTABLE ADDRESS ADDICTION

Volkow began her lecture on "The Addicted Human Brain" by reading a letter describing a man's dead-end battle with addiction. She highlighted the important difference between taking a drug because it is pleasurable and the addictive state, when taking a drug becomes compulsive and the drug is taken whether the experience is pleasurable or not. "Often addiction has less to do with an individual's lack of self-control and more to do with biochemistry within the brain," Volkow said. "I have never met a person who wanted to be addicted." Several compelling imaging studies demonstrated what happens in the brains of addicted individuals compared with non-drug users.

Panelists at the SfN Social Issues Committee roundtable discussion, "How Does the Neurobiology of Drug Addiction Inform Treatment Choices, Social Policy, and Criminal Justice?" described the need for scientists to work more closely with policymakers and representatives of the criminal justice system to treat drug addiction.

Neuroscientists know a lot about the biochemical basis for drug addiction that can prevent addicts from permanently ending their drug abuse or addiction, panelists said. Yet this sophisticated knowledge regarding the neurobiology of drug addiction is not used as a resource when rehabilitation and treatment options are considered in the criminal justice system.

"Not all drug abusers or misusers may have identifiable brain changes that can be linked to compulsivity or disinhibition," said Douglas Marlowe of the University of Pennsylvania. "The task of science is to assist practitioners and policymakers in

identifying subtypes of offender populations that are apt to respond to behavioral contingencies, to pharmacological interventions, or to a combination of the two."

The panel was moderated by Social Issues Committee chair Stephanie Bird of the Massachusetts Institute of Technology. Speakers included NIDA's Volkow, Marlowe, Charles O'Brien of the University of Pennsylvania, and Glen Hanson, associate director of NIDA and faculty member at the University of Utah.

In further recognition of the importance of drug addiction research in neuroscience, the Society presented its first Waletzky prize at Neuroscience 2003. The prize recognizes outstanding research in substance abuse and the brain and nervous system by a scientist in his or her first 15 years in the field. Pier V. Piazza of INSERM, in Bordeaux, France, was given the award in honor of his research on the biological basis for some individuals' predisposition toward addiction.

*"I don't want my insurance company to know my genome, but as for my brainome, I don't want anybody to know it for any purpose whatsoever. It is way too close to who I am."*

—Donald Kennedy

## NEUROETHICS ON NEUROSCIENTISTS' MINDS

Privacy is a leading concern in neuroethics, said *Science* magazine's Editor-in-Chief Donald Kennedy. Kennedy's lecture on "Neuroethics: An Uncertain Future," sponsored in part by the Dana Alliance for Brain Initiatives, focused on the ethical considerations faced by scientists. "The things we'd rather others not know about us [should be] knowledge that we do without," he said. "I don't want my insurance company to know my genome, but as for my brainome, I don't want anybody to know it for any purpose whatsoever. It is way too close to who I am."

Kennedy said that in making research and policy decisions, scientists and society must weigh the value of knowledge, which is

ethically without morals, against the potential for unethical or harmful purposes to which that knowledge can be put. He said scientists should be free to pursue lines of research guided by their own sense of ethics, but that there are some areas of research that neuroscientists might rather not pursue, based on the potential consequences.

#### ADVANCES IN DEPRESSION TREATMENT AND PUBLIC POLICY

The panel discussion, "Depression: Advances, a Patient Perspective and Public Policy," provided an up-to-date look at depression and its effects on both individuals and society.

Thomas Insel, director of the National Institute of Mental Health (NIMH), previewed "Real Men," a new NIMH advertising campaign aimed at reducing the social stigma associated with depression in men. More than 6 million men are currently suffering from depression, and men are four times as likely to die from suicide as women, Insel said.

The campaign seeks to convince men who are depressed to get counseling help. Andrew Solomon, author of *The Noonday Demon* described his personal experience with depression, citing early symptoms such as fatigue, followed by feelings of extreme anxiety and fear. "Depression is a chronic illness, a destructive, negative state [where] potential delight means nothing," Solomon said. He asked for tolerance toward those with depression.

Laura Lee Hall, senior policy research director at the National Alliance for the Mentally Ill, spoke about the need for effective advocacy in combating depression. She stressed that "science is a part of advocacy," and encouraged all attendees to begin lobbying their elected officials on the need for increased funding for research and treatment of mental illness.

The panel discussion was moderated by Mahlon DeLong, chair of the SfN Government and Public Affairs Committee and Timmie Professor and Director of the Neuroscience Center at Emory University School of Medicine.

#### IN MEMORIAM: A TRIBUTE TO PATRICIA GOLDMAN-RAKIC

Annual meeting attendees gathered prior to the presidential symposium to pay their respects to Patricia Goldman-Rakic, past president of the Society and professor of neuroscience, neurology, psychiatry, and psychology at Yale University School of Medicine. Goldman-Rakic died in July 2003. Huda Akil, SfN past-president, called Goldman-Rakic a pioneer, not only as a well-respected woman in a male-dominated field, but also as an excellent scientific researcher.

Pat Levitt noted the great number of neuroscientists with whom Goldman-Rakic worked throughout her career, many of whom are now renowned scientists in their own right. Eric Kandel, Nobel Prize winner and past president of the Society, remembered Goldman-Rakic as a dedicated scientist, "a pioneer of her time," who touched many people's lives.

#### PROFESSIONAL DEVELOPMENT EXPANDS CAREER HORIZONS

New at Neuroscience 2003 were several professional development workshops designed to help attendees improve their job-seeking skills and their funding and publishing possibilities. The workshop "Nonacademic Careers in Neuroscience" showcased several possible career pathways for neuroscientists, including science foundations and scientific publishing. "It is important to look at all possible avenues when choosing a career, including nontraditional ones," said workshop organizer Judy Illes of the Stanford Center for Biomedical Ethics and Department of Radiology. "This workshop's goal was to provide practical information on skill set requirements, transitional difficulties, and mid-career opportunities."

A useful skill for all neuroscientists is the ability to procure funding from a wide array of sources, not only federal agencies. The workshop "Obtaining Funding from the Foundation World" guided attendees through the often murky process of developing and submitting proposals to private foundations. "Private foundations can be an excellent funding source for scientists," said workshop organizer Sarah Caddick, former executive director of the Wadsworth Foundation. "Developing an understanding of their grant-making philosophies and policies can help a proposal's success."

Another workshop, "How to Better Prepare Minorities in Neuroscience Research," provided a forum at which minority role models in neuroscience research discussed career goals for minority undergraduate and graduate students and postdoctoral fellows. Prominent neuroscientists from minority backgrounds, including NIDA's Volkow, covered important topics such as increasing the pool of minority neuroscientists and locating funding opportunities for minorities. ■

#### Survey Finds Meeting a Success

More than 4,000 annual meeting attendees participated in the Neuroscience 2003 attendee satisfaction survey. Overall, the meeting's registration, shuttle routes, Program, and Web site all received excellent marks. An overwhelming 93 percent of those surveyed found registration for Neuroscience 2003 to be good or very good. Eighty-eight percent of the survey respondents registered online, and 50 percent agreed that paper advance registration forms should be eliminated for Neuroscience 2004. Shuttle service was also very popular; 77 percent of attendees used it and 88 percent of those individuals found it to be good or very good. Information provided about the meeting was also found to be helpful, with more than 80 percent giving the Program, Preliminary Program, Web site, and CD-ROM a rating of good or very good. Sixty-eight percent expressed an interest in having wireless Internet service at future meetings, with almost 50 percent also suggesting that an online meeting and exhibit locator, to be used on PDAs and personal laptops, would be useful at future annual meetings. ■

# NEUROSCIENCE

## SCIENCE/RESEARCH

Advocating scientific research is at the heart of the Society for Neuroscience's mission. One of the ways that SfN facilitates this is by providing a venue, the annual meeting, for the exchange of information within the neuroscience community. This year's meeting featured more than 15,000 abstracts. At Neuroscience 2003, one of the hot topics was drug addiction. Among others, Nora Volkow, the director of the National Institute on Drug Abuse, and Terry Robinson, from the University of Michigan, spoke on the topic.



Nora Volkow



Terry Robinson



## EDUCATION



Saroj Kunnakkat, Norbert Myslinski



The Annual Meeting was full of education activities for a broad range of participants. The Hands-On Neuroscience Activities Workshop introduced K-12 teachers to an array of projects and strategies for making neuroscience come alive for students. Saroj Kunnakkat, the 2003 Brain Bee winner, and Norbert Myslinski, founder of the Brain Bee, spoke at the Brain Awareness Week Campaign Meeting. The society also sponsored a short course for high school students.

The Society also announced the most recent recipients of the SfN Chapters Burroughs Wellcome Fund Postdoctoral Travel Award, which is designed to help facilitate the further education of neuroscientists in training.



SfN Chapters Postdoctoral Trainee Travel Award Winners

## ADVOCACY

The Society for Neuroscience acts as an advocate for the community on a wide variety of topics, from public policy to funding. Some of the advocacy topics discussed at this year's annual meeting were depression, drug abuse, and the use of animals in research.

Mahlon DeLong, chair of the Government and Public Affairs Committee, moderated the panel discussion on depression. Speakers included Laura Lee Hall of the National Alliance for the Mentally Ill, Thomas Insel of the National Institute of Mental Health, and Andrew Solomon, author of *The Noonday Demon*.

The Committee on Animals in Research sponsored a panel discussion: "If You Are a Target: The Best Defense is a Good Offense." Members of the panel included Stephen Lisberger, Judy Cameron, Colin Blakemore, and David Amaral.



Laura Lee Hall



Thomas Insel, Andrew Solomon



Animals in Research Panel



Mahlon DeLong

## PROFESSIONAL DEVELOPMENT



Robert Malenka, Pier V. Piazza



An important mission of the Society is finding ways to help neuroscientists, both students and professionals, advance their careers. *The Journal of Neuroscience* provides a venue for publication of research. The FASEB Career Development Center at the annual meeting provided a venue where jobseekers and employers could meet. In addition, the society helps administer awards and grants, such as the Jacob P. Waletzky Memorial Award for Innovative Research in Drug Addiction and Alcoholism. This year, Pier V. Piazza received the award from Robert Malenka, outgoing chair of the SfN Program Committee.

# NSF Rethinks its Neuroscience Program

SfN President Anne Young and Past President Huda Akil met with National Science Foundation (NSF) Director Rita Colwell and Mary Clutter, assistant director for biological sciences, in December 2003 to discuss the foundation's ongoing evaluation of its neuroscience research clusters.

The NSF developed research clusters for its biological sciences directorate in the early 1990s in response to the findings of a task force on how to approach scientific research in the 21st century. The Division of Integrative Biology and Neuroscience has housed the neuroscience programs in a cluster since that time.

Some neuroscientists have been concerned about the NSF's recent reorganization plans because it appears that the neuroscience portfolio at NSF might be divided up among clusters focused on different experimental approaches (such as behavioral, physiological, or molecular) or levels of organization (such as cellular or systems biology).

The NSF's Clutter provided this statement to the Society.

## THE FUTURE OF NEUROSCIENCE AT THE NATIONAL SCIENCE FOUNDATION



Mary Clutter, NSF assistant director for biological sciences

We at the National Science Foundation (NSF) have received a number of thoughtful letters and e-mail messages expressing concern about the future of neuroscience at NSF. We understand the concerns of the scientific community when it appears that funding for their research might be threatened.

Let us allay your fears by stating that NSF has no plans to terminate funding for neuroscience or any other fundamental research in the biosciences. We appreciate the opportunity to address any misunderstanding about the changes we are considering. We share your belief that NSF has a significant and ongoing role in supporting research related to studies of the nervous system.

We are fortunate to live during a time when the sciences are converging and the tools of genomics and other technologies are transforming all of biology. The neurosciences provide a strong model for what is happening in biology and in science overall in the 21st century. It is now within the realm of possibility to answer the "big" questions by studying these questions across levels of organization (i.e., from molecules to populations to whole ecosystems) through the concerted efforts of scientists and teams of scientists across disciplinary boundaries.

This will include the comparative study of organisms across taxa and through evolutionary time. NSF plans to be at the forefront of such leading-edge research and education and is considering organizational changes to facilitate such advances.

Once again, despite rumors to the contrary, there are no plans to eliminate support for neuroscience research at NSF. If anything, there will be more opportunities for support. Review of neuroscience proposals will be managed by program directors who have appropriate expertise. Reviewers and panelists will continue to be drawn from the neuroscience community. Proposals on nonmedical neuroscience will continue to be welcomed as an important component of our research portfolio.

*"The neurosciences provide a strong model for what is happening in biology and in science overall in the 21st century."*

—Mary Clutter

That said, we ask for assistance in our efforts to recruit program directors with expertise in neuroscience. The Society for Neuroscience can play an important role in this regard by helping to identify appropriate candidates and by conveying to universities and colleges the value of such experiences for the individual, the institutions, the science community, and NSF.

## NSF NEUROSCIENCE PROGRAMS



Diane M. Witt

Diane M. Witt, program director of the Behavioral Neuroscience Program and Neuroendocrinology Program at NSF, provides a look at opportunities for neuroscience funding and involvement at NSF.

### RESEARCH OPPORTUNITIES

The NSF provides funding opportunities for neuroscience research in several directorates and through agencywide programs. The Biology Directorate funds research in neuronal/glial mechanisms, development, sensory systems, neuroendocrinology, and behavioral and computational neuroscience.

The Directorate for Social, Behavioral, and Economic Sciences supports research on cognitive neuroscience, while the Directorate for Education and Human Resources supports Research on Learning and Education. Computational neuroscience projects are also funded in the Computer and Information Science and Engineering Directorate.

## EDUCATION AND TRAINING

Course, Curriculum, and Laboratory Improvement awards seek to improve undergraduate education in two- to four-year colleges and universities. Research Experiences for Undergraduates site awards support research conducted by students. Integrative Graduate Education, Research, and Training awards are traineeships for students with multidisciplinary interests. Graduate Research Fellowships are also available.

## CAREER DEVELOPMENT OPPORTUNITIES

The Faculty Early Career Development Program funds research and education activities of teacher-scholars. Research Opportunity Awards enable faculty at predominantly undergraduate institutions to work with NSF-supported investigators at larger universities. Larger universities can also request support for high school teachers seeking research experiences through Research Experiences for Teachers supplements.

## COLLABORATIVE RESEARCH AND NETWORKING

The Human Brain Project, a National Institutes of Health (NIH)/NSF joint effort, supports cooperative research among neuroscientists and information scientists. Collaborative Research in Computational Neuroscience, an NSF/ NIH initiative, supports multidisciplinary projects designed to develop analytical/modeling tools that integrate different levels of neural organization, spanning temporal and spatial scales.

Other projects include Frontiers in Integrative Biological Research (FIBR) and the Human and Social Dynamics (HSD) initiative. FIBR encourages the use of innovative approaches that integrate concepts and research tools from across disciplines to address major unanswered questions, while HSD supports research on the dynamics of human behavior, enhancing our understanding of the cognitive and social structures that are related to rapid change in today's world.

Research Coordination Networks foster communications and collaborations among scientists with common goals, enabling coordination of research efforts. Information Technology Research supports research on challenges created by the expansion and use of information technology across the sciences.

## MULTIDISCIPLINARY CENTERS

The NSF also has several multidisciplinary centers that help forge collaboration among various branches of science. Science of Learning Centers are research centers that create the intellectual, organizational, and physical infrastructure needed for the long-term advancement of learning research. Science and Technology Centers foster integrative partnership programs that facilitate innovative research, education, and outreach projects. Engineering Research Centers provide integrative environments for academia and industry to focus on advances in complex engineered systems important for the nation's future.

Neuroscientists interested in viewing abstracts of projects funded by NSF may visit <https://www.fastlane.nsf.gov/a6/A6Start.htm> ■

## Q & A WITH ANNE YOUNG, SfN PRESIDENT

**NQ:** *The evolving reorganization plans at NSF reportedly involve dispersing the neuroscience clusters among different divisions. How will this affect the NSF's approach to neuroscience research?*

**Young:** During our meeting, NSF leaders said that NSF is evaluating its clusters to determine how best to align them for 21st century multidisciplinary research. They noted that, rather than focusing on each cluster, the new plan may create a logical organizational scheme to address cross-cutting questions. NSF noted that such a focus should enhance neuroscience funding, but added that neuroscientists should explore all of NSF for funding opportunities. We impressed upon Drs. Clutter and Colwell the importance of NSF's continued support of neuroscience research.

**NQ:** *How did NSF say the Society could be useful as its reorganization plans evolve?*

**Young:** The NSF asked for our assistance in recruiting program directors and proposal reviewers. As we understand it, NSF is attempting to create a more fluid and dynamic review system, one in which the types of review boards and the individuals on them would vary, depending on the types of proposal submissions received. SfN members can help keep neuroscience visible by continuing to submit strong grant proposals. We can also help by suggesting individuals to serve as review panelists and program officers, keeping in mind the more fluid nature these panels will take in the evolving reorganization.

**NQ:** *How will changes to the NSF's budgeting process affect neuroscience research funding, and what can the Society do?*

**Young:** NSF leaders tell us that the potential changes to their budgeting process will not adversely affect neuroscience research funding. SfN has always advocated on behalf of funding for NSF. For Fiscal Year 2005, SfN is taking active steps to increase its funding advocacy efforts to more strongly emphasize NSF funding. Our new legislative advisory firm, Cavarocchi-Ruscio-Dennis Associates, will assist SfN leaders and staff in constructing a strategic approach to science funding advocacy for NSF.

**NQ:** *Some neuroscientists have expressed concern that neuroscience could become fragmented as a result of the evolving NSF reorganization, thus diluting proposal review and funding mechanisms. What was your sense from discussions with NSF leaders?*

**Young:** In our discussions and correspondence with NSF, we presented these concerns and continued to offer SfN's assistance in shaping the reorganization. We expressed our interest in sharing information and engaging in a dialogue with NSF leaders on potential changes before they are finalized. Again, I emphasize the need to increase the representation of neuroscience on NSF boards and in review of proposal submissions. Neuroscientists can begin to cast grant proposals in such a way that they emphasize cross-disciplinary approaches that speak to the NSF's emphasis on cross-cutting research questions in its evolving reorganization. ■

## NEWLY FORMED BRISBANE CHAPTER PROMOTES “NEUROSCIENCE DOWN UNDER”

Officially launched on May 21, 2003, the Brisbane, Australia, chapter is one of the first to take advantage of recent changes to the SfN bylaws granting permission for the formation of international chapters. At present, the chapter is one of three international chapters outside of North America and is the only one in Australia.

Despite its relatively remote location with respect to North America, “Neuroscience Down Under” is thriving, with a large number of neuroscientists making important advances in diverse areas. Largely based in the School of Biomedical Sciences at the University of Queensland in Brisbane, the Brisbane chapter bridges the geographical gap between Australia and North America, forging closer links between the neuroscience communities.

The chapter’s first meeting was attended by 45 neuroscientists (22 faculty members, 16 postdoctoral trainees, and 17 graduate students) from around Southeast Queensland, all committed to promoting neuroscience. Chapter officials are confident that more members will be recruited and that they will actively participate in realizing the SfN mission and vision as the chapter becomes more established.

Neuroscientists at the University of Queensland work in many diverse research areas, including neurophysiology, developmental cell biology, neuroendocrinology, sensory neurobiology, and molecular neuroscience. Since the inception of the university’s Vision, Touch, and Hearing Research Centre, headed by John Pettigrew, neuroscience has seen a major increase in interest. A recent highlight of this surging popularity was the appointment of Perry Bartlett as the foundation chair in molecular neuroscience and as the inaugural director of the newly established Queensland Brain Institute at the University of Queensland.

“These developments, along with the establishment of the SfN chapter, herald an exciting future for Australian neuroscience,” said Shaun Collin, chapter chair and neuroscience program director at the University of Queensland.

Since the establishment of the Brisbane chapter, an SfN Chapters/Eli Lilly Graduate Student Travel Award was granted to Christine Devine, from the University of Queensland School of Biomedical Sciences. Devine presented her work on the function of Robo3b in axon navigation during vertebrate brain development at Neuroscience 2003 in New Orleans. This award, which recognizes the promising work of graduate students who have been nominated by their local chapters for excellence in neuroscience, was presented at a special reception held during Neuroscience 2003.

The Brisbane chapter also hosted a reception, “Neuroscience Down Under,” in New Orleans. More than 100 Australians currently abroad and other SfN members interested in Australian neuroscience informally met to discuss neuroscience and the possibilities for research and career development unique to Australia. The reception was sponsored by the School of Biomedical Sciences, the Queensland Brain Institute at the University of Queensland, and Olympus Australia Pty

Ltd. The chapter has been investigating other ways to promote neuroscience research and SfN activities. The chapter plans to establish a Web site to educate the public about neuroscience research, to keep members and interested parties abreast of the latest initiatives in our region, and to promote the various opportunities available from SfN to sponsor graduate students and postdoctoral trainees to attend the SfN annual meetings. The chapter also recognizes the importance of supporting young investigators and hopes to be able to sponsor a number of PhD students to attend the upcoming satellite meeting of the International Conference for Eye Research (ICER), “Vision Down Under – A Satellite Meeting on the Eye and Brain,” to be held on Fraser Island, off the coast of Queensland, in September 2004 ([www.tourhosts.com.au/icer2004](http://www.tourhosts.com.au/icer2004)).

For more information on SfN chapters, please go to [www.sfn.org/chaps](http://www.sfn.org/chaps). ■

## MINISYMPOSIA WILL FEATURE YOUNG INVESTIGATORS AT NEUROSCIENCE 2004

The Program Committee has created a new submission category for the 2004 annual meeting that will offer younger investigators a forum for presenting their research. The new category, minisymposia, will be similar in format and purpose to regular symposia but will feature shorter talks by more speakers.

While well-known researchers often dominate regular symposia, minisymposia will feature a younger cross-section of neuroscientists. “The Annual Meeting Working Group believes that minisymposia will provide young investigators with a new forum to present their research in a more substantial and higher profile format than the shorter slide sessions,” said Richard Haganir, SfN treasurer and chair of the Annual Meeting Working Group. “Minisymposia will also provide a forum for more specialized topics than symposia and for presentation of recent cutting edge research.”

Currently, annual meeting symposia allow for four speakers over a period of two and a half hours. At minisymposia, six speakers will give shorter talks over the same time period. Increasing the number of speakers allows for increased diversity of presenters at the Society’s annual meeting.

“These minisymposia will provide an opportunity for junior scientists – the people at the bench doing the exciting experiments – to speak to audiences beyond their specific area, giving them a kind of exposure and impact that isn’t currently available to them at the annual meeting,” said Leslie Tolbert, Program Committee chair.

The submission process for minisymposia is like that for regular symposia. The deadline for submitting minisymposia proposals for Neuroscience 2004 closed January 16, but the Program Committee hopes young investigators will start considering ideas for future years as well. “The success of the minisymposia depends on the number of strong proposals we receive,” Haganir said. “We strongly encourage young investigators to consider organizing a minisymposium for SfN annual meetings.”

More information and other details on the new category minisymposia are available at [www.sfn.org/minisympro](http://www.sfn.org/minisympro). ■

## SfN ADDS NONPROFITS TO ITS SUSTAINING ASSOCIATE MEMBERSHIP CATEGORIES

The Society for Neuroscience recently added a nonprofit category to its Sustaining Associate Membership categories. The new category is open to organizations with an interest in helping support SfN's programs and mission. The nonprofit category expands the types of organizations that can become Sustaining Associate Members, previously available only to corporate businesses.

Nonprofit Sustaining Associate Membership status confers several benefits. Nonprofit members will be offered an online banner ad in *The Journal of Neuroscience*. A link to their home page will be added to the SfN Web site. Nonprofit members will have access to *The Journal of Neuroscience* online and complimentary annual meeting registration for one representative.

Nonprofit Sustaining Associate Members will also have their names printed in society publications and on annual meeting signs, giving participating organizations high visibility within the society's membership. For more information regarding Sustaining Associate Membership or to become a member, please visit [www.sfn.org/npsams](http://www.sfn.org/npsams) or contact Marlene Poole, director of membership at: [sams@sfn.org](mailto:sams@sfn.org). ■

## CHANGES AT THE JOURNAL OF NEUROSCIENCE

*The Journal of Neuroscience* has introduced several changes for the new year including a new section; availability of complete, online archives; and a submission fee.

A new section called "Neurobiology of Disease" debuted with the January 7, 2004, issue. The new section was added to accommodate the increasing number of accepted papers that relate to neurological diseases. Such papers often are multidisciplinary and do not fit naturally into just one of the existing sections.

Authors will have the option of choosing this section when they initially submit their paper for review and publication. Manuscripts will be handled by the Editor-in-Chief or assigned to the most appropriate Senior Editor. *The Journal* will also highlight a paper from this section weekly on the online section of the Web site, "This Week in the Journal" ([www.jneurosci.org/thisweek.shtml](http://www.jneurosci.org/thisweek.shtml)).

## ARCHIVES NOW COMPLETE AND ONLINE

Complete archives for *The Journal of Neuroscience*, beginning with Volume 1, Number 1, published in 1981, are now available online. No separate subscription is required for institutions to access the extensive collection of almost 15,000 full-text articles with complete graphics.

The archives have already proven to be very popular. In 2003, 2.6 million full-text articles were downloaded.

Access to the substantial archives, assembled as searchable and downloadable pdfs, is available to subscribing institutions and to all Society for Neuroscience members. The more than 66,000 additional pages of information accessible online will greatly enhance users' researching capabilities.

## MANUSCRIPT SUBMISSION FEE

The new section and archives availability follow on the heels of several investments in improving *The Journal* that were made last year, including weekly publication, a new design, new editorial content, improved online features, and online manuscript submission. In addition, the costs associated with peer review also have increased, as the number of submitted manuscripts continues to grow rapidly (currently 6,000 per year).

To help ensure the financial viability of *The Journal* going forward, in November 2003 the SfN Council decided to implement a manuscript submission fee. Beginning January 5, 2004, new submissions to *The Journal of Neuroscience* became subject to a submission fee of \$50. Submitting authors now are asked to pay the fee by credit card at a secure site when they complete the online manuscript submission process. *The Journal* will consider requests to waive the fee for well documented cases of extreme financial hardship.

*The Journal* currently operates as a break-even publication even after a modest contribution from SfN member dues. All revenue generated by *The Journal* is reinvested in *The Journal* to make improvements that benefit subscribers, authors, editors, and readers.

The subscription rate for libraries is substantial, but annual price increases are modest, which has allowed the Society to maintain wide distribution of the important research published in *The Journal*. At the same time, *The Journal* strives to continually increase the benefits and convenience for library subscribers, such as including access to *The Journal's* complete archive in this year's library subscription fee.

Authors currently pay modest page charges, which cover only a portion of the costs of publishing an article in print and online. Similarly, the new manuscript submission fee covers only a portion of the costs of supporting the extensive peer review structure. The allocation from member dues allows the Society to offer every member a free online subscription.

The SfN Council has affirmed that it is more important to support members who require color figures to communicate their science than it is to increase profits for *The Journal*. Accordingly, since late 2002, SfN members have been entitled to publish essential color figures in *The Journal* at no additional cost, compared to the fees (often up to \$1,000 per figure) charged by many other journal publishers. The cost of providing "free color" to members is substantial, amounting to hundreds of thousands of dollars per year.

The Society's decision to implement a modest manuscript submission fee was a difficult one, and one not taken lightly. Recognizing the continued growth of the field of neuroscience, as reflected in the increase in *The Journal* submissions and published papers, the Society decided a submission fee was necessary in order to maintain *The Journal* as the premier peer-reviewed scholarly journal spanning the entire field of neuroscience. ■

# See you in San Diego!



Neuroscience 2004 ■ 34th Annual Meeting ■ San Diego, CA ■ October 23-27



... *Advocacy Partners, continued from page 5*

animals should be developed and employed, wherever feasible.

#### **American Brain Coalition**

This coalition of some 30 patient advocacy groups, neurology professionals, and neuroscience researchers was organized in 2001. Its purpose is to leverage the combined resources of member organizations to improve the quality of life for those affected by brain and nervous system diseases and disorders.

A new initiative is now underway to revitalize and energize the coalition's efforts. Mahlon DeLong, SfN's governmental and public affairs committee chair, now sits on a subcommittee to develop a new mission statement. Marty Saggese, SfN's executive director, sits on a subcommittee to formulate a business plan.

The coalition's activities include developing and distributing information about brain and nervous system diseases; advocating with legislators, regulators, and other public and private poli-

cymakers; and supporting increased funding for basic and clinical biomedical research on the brain and nervous system.

#### **Research!America**

This national, not-for-profit, public education and advocacy alliance was founded in 1989. It seeks to make medical and health research — including research to prevent disease, disability, and injury and to promote health — a higher national priority. Members include more than 460 academic and independent research institutions, hospitals, private industries, voluntary health groups, professional societies, and philanthropies.

Its goals include achieving increased funding for medical and health research in both public and private sectors; informing the public of the benefits of medical and health research; motivating the public to actively support medical and health research; and promoting and empowering a more active public and political life by individual members of the research community on behalf of medical and health research, public health, and science overall. ■

... Marburger, continued from page 9

*This new initiative's goal is to develop a complete inventory of the hundreds of thousands of proteins in the human body. It holds the promise of finding new drugs designed to repair abnormal proteins that cause many of humankind's worst diseases, including cystic fibrosis, sickle cell anemia, and Huntington's disease. It has been estimated that it will take 12 years, at a cost of \$3 billion. Do you envision the U.S. government playing a more active role in this project? If so, at what level of funding?*

**Marburger:** The Department of Energy and NIH have supported proteomics at significant levels and will continue to do so. Funding for tools, such as intense X-ray sources at national laboratories, that are needed for this enterprise remains an administration priority. The conceptual nature of the work here differs substantially from that for the human genome, and its products play a different role in biomedical research and applications, so a "proteome project" is not really comparable with the genome project. However, I am confident that the agencies will continue to fund this work with relatively high priority.

**NQ:** *The President's Bioethics Commission, headed by Leon Kass, is developing proposals for action by Congress. Is legislation an appropriate way to influence the direction of scientific research, and when is it not appropriate?*

**Marburger:** Federal science funding requires legislation, and more than 90 percent of that funding flows through agencies with specific non-science missions. So legislation necessarily influences the direction of research. I think you wanted to ask if ethical aspects of research should be legislated. Federal research is conducted under legislative constraints regarding public and worker safety, environmental impacts, and the protection of human subjects, all of which have ethical dimensions. It is easy to imagine cases where useful scientific knowledge could be gained in an ethically reprehensible manner, and it is reasonable to expect society to use government mechanisms to ensure this does not happen. Democracies have a long history of using their legislative institutions to define community standards on such issues. ■

... Kennedy, continued from page 1

"As remarkable as the Society's progress has been in recent years, I know the best is yet to come," Kennedy said. "New advances in genetics and in imaging of the brain are likely to lead to unimaginable new benefits in health care in the coming years, and I intend to do all I can in Congress to see that this research has the full support it needs."

Young also discussed with Kennedy several recent neuroscience advances, particularly those in neuro-robotic technology and in the understanding and possible treatment of disorders such as Alzheimer's, Parkinson's, and Lou Gehrig's diseases.

The December meeting was arranged because Kennedy was unable to accept the award at SfN's Capitol Hill reception held on May 14, 2003, which also honored Sen. Orrin Hatch (R-Utah) and actor Michael J. Fox. ■

NQ welcomes reader responses to articles that appear in the newsletter. To provide a forum for comment, NQ is introducing a new Letters to the Editor feature. If you would like to respond to an article or idea appearing in NQ, please send an e-mail to [nqletters@sfn.org](mailto:nqletters@sfn.org). The editors of NQ reserve the right to select letters for publication and will edit them for style, length, and content.

— The Editors

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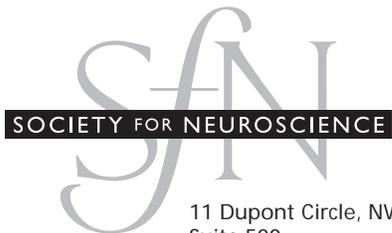
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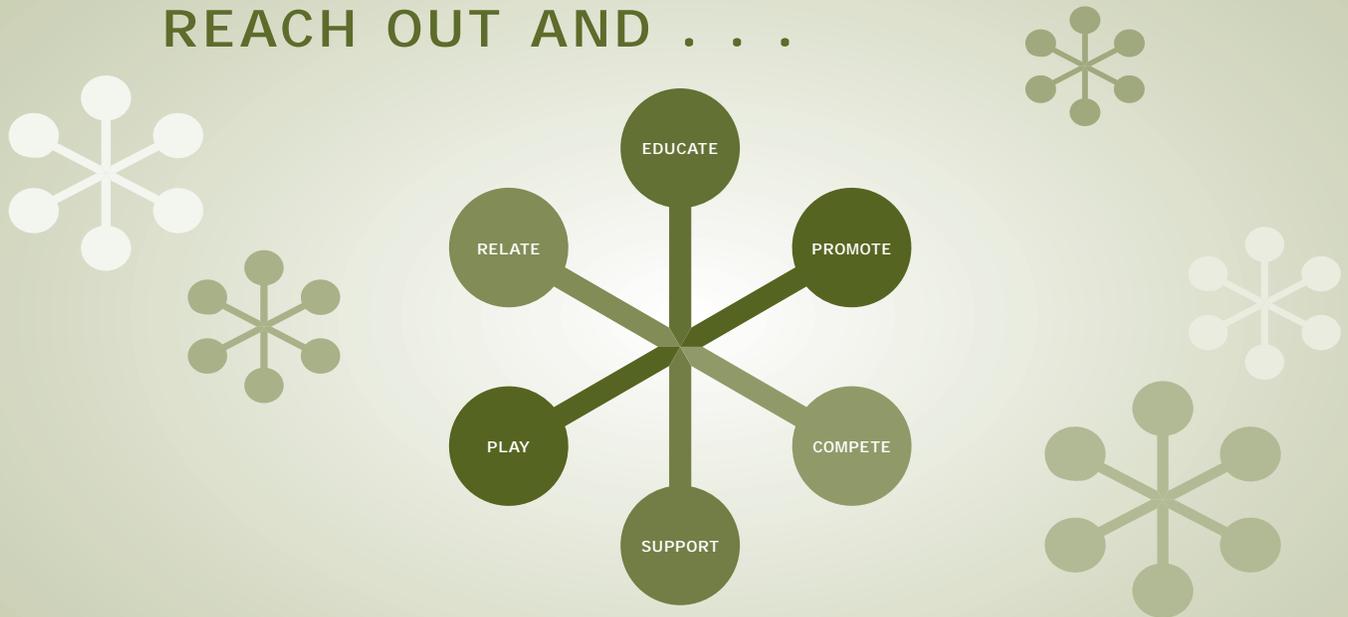


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