



NAVIGATING A CHANGING LANDSCAPE

FY2006 *Annual Report*

SfN
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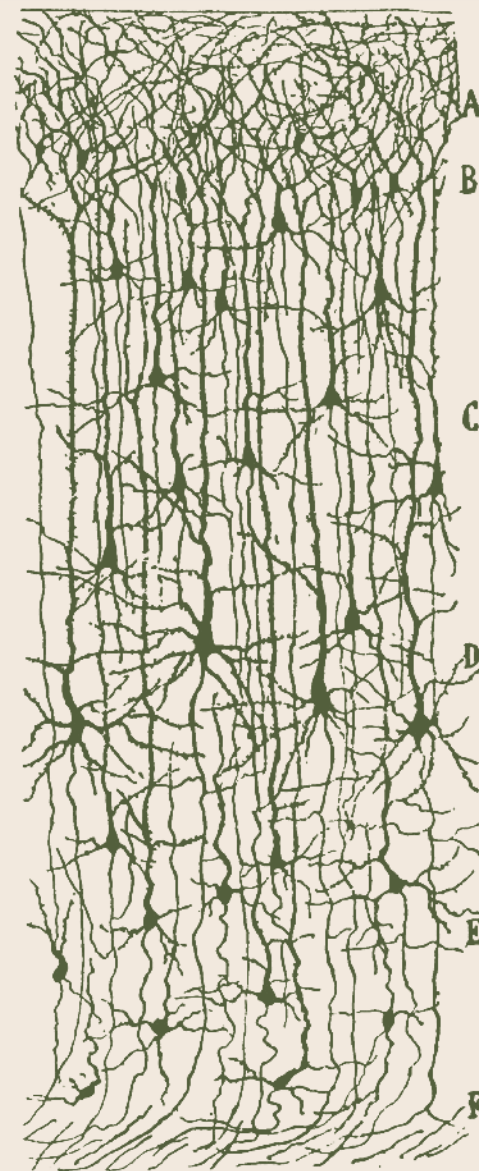
Edward R. Perl, MD, 1969–70

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This drawing, published in 1904, depicts the six layers of the mouse neocortex, labeled A through F, by Santiago Ramón y Cajal. It was used as the basis for a mural in the new SfN headquarters building (See page 21). The mural was fabricated through a collaborative project with the Catholic University of America School of Architecture and Planning.



MISSION

- Advance the understanding of the brain and the nervous system by bringing together scientists of diverse backgrounds, by facilitating the integration of research directed at all levels of biological organization, and by encouraging translational research and the application of new scientific knowledge to develop improved disease treatments and cures.
- Provide professional development activities, information, and educational resources for neuroscientists at all stages of their careers, including undergraduates, graduates, and postdoctoral fellows, and increase participation of scientists from diverse cultural, ethnic, and geographic backgrounds.
- Promote public information and general education about the nature of scientific discovery and the results and implications of the latest neuroscience research. Support active and continuing discussions on ethical issues relating to the conduct and outcomes of neuroscience research.
- Inform legislators and other policymakers about new scientific knowledge, recent developments, and emerging opportunities in neuroscience research and their implications for public policy, societal benefit, and continued scientific progress.

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VISION &

Chapter 1



VALUES

SfN'S SCIENTIFIC VISION

Guided by its mission and its values, the Society for Neuroscience (SfN)'s vision is that the next decade should be one of breakthrough discovery that will lead to the translation of scientific advances to improve the health of people everywhere.

As SfN represents the entire range of scientific research endeavors aimed at understanding, treating, and preventing nervous system disorders, it fosters the broad interdisciplinarity of the field that uses multiple approaches to study the nervous systems of organisms ranging from invertebrates to humans across various stages of development, maturation, and aging. SfN also facilitates the translation of research findings into treatment strategies, encourages information transfer from the clinic back to the basic research arena, and contributes to the breadth of the field of neuroscience, and its creative use of all the tools of modern biology to understand neural function in health and disease.

Neuroscience is a rapidly evolving field that benefits greatly from, and helps to drive, the ongoing development of powerful new tools used to acquire and analyze experimental data. The effort to make efficient use of the staggering amounts of diverse information known about the nervous system raises challenges that have

social, ethical, and technical dimensions. Some of these challenges are common to biomedical research and its subdisciplines of bioinformatics and scientific ethics. Others are unique to neuroscience by virtue of the tremendous complexity of neural circuits and their role in controlling behavior. These challenges prompt opportunities, as well as responsibilities, to develop new tools and approaches for integrating and advancing the understanding of the nervous system.

SfN will play a key role in confronting new issues by challenging and energizing the field through active dialogue with federal funding agencies, such as the National Institutes of Health, National Science Foundation, and others, to define current needs and to develop strategies for meeting them. SfN's perspective on the field's current nature and its future trajectory permeates all the elements of the strategic plan and will guide the initiatives aimed at enhancing key scientific functions, including the annual meeting and *The Journal of Neuroscience*. This perspective will guide the ways in which SfN will strive to serve its membership and frame the public outreach and governmental interactions.

SfN'S ORGANIZATIONAL VALUES

In carrying out all of its activities, the Society for Neuroscience is committed to the following:

- Identifying and serving the needs of SfN members as well as the field of neuroscience.
- Continuing to promote greater diversity of representation of women, minorities, and young investigators, along with geographic and specialty balance, in SfN's meetings, conferences, committees, and governance processes.
- Seeking innovative ways to utilize technology to better serve members and to help manage the problems of scale as a successful association in the 21st century.
- Fulfilling its Mission in a socially, economically and environmentally responsible fashion, including minimizing SfN's environmental footprint through energy efficiency, recycling, and other initiatives, and being mindful of the broader impact of its day-to-day practices.
- Developing effective strategic relationships and collaborative initiatives with appropriate external partners, including other scientific societies and associations, health advocacy groups, foundations, public agencies, government entities, educational institutions, corporate entities, information technology service providers, etc.
- Building a model of iterative planning into the fabric of SfN governance and management processes, incorporating regular evaluation of the impact and success of initiatives and activities and periodic revisiting programs.

MESSAGE FROM

Chapter 2

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THE PRESIDENT

Throughout this past year, our leadership focused on new ways to strengthen neuroscience in accord with our mission while adjusting to a constantly changing landscape for science and the Society for Neuroscience.

As our annual meeting continued to grow, the Society began to identify new opportunities to ensure that we serve our members effectively. In an era of open access that impacts the traditional subscription revenue model and may provide new avenues for publishing, we are considering several possibilities to maintain the excellence and viability of *The Journal of Neuroscience*. At a time of very difficult funding, especially for new investigators, we are developing new ways to strengthen professional

development opportunities and new arguments for increasing biomedical research budgets. We are testing better methods to educate the public, Congress and policymakers about the benefits and promise of neuroscience research. These efforts will have a direct impact on our ability to do neuroscience and to make the advances in medical knowledge so important for patients.

Several major developments occurred during the past 12 months that will contribute to meeting the challenges ahead. They include a

new approach to our advocacy efforts which we hope will help improve prospects for robust federal funding of biomedical research and help ensure the future of the field. New emphasis was placed on the importance of science education aimed at high school teachers. The dedication of our new SfN headquarters

building near Capitol Hill in Washington, DC will facilitate these initiatives as well as the continued updating of our strategic plan.

This annual report includes articles on topics that explain some important intersections of science and society: developments in understanding how the brain ages, and the neuroscience of meditation. Also included is a history of neuroscience article recognizing the achievements of Santiago Ramón y Cajal and Camillo Golgi, who shared the 1906 Nobel Prize in physiology or medicine. One of Cajal's drawings of neurons is the subject of a huge mural on the stairway wall at the center of our new headquarters building in Washington, DC.

The building and mural are symbols of the Society's mission, strengths and progress. Dedicated in May, the new headquarters provides an optimum venue for Society meetings and for the staff to work. It also represents an additional diversification in SfN's investment strategy, and will provide a revenue stream to carry out member initiatives during times of financial uncertainty. The materials used in the design and construction of SfN's space are in

THE STRATEGIC PLAN CONTINUES TO EMPHASIZE
OUR CORE MISSION AREAS OF SCIENTIFIC EXCELLENCE,
PROFESSIONAL DEVELOPMENT, SCIENCE ADVOCACY,
AND PUBLIC EDUCATION.

keeping with our members' values to protect the environment.

These developments point to the centrality of science in all of SfN's programs, a theme echoed anew during the past year as Society leaders crafted an updated strategic plan. It continues to emphasize our core mission areas of scientific excellence, professional development, science advocacy and public education. It also details 11 interconnected strategic issues that SfN will address in "an ongoing, dynamic planning effort to insure the future of the Society, its constituents in neuroscience, and the beneficiaries of their endeavors." The issues include enhancing the member experience; and strategies for dealing with SfN's growing international members, professional development, diversity, the annual meeting, open access publishing, National Institutes of Health (NIH) funding, science policy, public education, financial reserves, and committee realignment. Attention to these issues in the coming years will strengthen neuroscience, and result in improved treatments for patients.

While SfN charts these important issues, nowhere were the seeds for improved health more evident than at Neuroscience 2005 in Washington, DC, which attracted nearly 35,000 attendees, the largest ever to attend a Society annual meeting, and 16,720 abstracts, also a record number. Under the leadership of President Carol Barnes, a highlight of the meeting was the first "Dialogues between Neuroscience and Society" lecture delivered by the Dalai Lama of Tibet, which was heard by 14,000 attendees and guests.



OUR NEW STRATEGIC PLAN SAYS, "AT A TIME WHEN NEUROSCIENCE RESEARCH IS YIELDING DYNAMIC ACHIEVEMENTS, THE PUBLIC HAS INSUFFICIENT AWARENESS OF THIS INFORMATION." THE PLAN URGES "A SHIFT IN THE PROFESSIONAL CULTURE OF SfN MEMBERS TO EMBRACE AND ACTIVELY PARTICIPATE IN PUBLIC COMMUNICATION, OUTREACH, AND EDUCATION..."

Also new in 2005 were “Meet the Expert” workshops during which scientists offered participants a behind-the-scenes look at techniques in which they have special expertise.

Maintaining the excellence and viability of *The Journal of Neuroscience* is the other key element of the Society’s scientific mission. In keeping with current trends in scientific publishing, in January, 2006, the Society changed *The Journal’s* policy to allow unrestricted access to articles six months after publication. A group of experienced SfN members was appointed by Council to explore several initiatives to raise awareness about the implications of open access and other publishing challenges.

In March, Rep. Patrick Kennedy (D-RI), a longtime advocate for the Society and mental health research, made a statement on the floor of the House of Representatives acknowledging the importance of neuroscience research, and



recognizing Brain Awareness Week and SfN’s publication *Brain Research Success Stories*. Throughout the year, SfN leaders and staff made trips to Capitol Hill to make the case for stronger NIH funding. The difficult funding climate also highlighted the need for neuroscientists to develop long-term grass roots efforts to personally lobby their respective congresspersons in their home office in a non-partisan way to educate them about biomedical research, peer review (which is under attack) and the importance of neuroscience to the health of Americans and the economy.

The strategic plan’s NIH funding strategy calls for the Society to “reach out to industry leaders who exert considerable influence in Washington, DC, based on a shared agenda in support of the economic importance of research in the US and global economy.” Following this directive, the Society’s Council in May voted to explore enlisting the support of top executives of pharmaceutical, biotechnology and scientific instrument firms on behalf of robust budgets for NIH and the National Science Foundation (NSF). One goal is to encourage a group of business leaders to advocate to the Administration, Congress, and public during the next budget cycle using new and effective arguments for strong funding of these agencies. Another is to develop a white paper outlining the benefits of biomedical research.

During the past few years, it became increasingly clear to many of us that, as our new strategic plan says, “at a time when neuroscience research is yielding dynamic achievements, the public has insufficient awareness of this information.” The

plan emphasizes the need for “a shift in the professional culture of SfN members to embrace and actively participate in public communication, outreach, and education about neuroscience.”

To enhance the quality of information in schools and elsewhere, the Society embarked on several initiatives that will educate the public about neuroscience. One includes improving and expanding Brain Awareness Week activities; another encourages participation in our Neuroscientist Teacher Partner Program, which provides an opportunity for members to work with K-12 teachers. Our Public Education & Communication Committee contributed to the American Society for Cell Biology’s special summer journal issue on neuroscience education.

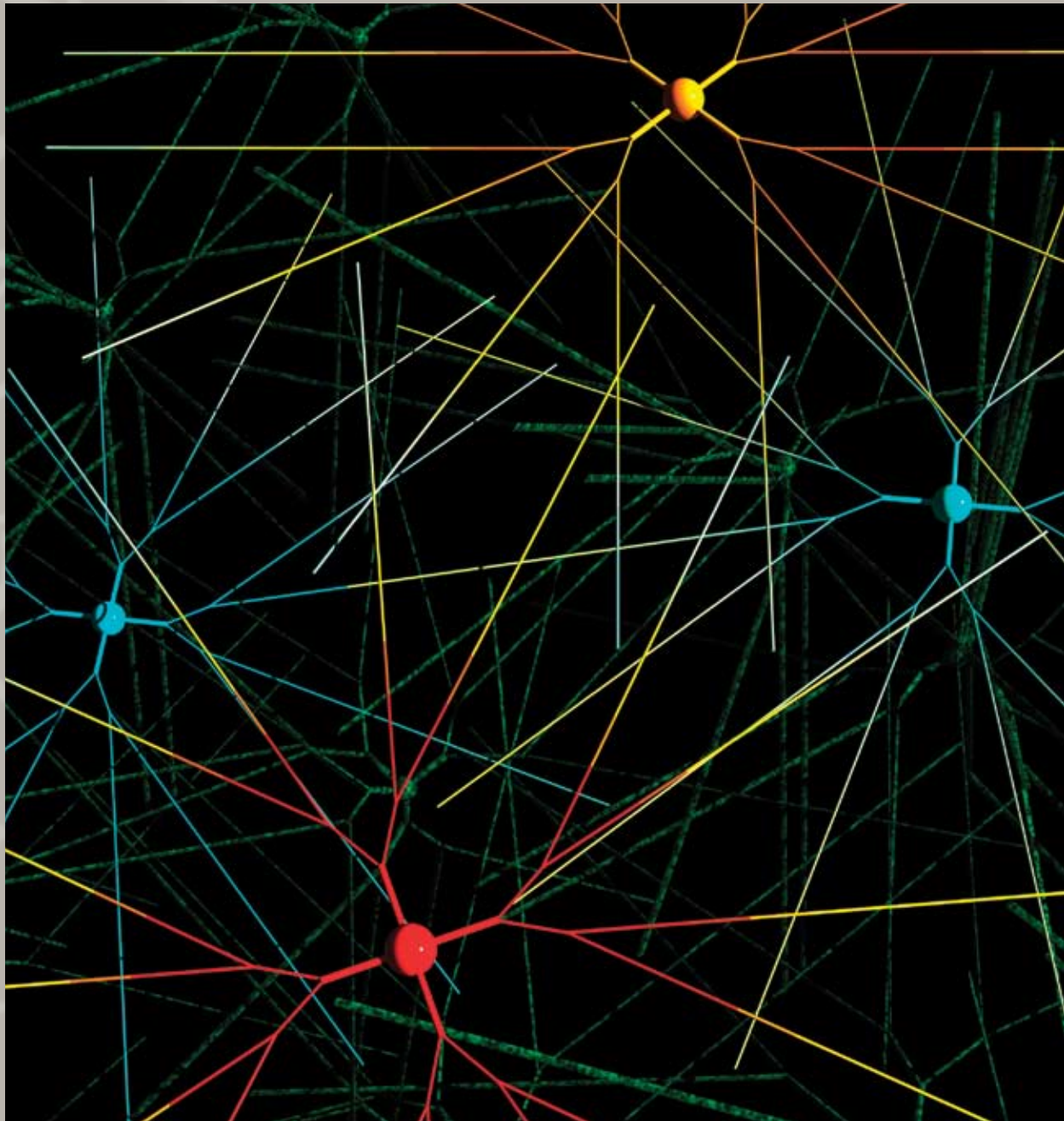
I invite you to examine this report and the hard work carried out by the SfN Council, committees, and staff. We hope that you will actively participate with your ideas and energy to further the mission of SfN and make neuroscience a successful endeavor in our society. All of us are excited about the promise of neuroscience, and we are determined to successfully meet the challenges faced by the field as we work towards achieving advances in human health that are clearly within reach.

Sincerely,

Stephen F. Heinemann, PhD
President

THE NEW

Chapter 3



STRATEGIC PLAN

Maintaining the Radar Screen

SfN's Council formally adopted in February a new strategic plan identifying the Society's key future challenges and strategies to achieve its goals.

The overall framework of the new strategic plan is consistent with the four mission areas identified in 2002, when the Society's first strategic plan was created. These include advancing the understanding of the brain and nervous system; providing professional development activities, information, and educational resources for neuroscientists; promoting public information and general education about the nature of neuroscience discoveries and their implications; and conveying to legislators and other policymakers the scientific and societal value of neuroscience research.

The new plan affirms SfN's dedication to identifying and serving the changing needs of its members and, more broadly, the field of neuroscience. The plan also constructs a platform to explicitly spell out SfN's organizational values, formally cementing its commitment to promoting diversity; exploiting new technologies to benefit members; nurturing strategic relationships with external partners; building a model of governance that incorporates regular evaluation of Society initiatives; and fulfilling its mission in a socially, economically, and environmentally responsible way.

These values will continue to be inherent in SfN's annual meeting, peer-reviewed journal, and other established programs responsible for the Society's growth and success. Building on these successes, new initiatives as outlined in the strategic plan represent a renewed focus on changing member needs, and the recognition that SfN and the field of neuroscience are closely linked.

To monitor such changing needs, the Society, with the guidance of Council, maintains a "radar screen" of issues, opportunities, and challenges for the coming years. These concise statements outline strategic issues demanding the Society's attention, and are the first step in the planning process. The goal is to build consensus and alignment in increments: First agree on what needs to be addressed and then on the best way to do it.

A strategy sketch provides a brief description of the initiatives that are underway to address each issue on the radar screen. In some cases, the best outcome or the best way to achieve a certain outcome is not readily apparent. These strategies are exploratory and might be considered learning endeavors.

The strategies outlined are as follows: Enhancing the Member Experience, International, Professional Development, Diversity, Annual Meeting, Open Access Publishing, Federal Research Funding, Science Policy, Public Education, Financial Reserves, and Committee Realignment.

Sidebars providing information about these strategies—including desired outcomes and guiding principles—are located throughout the *Annual Report*. Readers are invited to provide feedback that might contribute to a fine-tuning of these strategies as SfN's leadership revisits them over the next few years. To this end, the Society has established a Web forum for feedback, which is accessible at <http://forums.sfn.org>.

The Society believes that iterative and continuous planning will help ensure that the benefits and potential of neuroscience research are realized for people the world over.

Neuroscience of Aging

At a time when the older U.S. population is growing faster than ever — particularly those older than age 85 — neuroscience is being challenged more than ever to help the elderly lead healthy, productive lives. The number of people living past age 65 has increased dramatically during the last century, and the U.S. Census Bureau estimates that by 2050, nearly 19 million Americans will be age 85; 20 percent of Americans will be 65 or older.

This changing landscape for overall health will require new tactics to cope with increased numbers of people who must cope with brain disorders associated with old age, such as mild memory loss or the devastation of Alzheimer's disease (AD). Luckily, most people won't experience such profound decline in learning and memory, but many will experience some degree of memory impairment.

Neuroscientists are now discovering where the line lies between the loss of memory or cognition due to normal aging, and a loss that signals something far more ominous. They are focusing on anatomical and imaging studies to uncover the brain areas most affected by aging, and what happens to nerve cells as they grow older. Studies have revealed at least half a dozen

genes for AD, and new opportunities now exist for developing the first effective therapies, including the use of stem cells and vaccines. At the same time, exercise and other lifestyle factors have been identified that can help healthy adults maintain cognitive function as they age.

During the middle of the last century, scientists believed that our decline in cognition was connected to the loss of neurons. Studies in the 1950s that measured brain weight and neuron density told researchers that compared with the brains of younger people, older brains had many fewer neurons in the hippocampus and other areas of the brain responsible for learning, memory and emotion.

While it's true that, on average, our brain slowly loses a small percentage of its weight as we age, this doesn't fully explain the effects

of aging or the reasons behind age-related dementia.

By the 1980s, scientists began to get a more accurate picture of the aging brain by applying new technologies in image analysis that allowed them to count more objectively the

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number of neurons. In a revolutionary discovery, neuroscientists found that the widespread loss of neurons in the hippocampus and neocortex



was not normal aging, but rather a specific sign of AD.

Recent research has revealed that, rather than any universal pattern of changes in the brain's neurons, age-related cognitive decline seems due more to small changes in neuronal branching and the number of connections in specific regions of the brain. Scientists also now know that although some normal changes occur as our brains age, they are small compared to the large changes seen in older people who develop severe memory deficits, dementias, like AD, and other memory or cognitive impairments.

AD remains among the most disturbing diseases to an aging America. "Given our aging population, the magnitude of Alzheimer's disease as a national health problem is steadily increasing," notes the latest *Progress Report on Alzheimer's Disease* from the National Institute on Aging (NIA). "This makes the disease an urgent research priority."

Scientists estimate that 4.5 million people currently have the disease, and if population trends continue and no preventive treatments become available, more than 13 million will have the disease by 2050. AD devastates not only the patients and their families, but also

delivers an enormous economic impact, with current annual costs of caring for patients estimated at close to \$100 billion.

Certainly, research has made tremendous progress in the last several years in understanding the disease. For example, up to now most scientists regarded plaques in the brain, a hallmark of AD, as a cause behind cell death and damage to neurons. Recent research, however, is changing that paradigm. Now some scientists see the tangles and plaques as the end results of AD's ravaging effects on the brain.

Advances in magnetic resonance imaging (MRI) technology allow researchers to probe the hippocampus and its separate regions. Functional MRI studies have found that in normal, healthy older people, areas of the hippocampus responsible for short-term memory are not as active as in healthy, younger adults. Similar studies have shown that the hippocampus of people with Alzheimer's is even less active.

Research has shown that another memory-related brain structure, the amygdala, is less active in older adults than in younger adults when responding to negative emotional stimuli, yet it is just as active when responding to positive emotional stimuli, such as viewing

the face of a friend or loved one. These and similar experimental results offer proof that, as we age, our brain can become more adept at controlling our emotions.

Among the more promising paths of research comes from advances in genetic studies of AD. The first studies conducted during the late 1980s revealed genetic markers for the disease-causing beta-amyloid precursor protein, which leads to plaque formation, on chromosome 21. Later, genes known as presenilin 1 and presenilin 2 were identified on other chromosomes. Mutations in those two genes are seen only in the relatively rare cases of familial AD that usually occur early in life, although those individuals have symptoms indistinguishable from the more common, later-life form. For the larger population with AD, those whose disease begins after age 60, researchers have identified a chromosome 19 gene, apolipoprotein E, which increases susceptibility. A variant, ApoE4, increases the risk of Alzheimer's disease and heart disease, but it is not a dominant gene. Strangely, some individuals have two copies of ApoE4 yet remain healthy at advanced ages. Introducing the ApoE4 and presenilin genes into the mouse leads to beta

amyloid deposits in the brain and, in some cases, memory deficits.

This and other new information has opened several avenues of research that scientists hope may lead to treatments that will alleviate or forestall the ravages of this devastating disorder. One recent project found a vaccine that uses a special type of amyloid-beta substance capable of triggering the body's immune system to produce antibodies that reduced the build up of amyloid-beta plaques in the brains of mice and led to improved learning and memory. Researchers hope to further refine this novel vaccine and prepare for possible human trials.

Some neuroscientists now think that it may be possible to slow or, in some cases, possibly even reverse the effects of age, including slowing the ravages of dementia. Until very recently, scientists thought that the brain was incapable of healing itself after injury from trauma or disease. Research has shown, however, that certain areas of the brain contain neural stem cells, which, under the right conditions, can divide and produce new neurons and supporting glia cells. Many researchers continue to study the mechanisms and properties of this process, called neuro-

genesis, in the hope that it could lead one day to highly effective treatments.

In studies supported by NIA, for example, researchers have found a protein called Notch on the surface of neural stem cells. When inactive, Notch has been found to

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significantly hinder brain development in mice. In other studies, the same protein has also been found to play an important role in communication among nerve cells, leaving scientists to believe that further studies of

Notch could lead them to new therapies for learning and memory deficits.

Fortunately, not all cognitive abilities decline as we age, research shows. Recent neurobiological studies have found that healthy individuals lose far fewer nerve cells in the brain as they

age than previously thought. And although some areas of the brain may shrink or become less active, other areas may compensate. Imaging studies have found that elderly individuals often show greater activity in regions of the brain that are less active in younger adults and that are usually more active only in older, high-performing adults.

Researchers also have observed other older individuals perform in the same range in tests of mental ability as people many decades younger than themselves.

Studying these older, healthy, high-performing individuals is of growing interest to scientists.

What can science learn from them, and how much of that knowledge could scientists use to improve the lives of those elderly people who experience a decline or, more crucial, those who suffer dementia? Genetics certainly plays a role, but, according to growing evidence, so do environmental and lifestyle factors. So even though you can't pick your grandparents, there's still a lot you can do.

Epidemiological studies conducted in many countries and across many cultural and socioeconomic backgrounds have found that three important factors help predict how well healthy adults maintain cognitive function as they age: mental activity, physical activity, and social engagement. Other important factors include sound nutrition, sufficient sleep, stress management, treatment of mood or anxiety disorders, good vascular health, physical exercise, and avoidance of head trauma.

Clearly, much work remains in order to fully understand the array of factors affecting brain aging. The findings to date suggest that as the 21st century unfolds, neuroscience will learn critical knowledge about how to maintain healthy brain function into old age, either through intervention or prevention.

THE ANNUAL

Chapter 4

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MEETING

Advancing Scientific Excellence

Neuroscience 2005, the Society's 35th Annual Meeting, was its largest ever, drawing more attendees than any city-wide convention ever held in Washington, DC. ■ The city's new convention center welcomed nearly 35,000 registered attendees from November 12-16. ■ More than 16,500 abstracts—up from 16,054 in 2004—focused on the latest findings in neuroscience.

The most widely attended of the meeting's lectures, heard by a crowd of approximately 14,000, was the Dalai Lama's lecture, "The Neuroscience of Meditation." It was the first in a series of "Dialogues between Neuroscience and Society" talks that foster an exchange between the public and the neuroscience community. The Dalai Lama spoke about commonalities between eastern contemplative practices and contemporary science, about areas of engagement between the two disciplines, and about the importance of recognizing the relationship between ethics and science.

Another addition to the annual meeting lineup was the "Meet the Expert" series of workshops, which provided participants a behind-the-scenes look at factors influencing an expert's work. Each of the three 90-minute breakfast sessions featured an informal, informative dialogue between expert and audience. The success of the program event, in its pilot

year, resulted in an expanded lineup of five experts for Neuroscience 2006.

The Public Lecture was given by Marilyn Albert of Johns Hopkins University. Titled "The Aging Brain: Predictors of Optimal Function," Albert's lecture described studies identifying lifestyle factors that can predict a person's mental acuity, physical activity, and social involvement during the aging process. She also showed an SfN video featuring her mother as an example of healthy brain aging.

Mahlon DeLong of Emory University, Paula Tallal of Rutgers University, and Andrew Schwartz of the University of Pittsburgh presented the presidential symposium, "From Discoveries in Neural Circuit and Plasticity Mechanisms to Innovative Treatment Strategies." DeLong discussed the basis and surgical treatments for Parkinson's disease, dystonia, and other movement disorders. Tallal spoke about intervention for learning and language problems. Schwartz

discussed approaches for developing neural prosthetics for spinal cord-impaired patients.

The presidential special lectures featured neuroscientists from around the world. Yasushi Miyashita of the University of Tokyo spoke about the neural mechanisms of cognitive memory. Edvard Moser of the Norwegian University of Science and Technology discussed how spatial information is computed in topographically organized neuronal networks in the parahippocampal cortices. Ranulfo Romo of the Universidad Nacional Autónoma de México shared recent studies providing valuable insights into how cortical areas integrate efforts to solve vibrotactile discrimination tasks.

Beverly Davidson of the University of Iowa organized a short course about vectors and RNA interference for neuroscience applications. A second short course, organized by Tyrone Cannon of the University of California, Los Angeles, addressed the genetics of cognitive neuroscience phenotypes.



ANNUAL MEETING STRATEGY

THE ISSUE:

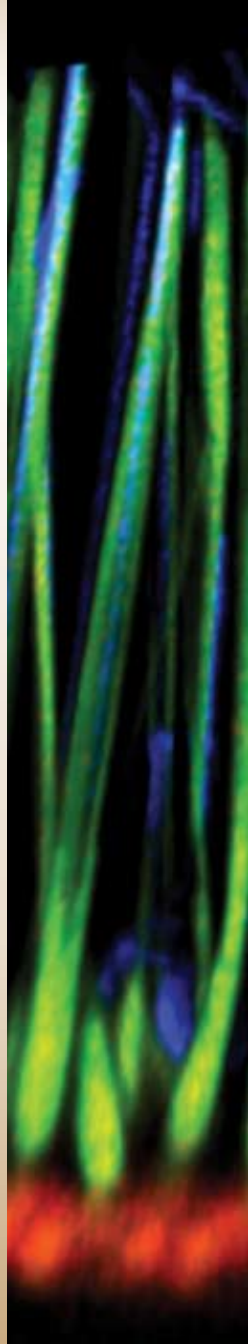
The rapidly expanding and increasingly complex body of neuroscience knowledge challenges the Society to recognize and react to changes quickly enough to sustain the scientific excellence of the meeting.

WHAT NEEDS TO HAPPEN?

In coming years, the meeting might have to accommodate more than 35,000 attendees and 18,000 abstracts. SfN must improve its ability to organize vast amounts of content.

HOW DO WE MAKE IT HAPPEN?

A working group to be named by Council will consider long-term meeting strategies. Staff and the Program Committee will explore ways to expand the capacity of the meeting within its existing framework. An improved system of reviewing and updating the meeting's list of themes and topics will provide better documentation for groupings and changes.



A special reunion celebration honored 25 successful years of the Neurobiology of Disease Workshop (NDW). Past faculty, organizers, and attendees gathered to celebrate the accomplishments and advances that have resulted from their work. Ed Kravitz, the founder and initial catalyst behind the NDW, was honored for his contributions.

The 2005 NDW, organized by Emanuel DiCicco-Bloom of Robert Wood Johnson Medical School, focused on autism. In a full day of workshops, speakers used live presentations and patient videos to show basic scientists the range and early manifestations of autism spectrum disorders. Experts then discussed the neuropathology and abnormalities in brain growth and functional networks. The final session considered the challenges of creating animal models of this uniquely human behavioral condition. NDW participants formed smaller discussion groups in which they explored current and future research strategies. Autism and neuroscience investigators joined the discussions.

The Social Issues Roundtable, moderated by Stephanie Bird, focused on the use of stem cells in neuroscience research. Marie Csete of Emory University, Fred Gage of the Salk Institute, Mahendra Rao of the National Institute on Aging, Patrick Taylor of Children's Hospital Boston, and William Hurlbut of Stanford University and the President's Council on Bioethics talked about the ethical, legal, and policy implications of this issue, and offered advice on discussing it with journalists and the public.

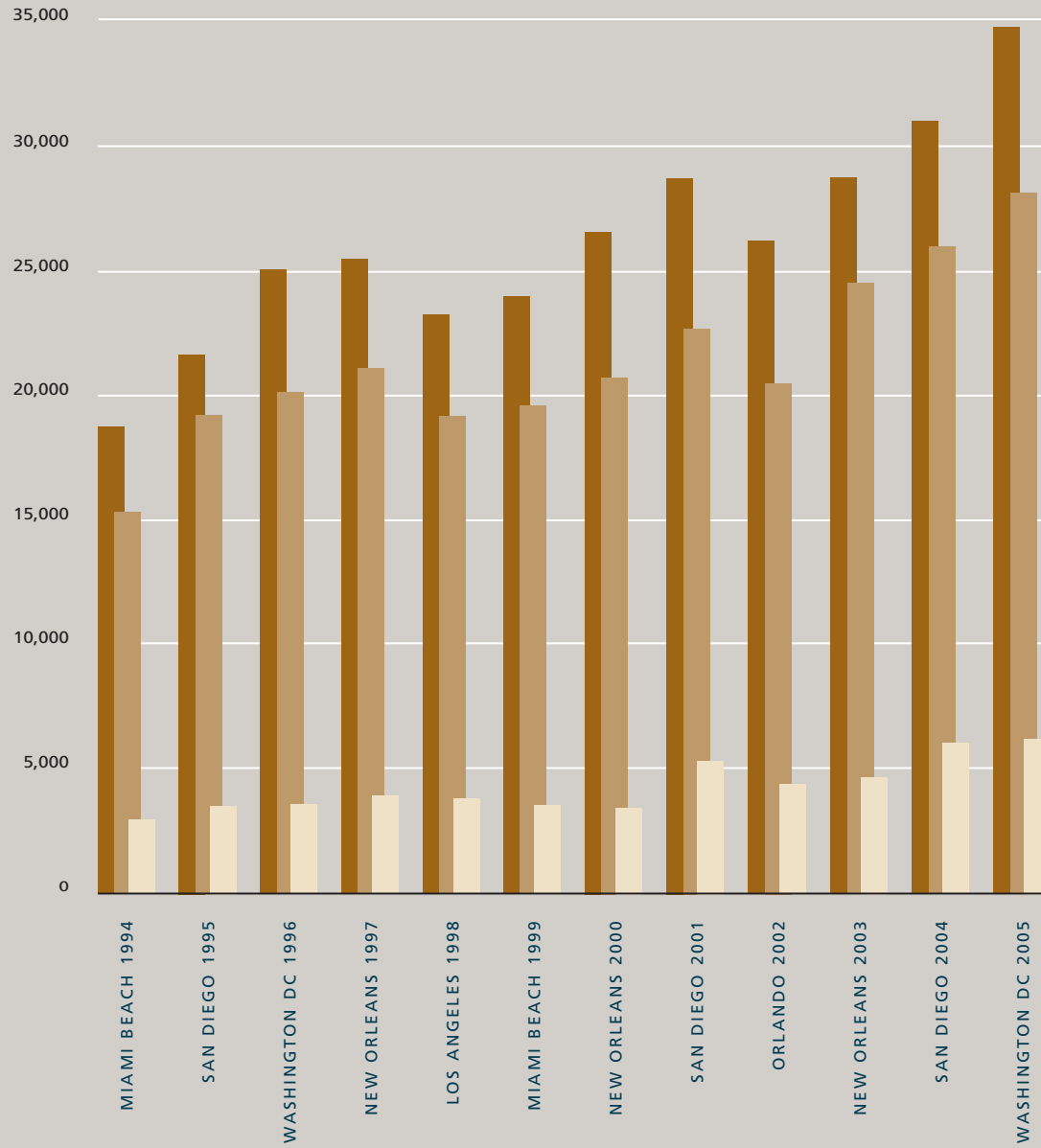
The annual meeting generated 254 original news stories and almost 3,200 reprints in print

and electronic publications. This was a marked increase from the 591 reprints generated by Neuroscience 2004. Syndicated articles featured research findings on the placebo effect, the influence of childhood maltreatment on adult mental health, a test for Alzheimer's disease, autism, and the link between sugar and stress.

Reflecting the Society's commitment to supporting scientific excellence through its annual meeting, SfN instituted some changes for 2006. For Neuroscience 2006, SfN used the Online Abstract Submission and Invitation System developed by Coe-Truman Technologies to facilitate the abstract submission, sessioning, and itinerary planning processes for the meeting. This new system incorporated advanced software technologies and approaches, facilitating the handling of presenters and attendees registrations and more than 14,200 abstracts.

Further, the schedule for Neuroscience 2006 eliminates evening lectures to encourage and facilitate more opportunities for socializing and networking. SfN's Program Committee recommended the change based on member feedback. All scientific content will be complete, following a Presidential Lecture to be given from 5:15 p.m. to 6:15 p.m. each day, except Wednesday. In the past, SfN-sponsored socials were scheduled only on Mondays and Tuesdays. This year, these socials will also be held on Sunday evening.

By making the annual meeting a showcase of the best neuroscience findings, the Society contributes to the rapid translation of research to improve health and cure disease, and the understanding of human behavior and cognition.



SOCIETY FOR NEUROSCIENCE
ANNUAL MEETING

PREVIOUS NEUROSCIENCE
ANNUAL MEETING ATTENDANCE

- Total Attendance
- Scientific Attendance
- Nonscientific Attendance

History of Neuroscience

100th Anniversary of Cajal and Golgi Sharing the Nobel Prize

The three-story mural hanging in the central stairwell of SfN's new office space honors the legacies of Santiago Ramón y Cajal and Camillo Golgi on the 100th anniversary of their sharing of the Nobel Prize for Physiology or Medicine in 1906 for their work on the structure of the nervous system.

The drawing upon which the mural is based first appeared as figure 844 in volume two, part two of Cajal's *Textura del Sistema Nervioso del Hombre y de los Vertebrados*, published in Madrid in 1904. The image is that of the six layers of the mouse neocortex, labeled A through F in Cajal's hand.

Golgi invented a revolutionary method of silver staining referred to as the "black reaction," which uses a weak solution of silver nitrate to create a dark deposit on the soma, axon, and dendrites, and provides clear pictures of individual nerve and cell structures. This method allowed Cajal to observe neurons and render them in drawings that provided the foundation of modern neuroanatomy. They showed that the nervous system is composed of individual nerve cells rather than—as was widely believed at the time—a web of continuous elements. Cajal speculated that these neurons communi-

cated with each other via junctions later called "synapses."

Cajal was born in 1852 in Petilla de Aragón, a village in northeast Spain. He graduated from the medical school of Zaragoza in 1873 before being drafted as a Spanish army medical officer and sent to Cuba. Upon his return to Spain in 1881, he became a professor in Valencia, and later in Barcelona and Madrid. He served as director of the Zaragoza Museum and the National Institute of Hygiene, and founded the Laboratorio de Investigaciones Biológicas, which was later renamed the Cajal Institute.

Among his many honors, Cajal was made an honorary Doctor of Medicine by the Universities of Cambridge and Würzburg, and an honorary Doctor of Philosophy by Clark University in Worcester, Mass. Over the course of his distinguished career, he published more than 100 books and

scientific works in French, Spanish, and German.

Cajal's work included detailed descriptions of nerve cell organization in the central nervous system, illustrated by his renowned drawings. He is often considered to be the "father of neuroscience," which was not recognized as a separate discipline until decades later. He died in Madrid in 1934.

GOLGI'S DISCOVERY OF THE BLACK REACTION

ALLOWED RESEARCHERS, FOR THE FIRST TIME, TO

VIEW THE PATHS OF NERVE CELLS IN THE BRAIN.

Golgi was born in 1843 in Corteno, a village in Northern Italy. He graduated with a degree in medicine from the University of Pavia in 1865, and continued to work in Pavia, at the Hospital of St. Matteo, until accepting the post of chief

medical officer at the Hospital for the Chronically Ill at Abbiategrosso in 1872. In 1875, he returned to the University of Pavia as professor of histology. In 1881, he was appointed to the chair for general pathology.

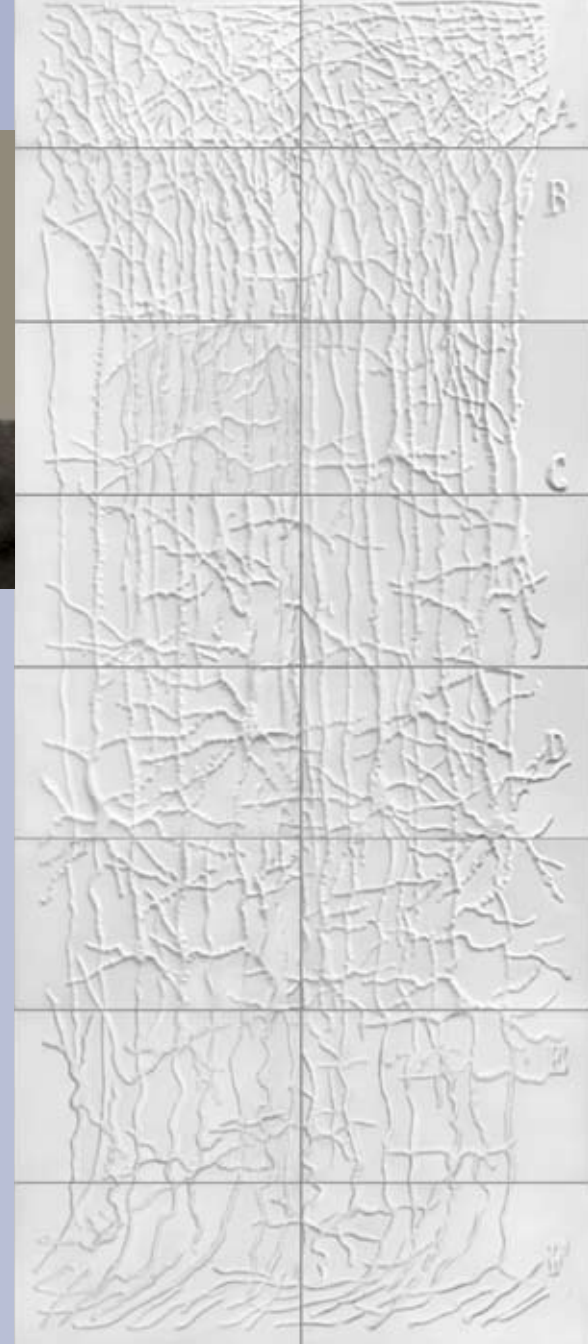
Golgi served as dean of the faculty of medicine, and, for a time, rector of the university. The Historical Museum at the University of Pavia has a hall dedicated to Golgi that houses more than 80 of his honorary degrees and awards. His many publications are collected in the *Opera Omnia*, the first three volumes of which were published in 1903 and the fourth, edited by his colleagues, in 1929.

Golgi's discovery of the black reaction allowed researchers, for the first time, to view the paths of nerve cells in the brain. His subsequent investigations further contributed to the understanding of nervous tissue's structure. He died in Pavia in 1926.

In planning its new headquarters space, the Society's Council wanted a large-scale image representative of neuroscience displayed in a prominent location. The architects at Envision Design conceived the idea of pulling the central staircase away from the wall to create a dramatic, continuous three-story space upon

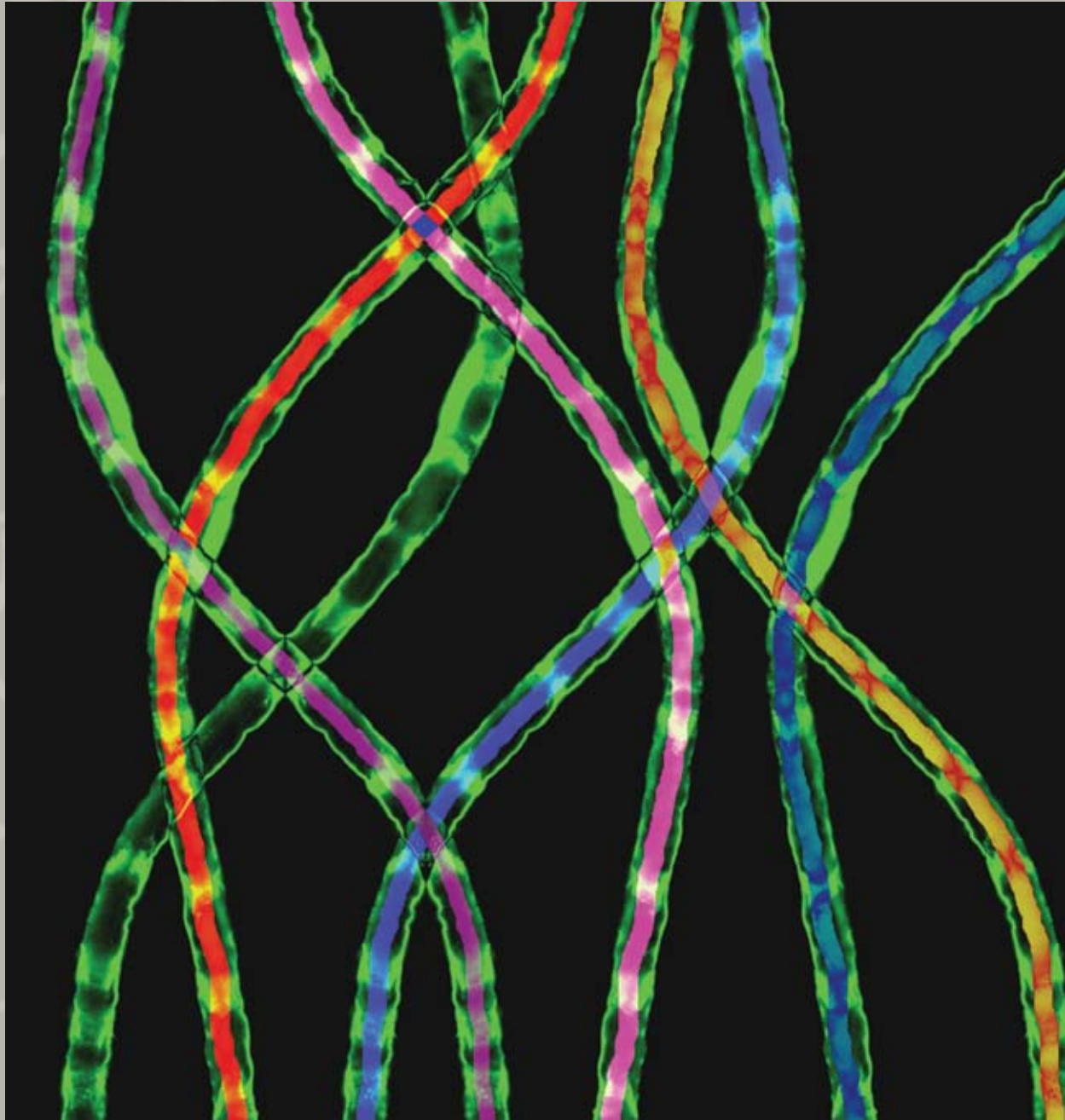


which artwork could be displayed. After Council approved the concept of deriving the image from Cajal's drawing, Envision proposed translating the sketch into a bas relief in wood, and contacted The Catholic University of America School of Architecture and Planning Design Collaborative to act as the project's fabricator.



THE JOURNAL OF

Chapter 5



NEUROSCIENCE

Changing with a Dynamic Field

The Society recognizes that it must continue to preserve and improve *The Journal of Neuroscience* as an important resource, and think carefully about how to best serve the needs of authors, members, the scientific community at large, and the public in an ever-evolving publishing environment. ■ Reflecting growth in the field of neuroscience, the number of submissions to *The Journal* continued to increase last year under the leadership of Editor-in-Chief Gary Westbrook. Submitted manuscripts numbered 5,492 in 2005, compared with 5,133 in 2004, an increase of about seven percent.

**THE JOURNAL PUBLISHES MORE RESEARCH
THAN THE NEXT FOUR LEADING NEUROSCIENCE
JOURNALS COMBINED.**

Published weekly since July 2003, *The Journal* publishes more research than the next four leading neuroscience journals combined. Its 2005 Institute for Scientific Information impact factor was 7.51, and it ranked first in the neurosciences

category in total number of citations.

On January 1, 2006, the Society changed *The Journal's* publishing policy to allow all readers unrestricted access to articles six months after publication. Previously, *The Journal's* access control policy allowed non-subscribers to view arti-

cles 12 months after publication. This new access policy is consistent with current trends in scientific publishing toward more quickly opening access to published scientific research, which is supported by Congress, patient advocacy groups, and NIH.

In May 2005, NIH implemented a public access policy that encourages NIH-funded investigators to make peer-reviewed final manuscripts available through the National Library of Medicine's free digital archive of journal articles, PubMed Central, within 12 months of publication. Soon after *The Journal* changed its publishing policy, SfN President Stephen Heinemann announced in the winter 2006 edition of *Neuroscience Quarterly* the availability of an online forum (accessible at <http://forums.sfn.org>) allowing members to discuss the change and voice thoughts about SfN's future publishing activities.

Further initiatives to raise awareness among and seek input from SfN members and journal authors are being explored by SfN's Publishing Open Access Group (POAG), an eight-member



OPEN ACCESS PUBLISHING STRATEGY

THE ISSUE:

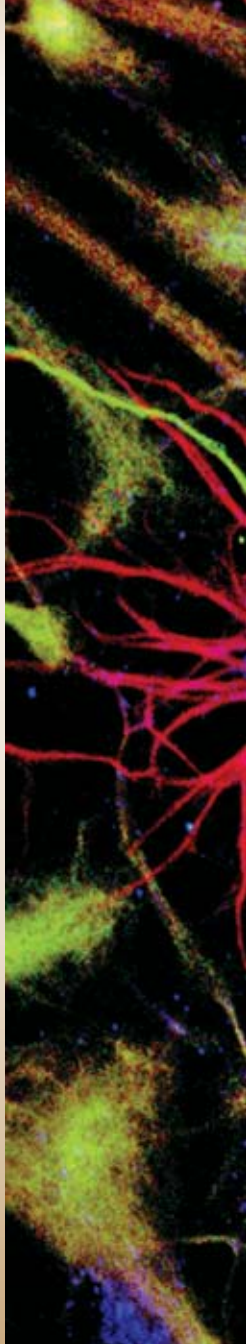
Changes in publishing models such as open access publishing, which is favored by many scientists, will force publishers to generate revenue in new ways and may result in researchers paying more to publish their work as library subscriptions either decline or are eliminated.

WHAT NEEDS TO HAPPEN?

SfN must be open to opportunities presented by open access and position itself as a thought leader in discussions about the future of science publishing while maintaining the ethos behind *The Journal of Neuroscience*.

HOW DO WE MAKE IT HAPPEN?

Already *The Journal's* access control policy allows open access six months after publication, and a forum has been established at www.sfn.org to involve members in the discussion. Council will look to the Publishing Open Access Group to generate long-term options. Staff and various committees will develop a viable business model to support SfN's future publishing strategy, and will continue to monitor changes in the field.



working group appointed by Council to examine the issue of open access publishing. POAG is taking a three-pronged approach.

First, *The Journal* is publishing commentaries by several leaders in the scientific and medical publishing community about the future of electronic journals.

Second, an online survey conducted in June 2006 asked members questions about planning the future of *The Journal*, including the advisability of continuing the print edition and the interest in adopting an open access business model. Consultants with the Kaufman-Wills Group analyzed the findings and POAG will be making recommendations to Council about future actions.

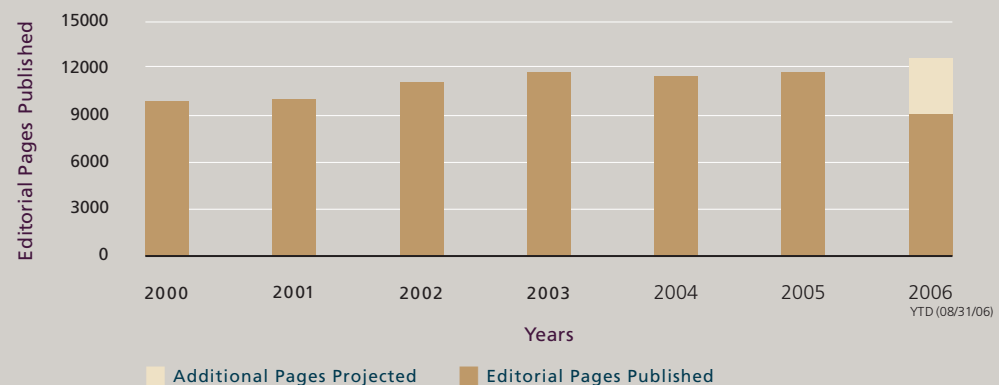
Third, a roundtable discussion at Neuroscience 2006 titled "(R)evolution in Scientific Publishing: How will it affect you?" will feature

panelists from the world of science and scholarly publishing to discuss the current challenges facing the field. Following the panelists' presentations will be an open discussion with questions and commentary from the audience.

Ample evidence suggests *The Journal* serves a tech-savvy audience that will provide SfN valuable feedback in charting a forward-thinking publishing strategy. In 2005, *The Journal's* Web site, www.jneurosci.org, received 14 million hits. Visitors to the site downloaded more than five million full-text files and more than three million PDF files.

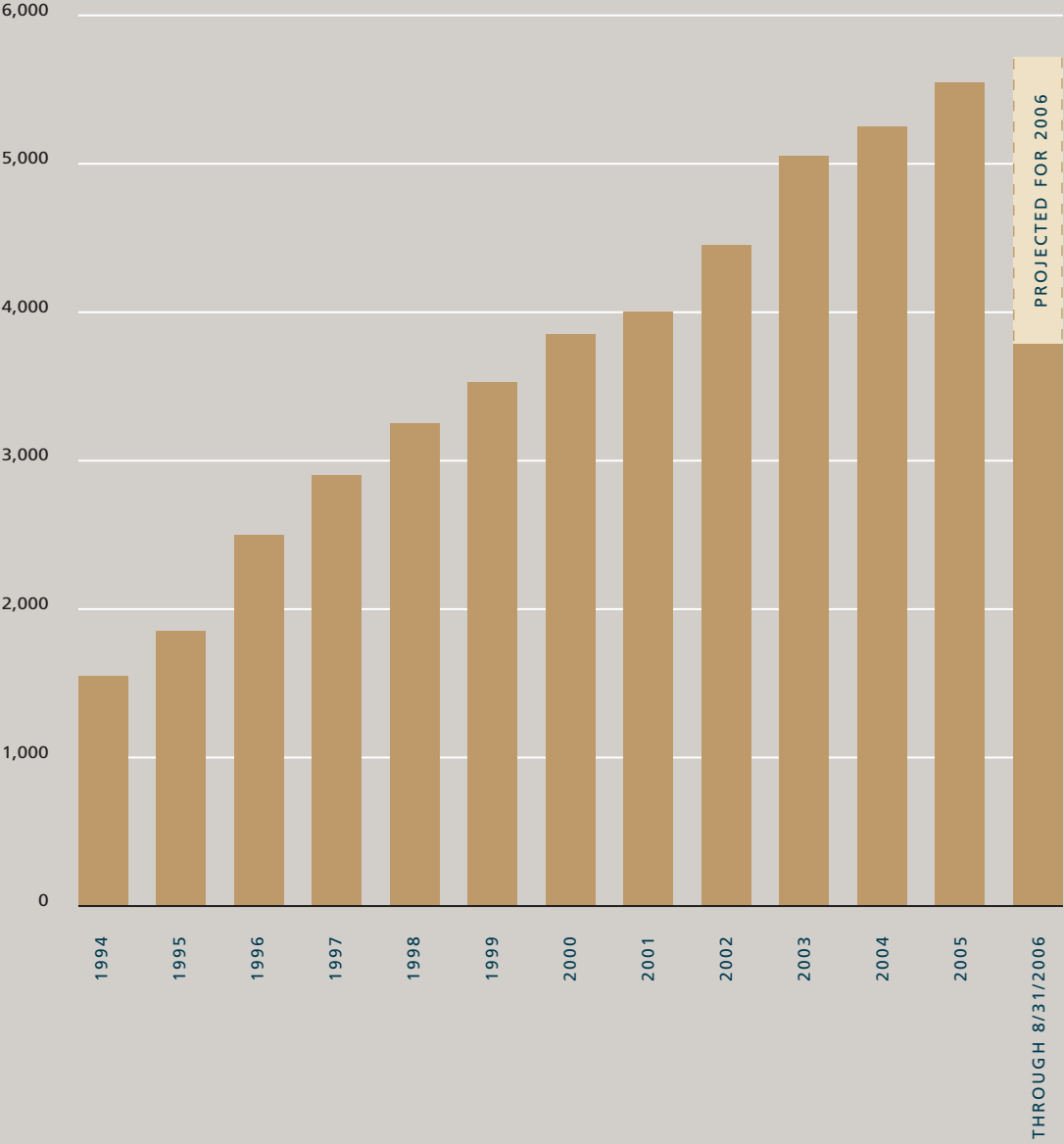
The Society intends to be at the forefront of discussions about the future of scientific publishing. New technologies and trends are reshaping the field, and *The Journal*, while maintaining its scientific excellence, will take full advantage of the opportunities these changes afford.

2000-2006 EDITORIAL PAGES PUBLISHED, *THE JOURNAL OF NEUROSCIENCE*



THE JOURNAL OF NEUROSCIENCE

TOTAL NUMBER OF SUBMISSIONS



Neuroscience of Meditation

As the Dalai Lama took the stage at Neuroscience 2005, many people in the audience wondered what a Buddhist leader could possibly say about neuroscience. What could this ancient tradition and contemporary neuroscience have in common? By the end of his talk, however, they understood what he and a growing number of neuroscientists already know: despite some fundamental differences, Eastern contemplative traditions and the practice of Western neuroscience share some common ideals. “Although Buddhist contemplative tradition and modern science have evolved from different historical, intellectual and cultural roots, at heart they share significant commonalities, especially in their basic philosophical outlook and methodology,” the Dalai Lama said.

One commonality is the attempt to understand, heal and enhance the human mind: Buddhists through formal, focused contemplation and scientists through rigorous study and experimentation. Clearly, scientifically documenting measurable positive effects would bolster meditation as a relatively simple method for humans to navigate and cope with a fast-paced, changing society laced with opportunities for high anxiety and depression.

Neuroscience has documented that the brain can change in response to physical experience and input from the outside world, a phenomenon known as neuroplasticity. So it was not unexpected that scientists would wonder whether the brain can change in response to purely internal, mental signals. Buddhists’ centuries-old tradition of meditation offers the opportunity to examine the power of sustained mental activity and attention to alter the physical matter of the brain.

Meditation literally means cultivation and describes a group of practices or techniques for deliberately focusing the attention or awareness of one’s mind. Its roots go back as far as humans have contemplated the world around them, but most formal meditation styles began thousands of years ago with Eastern religions and spiritual traditions.

Historically, meditation has been used to attain a higher spiritual goal. Today, meditation is used by many different cultures throughout the world for many reasons, not only religious purposes. These include enhancing mental capacity, increasing the mind’s ability to focus,

elevating mood, reducing anxiety and stress, coping with pain, and improving physical health and wellness.

CLEARLY, SCIENTIFICALLY DOCUMENTING MEASURABLE POSITIVE EFFECTS WOULD BOLSTER MEDITATION AS A RELATIVELY SIMPLE METHOD FOR HUMANS TO NAVIGATE...A FAST-PACED SOCIETY LACED WITH OPPORTUNITIES FOR HIGH ANXIETY AND DEPRESSION.



Currently, millions of people worldwide, including about 10 million in the United States, practice some form of meditation. Among the most researched forms are transcendental meditation, in which participants focus through repeating a word, sound or phrase, and the Buddhist technique of mindfulness meditation, both traditional and American secular versions.

In some Buddhist mindfulness meditation practices, participants focus all their attention on their breathing and the experience of breathing, creating a specific, non-judgmental awareness of present-moment sensory stimuli. The process is meant to lead participants to greater emotional balance and control — clearly topics of intense scientific interest. At the heart of these meditation practices lie two key techniques, the refinement of attention and its sustained application on the one hand, and the regulation and transformation of emotions on the other. “In both of these cases, I feel, there might be great potential for collaborative research between the Buddhist contemplative tradition and neuroscience,” the Dalai Lama said.

One recent, widely-reported study compared the brain activity of long-term Buddhist

meditation practitioners who had more than 10,000 hours of meditation experience with the brain activity of a group of healthy age-matched volunteers who had no experience in meditation but who were all taught meditation prior to the experiment. Participants were asked to generate a standard meditation state several times, alternating with a resting state. The type of meditation each group pursued involved voluntarily generating feelings of compassion and kindness toward all beings without thinking about anyone or anything in particular.

Before, during, and after the meditation practice, researchers recorded gamma band rhythms, brain impulses that are associated with higher mental activity, such as attention, learning, and conscious perception. They confirmed that the Buddhist monks had a higher level of gamma band rhythms than nonmeditators, suggesting that long-term meditation practice may change the baseline state of the brain. Researchers agree that this study represents just a beginning, and more studies are needed to determine the impact on the brain and the behavioral consequences of these changes.

Other research examined 76 Tibetan Buddhist monks who had attained meditative training ranging from 5 to 54 years. Using a visual illusion test called perceptual rivalry, researchers found evidence that meditation can increase attention skills and the ability to stabilize the mind. The results, the researchers said, support the claim that training in meditation can have a real and measurable effect on an individual's conscious state.

Meditation also can transform the structure and function of the brain, according to recent findings. In one of the studies, researchers at Harvard Medical School used magnetic resonance imaging to compare the brains of 15 people who had no meditation experience with 20 people experienced in the Buddhist mindfulness meditation. They found that brain regions associated with attention and sensory processing were thicker in the meditators than in the non-meditators. Researchers would like to know if this is a result of the meditation practice or if people with this trait are more attracted to meditation in the first place. A more pronounced thickness was seen in older meditators in an area of the brain's outer cortex, which is thought to be involved in integrating emo-

tional and cognitive processes. This, combined with the observation that increases in cortical thickness were proportional to the amount of time the participant had spent meditating over their lifetime, suggests to the researchers that regular practice of meditation might reduce normal age-related thinning of areas of the brain important for cognitive and emotional processing and well-being. It might also suggest that people with a thicker cortex are more inclined to stick with meditation because they find the experience more satisfying.

As advances in imaging technologies are helping researchers identify the areas of the brain that are most active during meditation, numerous other studies have demonstrated





SCIENTISTS FOUND THAT BRAIN REGIONS ASSOCIATED WITH ATTENTION AND SENSORY PROCESSING WERE THICKER IN THE MEDITATORS THAN IN THE NON-MEDITATORS.

the effectiveness of meditative interventions in treating hypertension, eating disorders, depression, and chronic pain. One research group at the University of Wisconsin found an association between meditation and an increase in immune system antibodies.

But while studies to date have provided glimpses of the meditation landscape, future efforts will attempt to assemble a more complete map of how our mind influences our body. A new longitudinal study, for example, will investigate how intensive meditation training over time can improve one's ability to regulate attention and emotion. Other new research will examine whether meditation can be a substitute for sleep, and whether or not stress-reducing techniques and mental exercises like meditation can not only improve but also prevent the cognitive decline that often occurs with aging.

Perhaps these and other efforts can help illuminate whether a thousands-of-years-old tradition has relevance in a contemporary society that seems often driven by values far from peace and quiet.

PUBLIC EDUCATION &

Chapter 6

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PROFESSIONAL DEVELOPMENT

Preparing for the Challenges of the Future

By nurturing public interest in neuroscience, and by providing opportunities for collaboration and career development for students and scientists, the Society has set in place key building blocks for the future that ensure the continued progress of the field.

In FY2006, the Society made great strides toward promoting public education about the implications of the latest neuroscience research. While continuing to reach out to the general public, SfN made special efforts to give K-12 teachers the resources needed to inspire the next generation of young neuroscientists. In addition, the Society provided professional development activities, information, and educational resources to today's neuroscientists to support them at all stages of their careers, and to encourage gender, ethnic, and geographic diversity in the field.

The fifth edition of *Brain Facts*, a 64-page primer on the brain and nervous system, has been in high demand from both members and the public. Within six months, demand for this new edition—which updates all sections and includes new information on neuroethics, brain development, addiction, neurological and psychiatric illnesses and potential therapies—exceeded an initial printing of 15,000 copies and required another printing. *Brain Facts* may

also be downloaded from the SfN Web site as a PDF file.

The Society's popular lay language series *Brain Briefings* and *Brain Research Success Stories* are distributed to educators and the public with news of important neuroscience advances. The CD *Neuroscience Resources for the Classroom* combines these two resources, *Brain Facts*, and additional neuroscience curriculum and resources appropriate for every grade. Now available for download through the SfN web site, the content on this CD gives teachers easy access to accurate information translated into classroom-appropriate activities.

To best reach science teachers who are in a position to convey neuroscience-related subjects as a part of their curriculum, SfN invests considerable resources to organize events and workshops at the National Science Teachers Association and the National Association of Biology Teachers national conferences. Science teachers are also the primary audience for the Neuroscience Education Portal, which is in the

preliminary stages of development. The portal will build on existing resources to offer educators a Web-accessible information hub and serve as a gateway to neuroscience education materials.

Brain Awareness Week (BAW) was celebrated worldwide March 13-19. Scientists in 28 of the United States and in many countries around the world, including Colombia, Egypt, Nigeria, Poland, and Turkey, joined with the public in a series of events to increase awareness about the brain. SfN improved its Web site that provides resources to individuals and groups sponsoring BAW events. The Society participated in several BAW events in the Washington, DC area, including the National Capital Area Brain Bee. SfN President Stephen Heinemann conducted presentations at Alice Deal Junior High School in Washington, DC.

At the annual meeting, Nobel Laureate Eric Kandel and Colin Blakemore joined SfN's then-president Carol Barnes and past president Bruce McEwan to present "Brain Awareness Week: The Next Decade" at a meeting of over



PROFESSIONAL DEVELOPMENT STRATEGY

THE ISSUE:

Members have expressed interest in SfN expanding its professional development initiatives at and beyond the annual meeting.

WHAT NEEDS TO HAPPEN?

Committee and staff structure must be organized to coordinate and execute the expansion of professional development activities, including an improved mentoring program and more targeted skills training. Activities should address member needs as determined through research.

HOW DO WE MAKE IT HAPPEN?

This strategy will be coordinated with planned membership research and analysis, which will include an assessment of professional development needs. Results of this assessment will help shape a professional development plan. SfN staff will work with a consulting group and relevant committees to develop the plan for presentation to Council.



400 members to explore the responsibility of scientists as public educators. This was followed by a lively reception and poster session. Also at the meeting, NIH hosted a “Building Neuroscientist-Teacher Partnerships” workshop, in which attendees shared ideas on how to forge more effective relationships between researchers and K-12 teachers, students, and schools.

The public education efforts coordinated by SfN are helping to foster an informed, pro-research environment in classrooms, and to nurture public interest in neuroscience. The Society has also invested considerable efforts in assisting its members through an expanded program of professional development activities.

In October 2005, SfN launched NeuroJobs, a year-round online job bank to which SfN members may post their resumes at no cost. The Web site connects members with potential employers, and serves neuroscientists at all stages of their careers. NeuroJobs supplements the career center at SfN’s annual meeting.

The Society recognizes the importance of encouraging diversity in the field, and also the challenges of doing so as the global neuroscience community expands. The Committee on Diversity in Neuroscience (C-DIN), the Com-

mittee on Women in Neuroscience, and the International Affairs Committee work closely to ensure representation of women, minorities, and international neuroscientists in SfN’s programs, activities, and awards.

THE PUBLIC EDUCATION EFFORTS COORDINATED BY SfN ARE HELPING TO FOSTER AN INFORMED, PRO-RESEARCH ENVIRONMENT IN CLASSROOMS, AND TO NURTURE PUBLIC INTEREST IN NEUROSCIENCE.

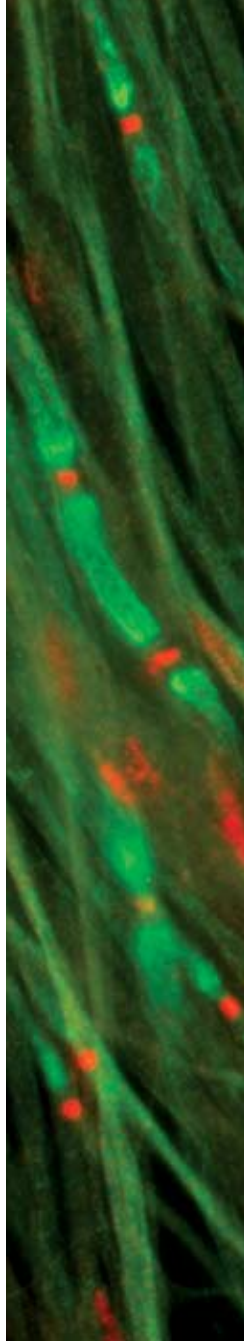
In FY2006, eight new scholars were selected for the Neuroscience Scholars Program (NSP). The NSP is overseen by C-DIN and funded through the National Institute of Neurological Disorders and Stroke. It is a three-year fellowship program providing SfN membership benefits, mentoring, career enrichment, and networking opportunities for pre- and post-doctoral minority students in neuroscience. It also provides travel awards for these students to attend the Society’s annual meeting.

The Ricardo Miledi Program for Neuroscience Training, in its second year, offered a four-week course to 15 top neuroscience students

from Latin America and the Caribbean. This year's course, "Analytical and Integrative Neurobiology," illustrated principles and approaches to the study of neurotransmission, and was held August 8 through September 6, 2005, at the National Autonomous University of Mexico, Juriquilla, Queretaro, Mexico. More than 90 students applied for the program, which is funded by The Grass Foundation.

Working together, the International Brain Research Organization (IBRO) Latin American Regional Committee and the joint International Affairs Committee/US National Committee to IBRO organized a two-week neuroscience school in Venezuela. Twenty-five students from six South and Central American countries participated in the course, "Brain-Environment Interactions." The first week of the course was held at the University of Zulia, Maracaibo, and the second week at the University of Merida, in the Venezuelan Andes. In July 2006, a course focusing on neural systems and behavior was held in Cape Town, South Africa.

The Society also offered special travel awards to support the participation of American, Canadian, and Mexican graduate students in the fifth Federation of European Neuroscience Societies Forum of European Neuroscience in Vienna, Austria. The awards honored outstanding graduate students nominated by their local chapters.



PUBLIC EDUCATION STRATEGY

THE ISSUE:

The public may be largely unaware that neuroscience research is currently yielding dynamic achievements.

WHAT NEEDS TO HAPPEN?

SfN must provide educators materials for the classroom that convey neuroscience-related information. Further, members need to embrace and actively participate in public communication, outreach, and education.

HOW DO WE MAKE IT HAPPEN?

Through partnerships with the education community, SfN will provide resources to teachers that enable them to translate and integrate current research and neuroscience content into classrooms. A neuroscience education portal will aid in this effort. Tools and initiatives will encourage members to participate in public education efforts.

DIVERSITY STRATEGY

THE ISSUE:

Inadequate numbers of minorities entering the field and a lack of proportional career development opportunities for women adversely affect diversity in neuroscience.

WHAT NEEDS TO HAPPEN?

Through its leaders, its publications, and its programs, SfN must articulate the importance of diversity, and encourage increasing attention to the number of females and under-represented minorities in the field at all levels.

HOW DO WE MAKE IT HAPPEN?

The Committee on Committees will increase outreach to segments of membership underrepresented in the Society's leadership structure. The committees on Diversity in Neuroscience and Women in Neuroscience will propose activities, programs, and endeavors (including training grants) to increase diversity. SfN's leaders will seek opportunities to understand the importance of these issues publicly and privately.

Chapter 7



ADVOCACY

Fighting for Sustained Support

At a time when federal funding failed to keep pace with biomedical inflation, the Society engaged in vigorous advocacy efforts to adjust to new political realities and help policymakers clearly understand the benefits and potential of neuroscience research. ■ In person, online, and in print, and with the help of like-minded organizations and groups, SfN engaged in a wide array of activities to ensure continued scientific progress and improved public health.

SfN leaders maintained a strong presence on Capitol Hill. Caravocchi Ruscio Dennis, the Society's legislative advisory firm, helped to analyze and navigate policy issues affecting biomedical research. Meetings with key legislators continue to be a critical part of SfN's advocacy strategy.

On March 15, 2006, SfN President Stephen Heinemann visited the offices of Rep. Susan Davis (D-CA), and Senators Diane Feinstein (D-CA) and Barbara Boxer (D-CA). He spoke about the importance of the peer review system and its merits for rewarding only the best and brightest. He also discussed the particular difficulty younger scientists might face in securing federal funding.

Joseph Coyle, an SfN past president and former chair of the Society's Government and Public Affairs Committee, met with Rep.

Patrick Kennedy (D-RI) on March 16 to discuss mental illness and the developing brain. Kennedy is interested in improving the connection between mental health services and primary care, Food and Drug Administration approval for medications that treat mental illness, and recent research in the field. During the course of the meeting, Kennedy introduced Coyle to Rep. Jim Ramstad (R-MN), who is involved with mental health parity legislation; Rep. David Obey (D-WI), ranking member of the House Subcommittee on Labor, Health and Human Services, Education and Related Agencies (L-HHS); and Ireland's Prime Minister Bertie Ahern, who encouraged collaboration on a project to reduce teen suicide rates in the US and Ireland. Kennedy also introduced Coyle to President George Bush, who was in the Capitol for a St. Patrick's Day event with the Prime Minister.

That evening, Kennedy made a statement on the floor of the House of Representatives acknowledging the importance of neuroscience research and recognizing Brain Awareness Week. A longtime advocate for the Society and a 2002 recipient of the SfN Public Service Award, Kennedy called attention to SfN's web site and to *Brain Research Success Stories*.

On March 29, Heinemann testified before the L-HHS subcommittee to ask for a five percent funding increase for the National Institutes of Health in FY07. He talked about the public health benefit resulting from federal funding of NIH research. As an example, he noted that delaying the onset of Alzheimer's disease by five years would save the US \$50 billion. Heinemann also raised concerns about the impact that reduced funding would have on young scientists, arguing that dwindling funds and late career



FEDERAL RESEARCH FUNDING STRATEGY

THE ISSUE:

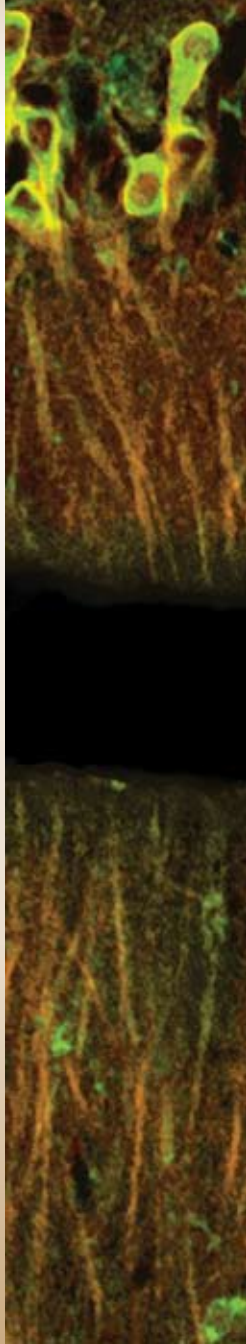
In this post-NIH-doubling era, basic science research faces unprecedented challenges to its legitimacy, priority, and value.

WHAT NEEDS TO HAPPEN?

The research community must improve the effectiveness of its advocacy efforts on behalf of funding for biomedical research based upon the principles of investigator-initiated research and peer review. Supportive coalitions must be broadened and strengthened.

HOW DO WE MAKE IT HAPPEN?

SfN will continue to work with existing coalitions such as the Campaign for Medical Research; and build stronger relationships with patient/disease groups and industry leaders. It will form strategic partnerships with key political leaders. Further, SfN will continue its advocacy training for neuroscientists.



starts will mean that biomedical research will lose innovative young minds to other fields. After his testimony, Heinemann met briefly with Rep. Ralph Regula (R-OH), chairman of the subcommittee.

Throughout the year, the Society distributed *Brain Research Success Stories*, two-sided newsletters highlighting neuroscience research conducted at NIH that has led to important health breakthroughs, to every member of Congress, more than 400 patient advocacy groups, and to leaders of other scientific societies. The 36 topics in the series cover the spectrum of neurological and mental health disorders, including autism, depression, dyslexia, addiction, stroke, and traumatic brain injury. By describing the many important advances brought about by doubling the NIH budget, the series illustrates the good that would come from continued adequate funding.

SfN continued its participation in like-minded coalitions such as the Joint Steering Committee for Public Policy (JSC) and the Campaign for Medical Research (CMR). Once a month, JSC hosted science briefings on Capitol Hill to educate legislators about hot-button research topics.

CMR met with congressional leaders about how best to advocate for NIH funding. SfN leadership met with G. Steven Burrill, a leading biotech venture capitalist and the new chair of CMR. They discussed his plans to increase involvement of biomedical industry leaders in the coalition's efforts.

As the animal rights movement continued its attempts to increase "personhood" rights for animals, the Society joined with influential partners to advance public understanding of the benefits of responsible animal research. In May

IN PERSON, ONLINE, AND IN PRINT, AND WITH THE HELP OF LIKE-MINDED ORGANIZATIONS AND GROUPS, SfN ENGAGED IN A WIDE ARRAY OF ACTIVITIES TO ENSURE CONTINUED SCIENTIFIC PROGRESS AND IMPROVED PUBLIC HEALTH.

2006, the Coalition for Animal Research Education (CARE) met in Washington, DC to discuss outreach strategies and ideas. Attendees considered different approaches to animal research advocacy, including a public relations campaign,

symposia at science teacher meetings, and letter-writing campaigns to the media. Organizations participating in CARE include SfN, States United for Biomedical Research, the Federation of American Societies for Experimental Biology, Society of Toxicology, American Physiological Society, and the American Association for the Advancement of Science. The meeting took place in conjunction with the National Association for Biomedical Research (NABR) Leadership Conference, also in Washington. SfN is working with NABR on projects to raise awareness in the legal community about the serious risks to medical research presented by efforts to bestow animals with human legal rights.

The American Brain Coalition (ABC), which the Society helped to organize a few years ago with the American Academy of Neurology and the American College of Neuropsychopharmacology, is an alliance of nearly 50 neurological and psychiatric organizations that represent patients, families, and professionals. SfN continued to provide staffing for the coalition's government and public affairs function. ABC is currently focused on NIH funding, animal research, chronic care, mental health parity, stem cell research, and access to care.

Advocating for neuroscience research is a cornerstone of the Society's mission. Sustained government funding will ensure continued breakthroughs that can help to improve the health of people everywhere.



SCIENCE POLICY STRATEGY

THE ISSUE:

This is a time of unprecedented questioning of the legitimacy, priority, and value of basic science research. Numerous public policy decisions, such as those concerning, federal funding for stem cell research, the use of animals in research, and the teaching of evolution in schools, affect the field of neuroscience. The Society should continue to identify issues of greater importance and devote more resources to them.

WHAT NEEDS TO HAPPEN?

The Society must prevent further erosion of research capabilities due to restrictive laws and regulations, in particular by vigorously supporting the responsible use of animals in research. SfN also must help medical professionals become more proactively involved in making patients aware of the role of animal research and the treatments they provide.

HOW DO WE MAKE IT HAPPEN?

The National Association for Biomedical Research alliance will continue to rebut legal arguments for the "personhood of animals." The Committee on Animals in Research and the Public Education and Communication Committee will explore new ways to incorporate advocacy positions into Society publications and educational materials. This strategy may include hiring consultants to provide assessments of animal rights arguments on "personhood," or to litigate local statute changes involving "personhood." It also will include creating and disseminating a resource containing information that every medical student should know about animal research. Other areas include collaborating with K-12 educators on advocacy priorities, and continuing to track the national, international and local debates affecting animals in research, the teaching of evolution, and the funding of stem cell research.

BUSINESS AND MEMBERSHIP

Chapter 8



HIGHLIGHTS

Celebrating Change

On February 1, SfN became the official owner of 1121 14th Street in northwest Washington, DC. ■ On February 21, SfN staff moved into their offices on the top three floors of the 11-story building, successfully capping off an effort to build a new headquarters in the nation's capital. ■ SfN and its architects, Envision Design, worked to ensure that the design of the building's interior creates a welcoming and comfortable environment for the Society's employees and visitors. ■ The new offices feature space for SfN Council and committees to hold meeting and events.

As SfN President Stephen Heinemann said during his remarks at its dedication ceremony, the new headquarters building "represents many

things to the Society," among the most important of which is its embodiment of "the vision and mission shared by all of SfN's leaders."

The design of the office space incorporates ecologically friendly building materials, such as those that are rapidly renewable, contain recycled content, and are locally manufactured. The space also is energy efficient. Because of the considered choices made in the planning and construction of the building, the Society will be able to minimize its environmental impact on an ongoing basis.

SfN celebrated its new headquarters on May 5 with an opening gala attended by approximately 150 guests, including past presidents, representatives from the Spanish and Italian embassies, SfN Council and committee chairs, NIH institute directors, and other leaders in the sciences. The evening's events began in the building lobby, where Heinemann welcomed attendees, telling them that the building represents the Society's long-term commitment to supporting

RECOGNIZING THE NEED TO UNDERSTAND NEW MEMBER EXPECTATIONS AND AFFILIATIONS, THE SOCIETY, IN ITS NEW STRATEGIC PLAN, CALLS FOR THE CREATION OF A FIVE-YEAR MEMBERSHIP GROWTH AND MEMBER SERVICES PLAN TO ENSURE THAT THE SOCIETY CAN SUPPORT FUTURE GROWTH WITHOUT NEGATIVELY AFFECTING MEMBER SATISFACTION AND ENGAGEMENT.



ENHANCING THE MEMBER EXPERIENCE STRATEGY

THE ISSUE:

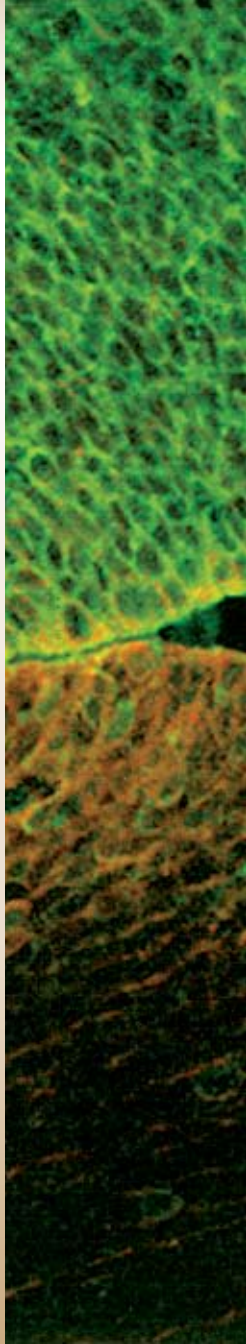
Accelerated growth in recent years has changed the face of membership in many ways, creating different member expectations and affiliations.

WHAT NEEDS TO HAPPEN?

The challenge is to develop and adopt strategies that are responsive to member needs, keeping in mind that the Society's goal is not growth for the sake of growth or financial gain, but for the sake of better accomplishing its mission.

HOW DO WE MAKE IT HAPPEN?

Research and data will be gathered and analyzed to generate recommendations for a membership enhancement plan. The plan will be reviewed by Council and SfN committees and staff.



neuroscience. Past President Carol Barnes, head of the Society's real estate committee, spoke about the environmentally responsible strategies behind the building's construction. Heinemann and Edward Perl, SfN's first president in 1969, then cut a ribbon, formally opening the building.

Attendees toured the ninth through eleventh floors during a reception in SfN's office space, and were able to see and learn about the three-story, three-dimensional mural hanging in the space's central stairwell. The mural, which Heinemann dedicated at the gala, is based on a drawing of the mouse neocortex by Santiago Ramón y Cajal, who shared with Camillo Golgi the Nobel Prize for Physiology or Medicine in 1906 (see page 20). The centennial of the Cajal-Golgi Nobel Prize was commemorated at the opening gala.

The festivities then moved two blocks away for a dinner at the Madison Hotel, where SfN President-Elect David Van Essen toasted the Society and the field of neuroscience. Teresa Ramón y Cajal Asensio, great granddaughter of Santiago Ramón y Cajal, spoke about her great grandfather's legacy, and thanked the Society on behalf of her family. Asensio, who is an oncologist and the fifth generation of physicians in the Cajal family, was joined at the event by her father, Santiago Ramón y Cajal Junquera, a professor of pathological anatomy in Madrid.

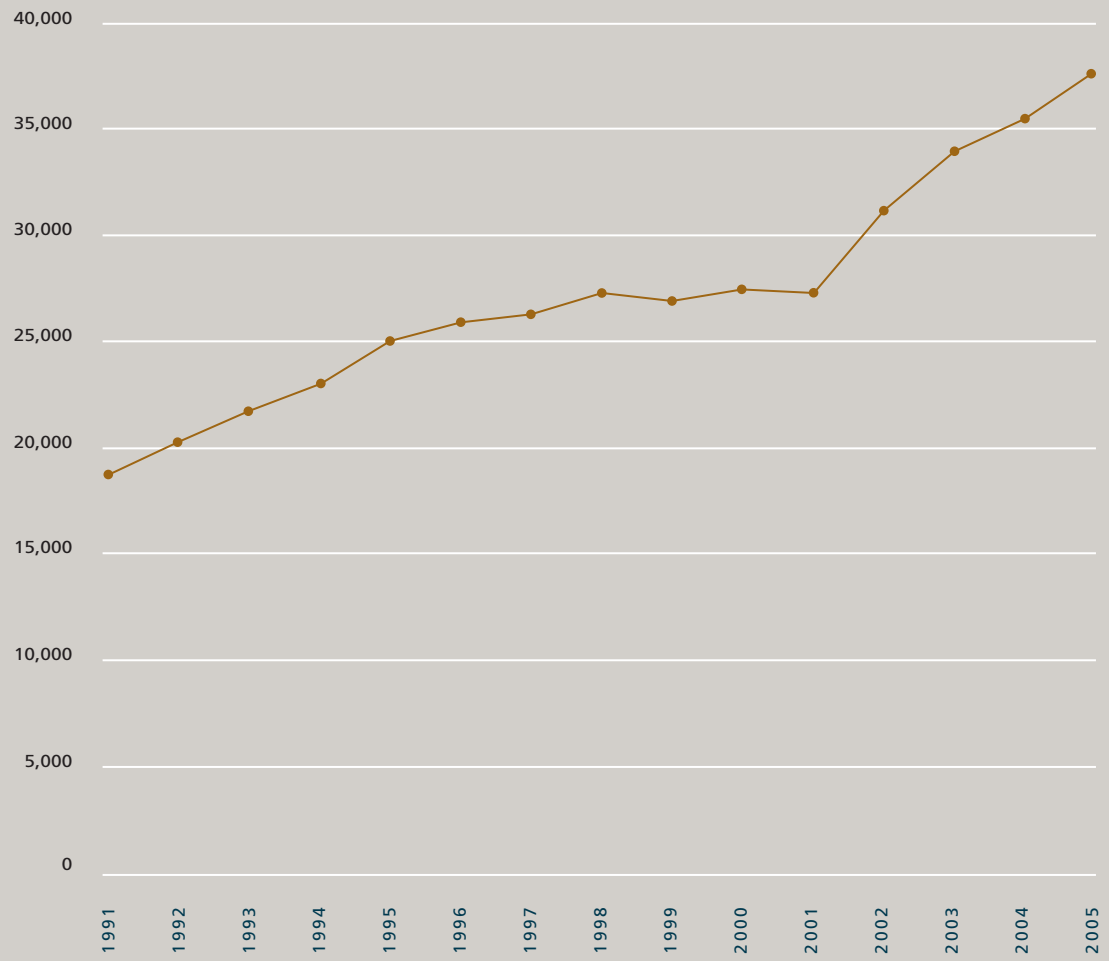
The Society's purchase of its own building is indicative of its vitality, which is shared by the field it represents. Neuroscience's dynamism has resulted in SfN's explosive growth—unmatched

by many associations in any field. In 2005, SfN attracted 5,512 new members for a total of 37,562—marking the fourth year in a row that membership has reached an all-time high. Membership is up more than 32 percent since 2001.

Several changes in membership policies have contributed to the increase, including rolling application deadlines, online applications, bylaws revisions that eliminated disparities between North American and international members, and reduced dues for underrepresented membership segments such as those in developing countries. With these changes, membership has also changed, and is now reflective of the global nature of neuroscience research. The Society is represented by 117 chapters, including 16 outside the United States, in Australia, Canada, Chile, Mexico, Turkey, the United Kingdom, and elsewhere.

Recognizing the need to understand new member expectations and affiliations, the Society, in its new strategic plan, calls for the creation of a five-year membership growth and member services plan to ensure that the Society can support future growth without negatively impacting member satisfaction and engagement. In short, after a period of unprecedented growth, it is time for SfN to reexamine how it can continue to most effectively serve its growing and increasingly diverse membership.

It is with this in mind that SfN Council voted to modify the Society's committee structure. The new committee alignment eliminates redundant responsibilities, improves oversight of programs not reflected by the previous structure,



SOCIETY FOR NEUROSCIENCE MEMBERSHIP

MEMBERSHIP GROWTH

1991-2005



IN OUR RADAR

COMMITTEE REALIGNMENT STRATEGY

THE ISSUE:

SfN's committee structure was not optimal to oversee the current and planned set of programs and activities as outlined by the new strategic plan.

HOW DID WE MAKE IT HAPPEN?

A new structure approved by the Executive Committee in December 2005 provides committees clearer mandates, less redundancy, and a reasonable scope of work.

WHAT NEEDS TO HAPPEN NEXT?

Continued attention will be given to evaluating and refining the changes that have been enacted.



better supports the new strategic plan, and provides for more effective committee interaction with Council.

At Council's direction, SfN's Committee on Committees (CoC) reviewed committee mandates for nearly a year, and solicited comments from committee chairs in August 2005. At Neuroscience 2005, the CoC presented a realignment proposal to Council and committee chairs. After receiving additional comments and suggestions from Council and chairs in November and early December, the CoC revised the proposal and presented it to the Executive Committee, which approved the realignment in December 2005.

Under the new structure, which created some new committees while eliminating or merging others, most committees have been grouped into "clusters" in an effort to increase their communication and coordination of activities. A steering committee consisting of committee chairs within each cluster will coordinate the activities of their cluster as a whole, and report to Council as a group.

The Financial Management Cluster consists of the Finance, Investment, and Audit com-

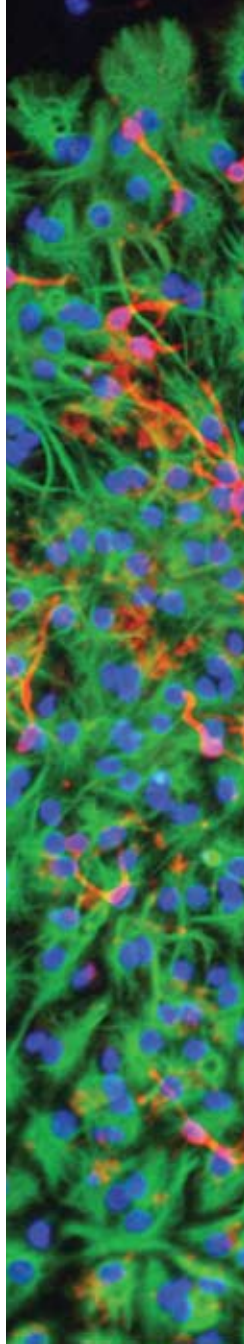
NEUROSCIENCE'S DYNAMISM HAS RESULTED IN SfN'S EXPLOSIVE GROWTH—UNMATCHED BY MANY ASSOCIATIONS IN ANY FIELD. IN 2005, SFN ATTRACTED 5,512 NEW MEMBERS FOR A TOTAL OF 37,562—MARKING THE FOURTH YEAR IN A ROW THAT MEMBERSHIP HAS REACHED AN ALL-TIME HIGH. MEMBERSHIP IS UP MORE THAN 32 PERCENT SINCE 2001.

mittees. The Information Cluster consists of the Information Technology and Neuroinformatics committees. The Membership Development and Benefits Cluster consists of the Membership and Chapters, and International Affairs committees. The Professional Development, Mentoring, and Diversity Cluster consists of the International Affairs Committee; the Committee on Diversity in Neuroscience; and the Committee on Women in Neuroscience. The Public Outreach Cluster consists of the Public Education and Communication Committee, the Committee on Animals in Research, and the Government and Public Affairs Committee. Because of the diverse nature of



its responsibilities, the International Affairs Committee participates in two clusters. Merging has created a couple of large committees, but their sizes will decrease in coming years as members conclude their terms and rotate off. In some cases, merged committees currently have co-chairs.

The new structure is a work in progress, meant to evolve along with the goals of the Society, and the CoC and Council will continue to seek feedback from committees and their chairs. To further this process, an annual goal-setting session between committee chairs and Council will take place each year at SfN's annual meeting.



N OUR RADAR

INTERNATIONAL STRATEGY

THE ISSUE:

The growing international component of the SfN membership increases both the opportunity and the urgency for SfN to develop a coherent approach to its international initiatives, especially neuroscience training in the developing world.

WHAT NEEDS TO HAPPEN?

Enhance collaborative relationships between SfN and international neuroscience societies through strategic partnerships and jointly sponsored activities as appropriate. SfN will join with international partners to positively influence the political, financial, and ethical factors in the US and around the world that enhance international scientific exchange. The Society also will look for ways to increase the prospects of students returning home to build science capacity in their country. This will ensure that promising young neuroscience graduate students and young scientists in developing nations receive encouragement, funding, and training opportunities.

HOW DO WE MAKE IT HAPPEN?

A needs assessment will identify training and development needs and opportunities. SfN will investigate third-party funding options to provide more intensive training courses outside of the United States. The International Affairs Committee will consider and recommend initiatives such as "on-the-road" Neurobiology of Disease Workshops and a lab placement pilot program for young scientists from developing countries. SfN also will consider offering the very best of young developing world scientists who complete international training courses a subsequent opportunity to have a two- to three-month lab experience in an excellent laboratory with a small stipend to cover travel and living costs.

Chapter 9



HIGHLIGHTS

Securing Stability

The strong fiscal position enjoyed by the Society for Neuroscience is due to continuing vigilant internal oversight of, and continuing improvement in, its financial controls and systems to ensure they adhere to current best practices for nonprofit financial management. ■ This year, the Society moved into its new headquarters building in Washington, DC—an 11-story testament to past prudent financial planning and management. ■ The new headquarters building will provide an entirely new revenue stream that will help protect Society programs in this era of budget deficits and frozen funding for biomedical research.

Gelman, Rosenberg & Freedman audited the Society's financial operations for the fiscal year beginning July 1, 2005, and ending June 30, 2006. The auditor's opinion letter and the audited financial statements are included later in this section. Fiscal year 2006 marks the second fiscal year cycle spanning the time between July 1 and June 30. The change was made to place the annual meeting closer to the beginning of the fiscal year, helping staff to more accurately forecast year-end expenditures and revenues early in the fiscal period. Also, this new schedule helps to improve future-year budgeting, which now occurs annually after the annual meeting for the next fiscal year.

On February 1, SfN became the official owner of 1121 14th Street, NW, near Thomas

Circle. SfN occupies the top three floors and will rent out the remaining eight. Already, two tenants have signed leases, and SfN's leasing team is in active talks with several other interested parties. The building was completed on time and on budget at a total acquisition cost of about \$32 million. The purchase was financed with a combination of a standard commercial mortgage through Bank of America locked in at record-low interest rates and \$12 million in tax-exempt bonds issued by the District of Columbia on behalf of SfN.

According to projections, the building is expected to begin generating a positive cash flow within two years. Owning a building in one of the nation's strongest and most stable commercial real estate markets will put the Society in a

better position to manage existing programs and initiate new ones, and to control the long-term cost to members for annual dues, annual meeting fees, and *The Journal of Neuroscience*.

Membership dues are a major revenue source for the Society. SfN's incredible growth in recent years has created a membership that stands as the organization's greatest strength. Another crucial revenue stream is the annual meeting, which continues to draw significant attendance. Neuroscience 2005 in Washington, DC, was SfN's largest meeting ever, attracting almost 35,000 attendees. Registration fees, exhibitor fees, and other annual meeting fees, such as those for abstract submission, provide somewhat independent revenue streams even within the annual meeting revenues.



FINANCIAL RESERVES STRATEGY

THE ISSUE:

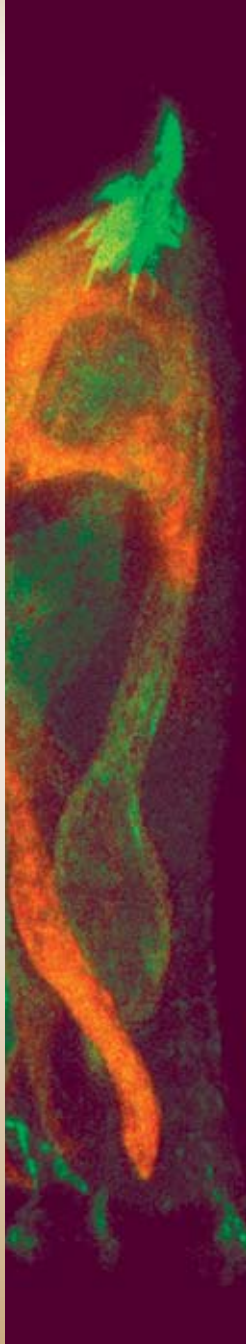
Uncertainties surrounding the future of scientific publishing combined with emerging opportunities for an expanded role in other areas warrant an increase in the desired financial reserves.

WHAT NEEDS TO HAPPEN?

Within five years, SfN aims to establish financial reserves adequate to cover all identified risks the Society might face in a given year. Money should also be set aside to generate income that would be dedicated to support changing scientific publishing activities and needs, including but not necessarily limited to *The Journal of Neuroscience*.

HOW DO WE MAKE IT HAPPEN?

Council has adopted a strategic reserve plan that includes funds associated with SfN's new building. Cash flow is monitored and available funds are moved to the investment portfolio. Using a line of credit helps optimize cash usage. The Finance and Investment Committees will update the reserve strategy based on investment returns, revenue and spending projections, and risk assessment.



The Society also generates revenue through *The Journal*, primarily from institutional subscriptions and author submission, publication, and reprint charges. In January 2006, in conjunction with *The Journal's* adoption of a six-month open access policy, submission fees were increased and page fees were changed to flat publication fees. The Society's new reserve strategy allows for using a portion of current and future reserves to generate income that could in the future be dedicated to supporting *The Journal*. This support will be crucial during a period when all publishers' business models are facing changes and experiencing challenges due to unfolding opportunities and risks associated with online publishing.

At the end of FY2006, investment reserves totaled \$27.4 million. Maintaining reserve funds at this level will help protect SfN from the volatile economic climate currently facing the nonprofit community as a whole. Augmentation of the reserves based on new financial risks is planned in coming years. The Society's current investment strategy is flexible and sector-based, allowing for the highs and lows of the economic landscape. Council, in consultation with the Society's Investment Committee, will provide the oversight necessary to successfully manage the reserves.

To further protect its interests, the Society took steps in FY2006 to update its business continuity plan to account for the new headquarters building and office space. Developed last year, this comprehensive plan ensures continued business operations and member services in the event of a disaster or disruption affecting the Society's

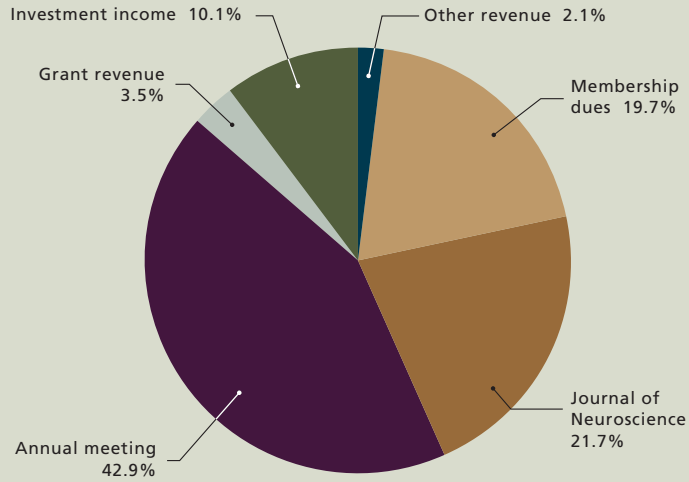
office, the Washington, DC, metropolitan area, or any annual meeting venue.

The Society continued its strong relationship with public, private, and corporate organizations. NINDS, for instance, awarded the Society a new five-year Research Education Grant to support the Neurobiology of Disease Workshop through 2010. NINDS has supported the workshop, which occurs prior to SfN's annual meeting, since its inception in 1980. NIMH also awarded a small continuing grant to fund the completion and close-out of the Minority Neuroscience Fellowship Program.

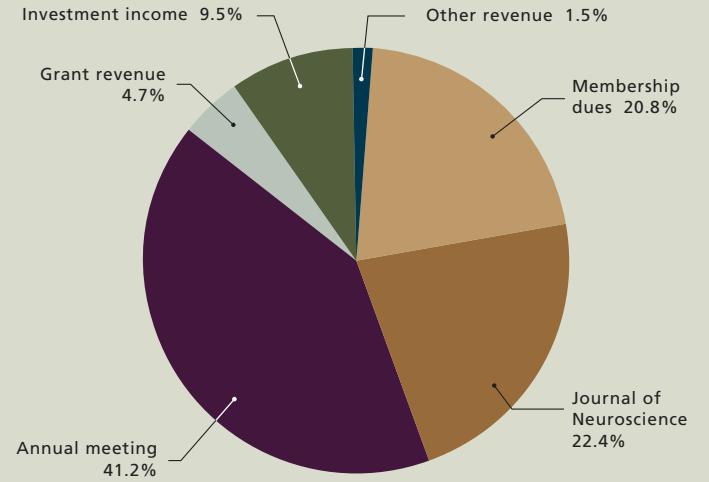
Funding from private foundations and corporations has increased each of the past five years, and in that time has increased from just under \$134,000 in 2001 to nearly \$414,000 in 2006. The Society has entered agreements with several corporations and non-profit organizations to sponsor educational programs at the annual meeting. This sponsorship adheres to the standards of the Accreditation Council for Continuing Medical Education.

CURRENT AND PAST FISCAL YEAR REVENUE AND EXPENDITURES BY ACTIVITY

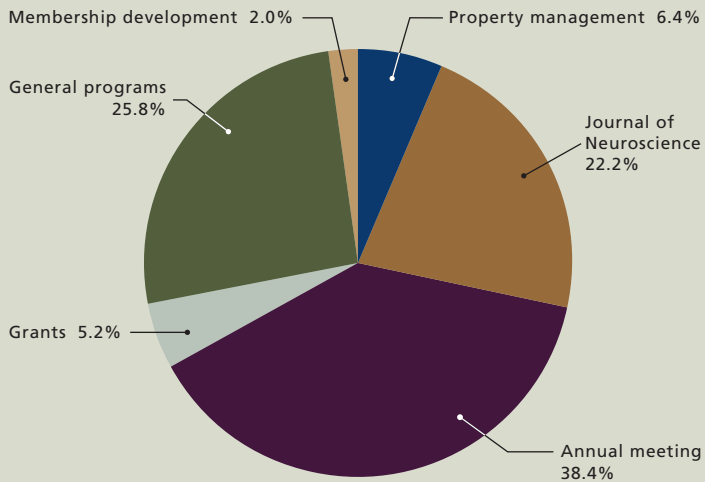
FY2006 REVENUE — \$22,737,465



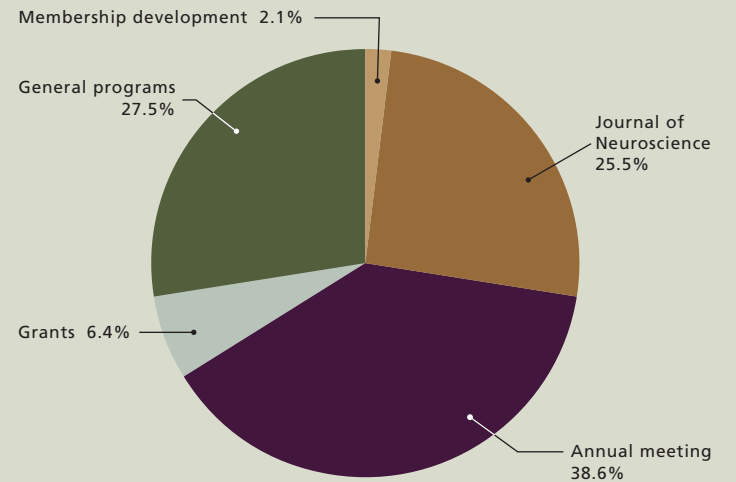
FY2005 REVENUE — \$21,252,832



FY2006 EXPENSES — \$19,560,338



FY2005 EXPENSES — \$17,494,462





GELMAN, ROSENBERG & FREEDMAN
CERTIFIED PUBLIC ACCOUNTANTS

INDEPENDENT AUDITORS' REPORT

To the Council
Society for Neuroscience and Subsidiary
Washington, D.C.

We have audited the accompanying consolidated statement of financial position of the Society for Neuroscience and Subsidiary (the Society), as of June 30, 2006, and the related consolidated statements of activities and change in net assets and cash flows for the year then ended. These financial statements are the responsibility of the Society for Neuroscience's management. Our responsibility is to express an opinion on these financial statements based on our audit. The prior year summarized comparative information has been derived from the organization's 2005 financial statements, which were issued by prior auditors, whose report dated September 9, 2005 expressed an unqualified opinion on those statements.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Society for Neuroscience and Subsidiary, as of June 30, 2006, and their consolidated change in net assets and their consolidated cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Gelman, Rosenberg & Freedman

August 18, 2006

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MEMBER OF CPAMERICA INTERNATIONAL, AN AFFILIATE OF HORWATH INTERNATIONAL
MEMBER OF THE AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS' PRIVATE COMPANIES PRACTICE SECTION

BALANCE SHEET *as of June 30, 2006*

ASSETS	2006	2005
Current Assets		
Cash and cash equivalents	\$1,899,137	\$344,046
Accounts receivable, net of allowance for doubtful accounts	515,245	788,038
Prepaid expenses	1,824,536	969,446
Deposits	-	23,833
Total current assets	4,238,918	2,125,363
Noncurrent Assets		
Other assets	-	685,410
Investments (Note 2)	27,391,292	26,206,139
Property, furniture, equipment and improvements, net of accumulated depreciation and amortization of \$1,142,819 and \$1,043,720 for 2006 and 2005, respectively (Notes 4, 6 and 7)	33,259,396	337,895
Deposits	3,892	-
Total noncurrent assets	60,654,580	27,229,444
Total assets	\$64,893,498	\$29,354,807
LIABILITIES AND NET ASSETS		
Current Liabilities		
Current portion of note payable (Note 6)	\$65,529	-
Accounts payable and accrued liabilities	2,201,066	1,915,147
Deferred revenue	5,087,117	5,029,056
Total current liabilities	7,353,712	6,944,203
Long-Term Liabilities		
Note payable, net of current portion (Note 6)	19,934,471	-
Bonds payable (Note 7)	12,000,000	-
Tenant deposits	17,584	-
Total long-term liabilities	31,952,055	-
Total liabilities	39,305,767	6,944,203
Net Assets — Unrestricted	25,587,731	22,410,604
Total Liabilities And Net Assets	\$64,893,498	\$29,354,807

See accompanying notes to consolidated financial statements.

STATEMENT OF ACTIVITIES *as of June 30, 2006*

	<i>Unrestricted</i>	
REVENUE	2006	2005
Membership dues	\$4,479,078	\$4,417,859
Journal of Neuroscience	4,930,637	4,763,314
Annual meeting	9,744,928	8,756,201
Grant revenue	797,882	990,028
Investment income (Note 2)	2,302,530	2,010,860
Other revenue	482,410	314,570
Total revenue	22,737,465	21,252,832
EXPENSES		
Program services:		
Journal of Neuroscience	4,342,145	4,467,084
Annual meeting	7,507,350	6,750,460
Grants	1,009,745	1,111,140
General Programs	5,051,033	4,806,379
Total program services	17,910,273	17,135,063
Supporting services:		
Membership development	392,676	359,399
Property management, net of related revenue	1,257,389	-
Total supporting services	1,650,065	359,399
Total expenses	19,560,338	17,494,462
Change in net assets	3,177,127	3,758,370
Net assets at beginning of year	22,410,604	18,652,234
Net assets at end of year	\$25,587,731	\$22,410,604

See accompanying notes to consolidated financial statements.

STATEMENT OF CASH FLOWS *as of June 30, 2006*

	2006	2005
CASH FLOWS FROM OPERATING ACTIVITIES		
Change in net assets	\$3,177,127	\$3,758,370
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Loss on disposal of equipment	43,098	351
Depreciation and amortization	589,380	287,091
Realized gain on investments	(1,532,324)	(1,318,823)
Unrealized loss on investments	540,224	-
(Increase) decrease in:		
Accounts receivable	272,793	(98,477)
Prepaid expenses	(855,090)	(475,591)
Deposits	19,941	-
Other assets	685,410	(685,410)
Increase (decrease) in:		
Accounts payable and accrued liabilities	285,919	1,031,363
Deferred revenue	58,061	578,465
Tenants deposits	17,584	-
Net cash provided by operating activities	3,302,123	3,077,339
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of investments	(2,277,651)	(19,006,548)
Proceeds from sale of investments	2,084,598	16,196,233
Purchase of property, furniture and equipment	(33,553,979)	(207,158)
Net cash used by investing activities	(33,747,032)	(3,017,473)
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds from notes payable	20,000,000	-
Proceeds from bonds payable	12,000,000	-
Net cash provided by financing activities	32,000,000	-
Net increase in cash and cash equivalents	1,555,091	59,866
Cash and cash equivalents, beginning of period	344,046	284,180
CASH AND CASH EQUIVALENTS AT END OF YEAR	\$1,899,137	\$344,046
SUPPLEMENTAL INFORMATION		
Interest Paid	\$544,009	\$3,459

See accompanying notes to consolidated financial statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND GENERAL INFORMATION

Organization

The Society for Neuroscience (the Society) is a nonprofit organization, incorporated in the District of Columbia. The primary purposes of the Society are to advance the understanding of the nervous systems, including the part they play in determining behavior, by bringing together scientists of various backgrounds and by facilitating the integration of research directed at all levels of biological organization; to promote education in the field of neuroscience; to inform the general public on the results and implications of current research in this area.

The 1121 Properties LLC (the LLC) is a limited liability company, incorporated in the District of Columbia on July 7, 2005. The primary purpose of the Company is to engage in the business of performing services as directed by the Society for leasing and maintaining the leases of offices and other retail space in the premises known as 1121 14th St. NW, Washington, DC, 20005. The accompanying consolidated financial statements reflect the activity of the Society and the LLC as of June 30, 2006. The financial statements of the two organizations have been consolidated because they are under common control. All inter-company transactions have been eliminated during consolidation. The LLC was not established until July 2005, therefore the summarized financial information for 2005 reflects solely the activities of the Society.

Basis of presentation

The accompanying financial statements are presented on the accrual basis of accounting, and in accordance with Statement of Financial Accounting Standards No. 117, "Financial Statements of Not-for-Profit Organizations".

Cash and cash equivalents

The Society for Neuroscience considers all cash and other highly liquid investments with initial maturities of three months or less to be cash equivalents.

At times during the year, the Society for Neuroscience maintains cash balances at financial institutions in excess of the Federal Deposit Insurance Corporation (FDIC) limits. Management believes the risk in these situations to be minimal.

Investments

Investments are recorded at market value. Unrealized gains and losses are included in investment income in the Consolidated Statement of Activities and Change in Net Assets.

Property, furniture, equipment and improvements

Property, furniture, equipment and improvements are stated at cost. Property, furniture, equipment and improvements are depreciated on a straight-line basis over the estimated useful lives of the related assets, generally three to ten years. The building and building costs are recorded at cost and are depreciated over 40 years. Expenditures for major repairs and improvements in excess of \$1,000 are capitalized; expenditures for minor and maintenance costs are expensed when incurred.

Income taxes

The Society for Neuroscience is exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code. Accordingly, no provision for income taxes has been made in the accompanying financial statements. The Society for Neuroscience is not a private foundation.

For the purpose of corporate tax reporting for the LLC, all financial transactions are reported under the Society's filing status.

Net asset classification

The net assets of the Society for Neuroscience are reported in two self-balancing groups as follows:

Unrestricted net assets include unrestricted revenue and contributions received without donor-imposed restrictions. These net assets are available for the operation of the Society for Neuroscience and include both internally designated and undesignated resources.

Temporarily restricted net assets include revenue and contributions subject to donor-imposed stipulations that will be met by the actions of the Society for Neuroscience and/or the passage of time. When a restriction expires, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the Consolidated Statement of Activities and Change in Net Assets as net assets released from restrictions. The Society for Neuroscience did not have any temporarily restricted net assets at June 30, 2006.

Revenue recognition

Membership dues and journal subscription revenues are recorded as revenue in the year to which the revenues related. Contributions and grants are recorded as revenue in the year notification is received from the donor. Contributions and grants are recognized as unrestricted support only to the extent of actual expenses incurred in compliance with the donor-imposed restrictions and satisfaction of time restrictions.

Contracts and grants received from departments or agencies of the United States Government considered to be exchange transactions (as opposed to contributions) are not recorded as revenue until related costs are incurred.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Accordingly, actual results could differ from those estimates.

Functional allocation of expenses

The costs of providing the various programs and other activities have been summarized on a functional basis in the Consolidated Statement of Activities and Change in Net Assets. Accordingly, certain costs have been allocated among the programs and supporting services benefited.

Reclassification

Certain amounts in the prior year's financial statements have been reclassified to conform to the current year's presentation.

2. INVESTMENTS

Investments consisted of the following at June 30, 2006:

	Cost	Market Value
U.S. Government obligations	\$3,654,360	\$3,584,737
Fixed Income	1,238,633	1,181,232
Equities	19,822,369	21,542,475
Cash	1,082,848	1,082,848
Total long term investments	\$25,798,210	\$27,391,292

Included in investment income are the following:

Interest and dividends	\$1,310,430
Unrealized gain (loss)	(540,224)
Realized gain (loss)	1,532,324
Total investment income	\$2,302,530

Investment management fees expense was \$185,039 for the year ended June 30, 2006.

The Society has resolved to use available funds and future earnings thereon to establish a strategic reserve pool that represents at least one year of expense budget. Based upon the intent of the Society, assets of the strategic reserve pool are classified as long term.

NOTES TO FINANCIAL STATEMENTS

3. LEASE COMMITMENT

During fiscal year 2006, the LLC entered into a five-year lease agreement with an organization (tenant) to lease office space within its premises. In addition, in August 2006 the LLC entered into a ten-year lease agreement with another organization to lease additional office space within its premises. The period of the leases range from June 2006 to January 2017.

The following is a schedule of future minimum rental payments to be received by the LLC:

Year Ended June 30,	Tenants
2007	\$331,816
2008	571,880
2009	586,177
2010	600,831
2011	665,852
Thereafter	2,118,474
	\$4,875,030

The Society's rent expense for the year ended June 2006, was \$431,607, which was for the space the Society occupied prior to moving into their own building.

4. PROPERTY, FURNITURE, EQUIPMENT AND IMPROVEMENTS

At June 30, 2006, property, furniture, equipment and improvements consisted of the following:

Land	\$7,150,400
Building	22,573,587
Leasehold Improvements	2,522,989
Furniture	1,076,033
Computer equipment	1,061,370
Other	17,836
	34,402,215
Accumulated depreciation and amortization	(1,142,819)
Total	\$33,259,396

Depreciation expense was \$589,380 for the year ended June 30, 2006.

5. DEFINED CONTRIBUTION PENSION PLAN

The Society maintains a defined contribution plan for employees meeting certain eligibility requirements. Eligible employees may contribute a percentage of their salary subject to the maximum contribution as per the applicable IRS regulation. The Society contributes 8% to 16% of participating employee's salary depending upon the percentage of contribution made by the employees. The Society's contributions to the plan for the year ended June 30, 2006 totaled \$488,073.

6. NOTE PAYABLE

On February 1, 2006, the Society entered into an agreement to purchase the property at 1121 14th Street, NW, Washington D.C. The purchase was financed through a \$20 million note payable from Bank of America, N.A. The note calls for interest only payments until the LLC reaches stabilization of tenant income. Estimated stabilization is April 2007. As of June 30, 2006 the note carries a fixed interest rate of 5.68%.

Future minimum principal payments are as follows:

Year Ended June 30,	
2007	\$65,529
2008	406,443
2009	430,139
2010	455,217
2011	481,757
Thereafter	18,160,915
	\$20,000,000

7. BONDS PAYABLE

On February 1, 2006, the District of Columbia agreed to issue its Variable Rate Revenue bonds (Society for Neuroscience Issue) Series 2006 in the aggregate principal amount of \$12,000,000 for the benefit of the Society through Bank of America, N.A. in order to finance a portion of the costs of acquiring, constructing, and furnishing the office building including parking garage located at 1121 14th Street, NW, Washington D.C. The Society agreed to pay the principal or purchase price of and interest on the bonds. The bonds carry a fluctuating rate of interest per annum that approximates the BMA index (a national index of seven-day floating tax-exempt rates). As of June 30, 2006, the interest rate was 4.0%. Principal payments shall begin March 1, 2030.

8. CONTINGENCY

Society for Neuroscience receives grants from various agencies of the United States Government. Such grants are subject to audit under the provisions of OMB Circular A-133. The ultimate determination of amounts received under the United States Government grants is based upon the allowance of costs reported to and accepted by the United States Government as a result of the audits. Audits in accordance with the provisions of OMB Circular A-133 have been completed for all required fiscal years through 2006. Until such audits have been accepted by the United States Government, there exists a contingency to refund any amount received in excess of allowable costs. Management is of the opinion that no material liability will result from such audits.

Photography Credits

Cover, background: Courtesy of PhotoSpin. Illustration by Lydia Kibiuk.

Page 1: This drawing, published in 1904, depicts the six layers of the mouse neocortex, labeled A through F, by Santiago Ramón y Cajal.

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Page 10: Rendering of a computational model of the medium spiny projection neurons of the nucleus accumbens during and after action potential generation. Each colored cell represents a different phase of the action potential, and the membrane potential in each compartment is represented in pseudocolor. The voltage peak of the action potential (in red, bottom cell) is backpropagated through the dendrites (red compartments of top cell.)

Courtesy, with permission: John A. Wolf, Jason T. Moyer, Maciej T. Lazarewicz, Diego Contreras, Marianne Benoit-Marand, Patricio O'Donnell, and Leif H. Finkel, *The Journal of Neuroscience* 2005; 25: 9080-9095.

Page 13: Joe Shymanski, copyright Society for Neuroscience.

Page 16: Joe Shymanski, copyright Society for Neuroscience.

Page 18: Side-view hair cells from the semicircular canal demonstrating the presence of the TRPA1 channel on the mechanosensory bundles of stereocilia. The kinocilia, which presumably are not mechanosensory, are labeled in blue (for α -tubulin). TRPA1, labeled in red, is detected in the apical side of the epithelium (a presumed repository or transduction component) and also in the mechanosensory stereocilia (labeled in green for actin). The bottom part of these very long bundles, which contain the tips of numerous shorter stereocilia, labels somewhat more strongly for TRPA1 (yellow), which is also detected on the longer stereocilia. Thus the localization of TRPA1 is consistent with the occurrence of transduction at the tips of stereocilia. Accordingly, TRPA1 displays channel properties of the hair cell transducer and probably forms its pore. In addition, TRPA1 is present in most nociceptors and is thought to play a parallel role in pain transduction.

Courtesy, with permission: Keiichi Nagata, Anne Duggan, Gagan Kumar, and Jaime García-Añoveros, *The Journal of Neuroscience* 2005; 25: 4052-4061.

Page 21: Photographs courtesy, with permission: The Nobel Foundation.

Page 22: Detail of a myelinating Schwann cell expressing GFP in its cytoplasm. The axon that is sheathed by the Schwann cell is drawn in different colors. Note the presence of Schmidt-Lanterman incisures, as repeated bands consisting in two diagonally-oriented lines that cross the cell. An adenovirus expressing GFP was injected in the mouse sciatic nerve in vivo. Three weeks later the nerve was dissected and fixed. The fibers were then teased on a glass slide to allow the observation of infected myelinating Schwann cells that express GFP.

Courtesy, with permission: Nicolas Tricaud, Claire Perrin-Tricaud, Juan L. Brusés, and Urs Rutishauser, *The Journal of Neuroscience* 2005; 25: 3259-3269.

Page 24: Immunofluorescence image reflecting the expression of the CB1 cannabinoid receptor (blue) in nestin-positive mouse hippocampal progenitors (green) that coexpress GFAP (red). In addition, CB1 is also present in differentiated astrocytes nestin-GFAP+ and other double-negative cells.

Courtesy, with permission: Tania Aguado, Javier Palazuelos, et al; *The Journal of Neuroscience* 2006, 26:1551-1561

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Page 32: Illustration of a cross section of the mammalian retina with ganglion cells at the top and rod outer segments at the bottom. Highlighted is the circuitry onto a single ganglion cell, where convergence, amplification, and saturation influence gain controls are located within the retinal network. Depicted in the details is the rod bipolar pathway specified for carrying rod signals in the mammalian retina: rod→ rod bipolar→ All amacrine→ cone bipolar→ ganglion cell. We studied this pathway to find that a key site of gain control at the lowest mean light levels is at the rod bipolar-to-All amacrine synapse, and at brighter light levels gain controls at earlier sites take over. (Media: water color, pencil, Photoshop by F. A. Dunn with help by Paul Newman.)

Courtesy, with permission: Felice A. Dunn, Thuy Doan, Alapakkam P. Sampath, and Fred Rieke, *The Journal of Neuroscience* 2006; 26: 3959-3970.

Page 33: KCNQ potassium ion channels are localized at the nodes of Ranvier. The cover image shows teased nerve fibers, immunolabeled for juxtaparanodal Kv1 channels (green) and nodal KCNQ channels (red). KCNQ2 and KCNQ3 are precisely colocalized with voltage-gated sodium channels at both the axonal initial segments and nodes. At initial segments, this localization is based on interaction with ankyrin-G adaptor proteins.

Courtesy, with permission: Zongming Pan, Tingching Kao, Zsolt Horvath, Julia Lemos, Jai-Yoon Sul, Stephen D. Cranstroun, Vann Bennett, Steven S. Scherer, and Edward C. Cooper, *The Journal of Neuroscience* 2006; 26: 2599-2613.

Page 34: Joe Shymanski, copyright Society for Neuroscience.

Page 36: This confocal image shows area CA1 of an acute rat hippocampal slice that was fixed 60 min after the induction of late long-term potentiation (LTP) by high-frequency stimulation delivered to the Schaffer collaterals. Before stimulation, the distal apical dendrites (located toward the bottom of the image) had been isolated from the cell bodies by a cut (horizontal black band). The slice was labeled for p70 S6 kinase (p70S6K) phosphorylated at T389 (red) and elongation factor 1A (green). As described in the accompanying paper, the LTP-associated increases in the phosphorylation of p70S6K and in the expression of elongation factor 1A in the isolated dendrites were similar to those obtained in intact CA1 dendrites, consistent with the local control of translation through the mammalian target of rapamycin pathway in LTP.

Courtesy, with permission: Panayiotis Tsokas, Elizabeth A. Grace, PokMan Chan, Tao Ma, Stuart C. Sealfon, Ravi Iyengar, Emmanuel M. Landau, and Robert D. Blitzer, *The Journal of Neuroscience* 2005; 25: 5833-5843.



Page 37: Triple immunofluorescent staining shows the normal relationship among laminin (green), the myelin sheath (red), and axons (blue) in the mouse peripheral nerve. Selective disruption of laminin in Schwann cells in the peripheral nervous system impairs axonal sorting and myelination, prevents Schwann cell proliferation, and causes apoptosis.

Courtesy, with permission: Wei-Ming Yu, M. Laura Feltri, Lawrence Wrabetz, Sidney Strickland, and Zu-Lin Chen, *The Journal of Neuroscience* 2005; 25: 4463-4472.

Page 38: Marty Saggese, copyright Society for Neuroscience.

Page 40: The neuroepithelium zippers-up during corticoatrial sulcus formation in the mouse. Zebrin II (FITC) and GLAST (TRITC) immunoreactivity within the sulcus region at embryonic day 14 (E14). The wedge of neuroepithelium forms a physical boundary that is initially impenetrable by progenitors migrating ventro-dorsally from the subpallium into the dorsal telencephalon.

Courtesy, with permission: Christine A.G. Marshall and James E. Goldman, *The Journal of Neuroscience* 2002; 22: 9821-9830.

Page 42: A network of 10,000 integrate-and-fire cells on a raster of 100 by 100 neurons. The cells involved in a strengthened signal pathway and the connections between layers are increased in size and color-coded. On the right, the response of the same cells to a short stimulus delivered to layer 1 (red) is shown in a color-coded raster plot.

Courtesy, with permission: Tim P. Vogels and L. F. Abbott; *The Journal of Neuroscience* 2005; 25:10786-10795.

Page 43: This picture shows immunocytochemical labeling of astrocytes (GFAP; green) and neurons (red) in differentiated adult mouse neurospheres, the cell bodies are labeled with DAPI (blue).

Courtesy, with permission: Natalie D. Bull and Perry F. Bartlett; *The Journal of Neuroscience* 2005; 25:10815-10821.

Page 44: Joe Shymanski, copyright Society for Neuroscience.

Page 46: The microvilli of a variety of chemosensory and mechanosensory cells contain novel members of the espin family of actin cytoskeletal regulatory proteins. Localization of espin (green) in mouse taste buds, highlighting the staining of the taste-cell microvilli that are congregated in the taste pore, is shown.

Courtesy, with permission: Gabriella Sekerková Lili Zheng, Patricia A. Loomis, et al; *The Journal of Neuroscience* 2004; 24:5445-5456.

Page 55: This image is taken from a series of paintings based on an image of the hippocampus of fosGFP transgenic mice after sensory stimulation. The painting belongs to a larger body of work inspired by the textures, artificial luminescence, and topographical character of imaging fosGFP fluorescence in the brain. Color and texture are overlaid to create the sense of depth and complexity issue found in living brain tissue. Oil on canvas, 3 X 4 ft. Artist: Joana Ricou (www.andrew.cmu.edu/user/jiricou/; e-mail: jiricou@andrew.cmu.edu).

Courtesy, with permission: Alison L. Barth, Richard C. Gerkin, et al; *The Journal of Neuroscience* 2004, 24:6466-6475

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