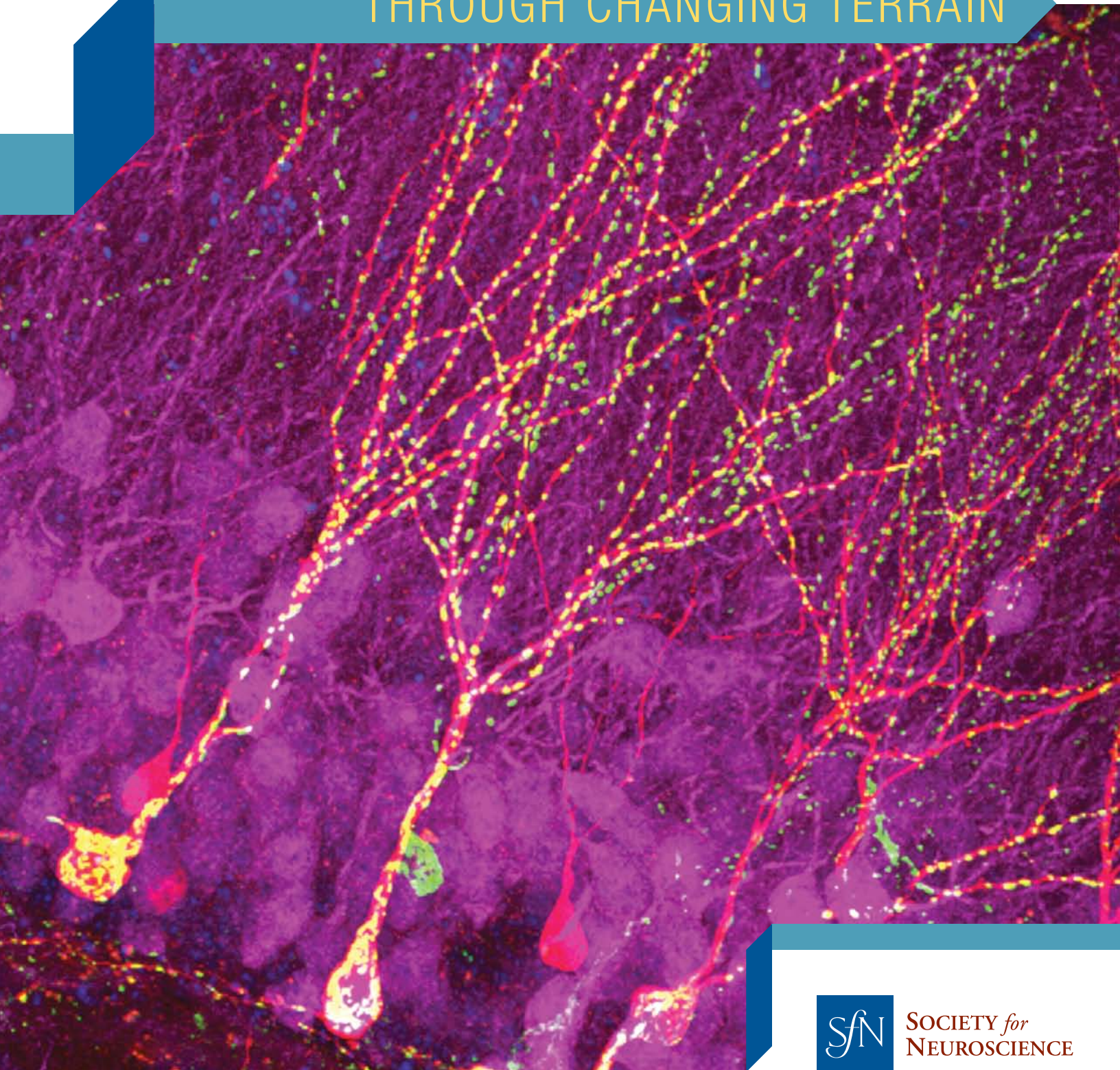


FY **2014** ANNUAL REPORT

# Mobilizing Strengths

THROUGH CHANGING TERRAIN



SfN

SOCIETY *for*  
NEUROSCIENCE





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# Contents

2 Message from the President

3 SfN Mission

## 4 **Creating Venues for Great Science**

Annual Meeting: Neuroscience 2013

*The Journal of Neuroscience*

Introducing *eNeuro*

## 12 **Supporting the Neuroscience Community**

Professional Development

Membership and Chapters

## 18 **Educating and Engaging the Public**

Public Information and Outreach

Science Advocacy

## 24 **Financial and Organizational Highlights**

### SCIENCE IN PROGRESS

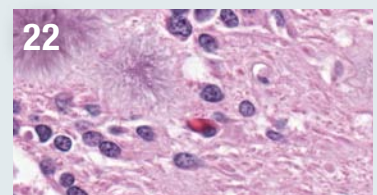
*Science in Progress* articles explore the potential of neuroscience research and its impact on the world around us.



Unlocking Creativity in the Brain



Defining a Framework for Brain Research



Disease-Causing Proteins



## MESSAGE FROM THE President

Neuroscience continues to be dynamic, with promising new initiatives and investments around the globe dedicated to exploring the brain and advancing the field. These successes are a testament to the hard work and commitment of neuroscientists who pursue great science every day. Their work is highlighted by the recent Nobel Prizes awarded to SfN Council member Edvard I. Moser, May-Britt Moser, John O'Keefe, and Stefan Hell, a special lecturer at Neuroscience 2014. While these accomplishments demonstrate tremendous progress and potential, the scientific community continues to experience challenging times. Science funding, in particular, is under enormous strain in many countries, making it harder for scientists to focus on their discoveries and imperiling the next generation of scientists. Despite this, we must remember to draw on the field's many strengths and to leverage them as we navigate both the opportunities and risks in our current environment.

The Society for Neuroscience (SfN) is one of those strengths on which the field can rely during changing times. SfN is serving the community through its unmatched venues for sharing neuroscience discoveries, its strategic investments in new professional development resources, and its intensified efforts on science advocacy and public outreach. In FY2014, the Society has been particularly focused on enhancing resources that increase the *value of*

*membership*, enabling members to grow individually as scientists and to take part in the continued evolution of the field.

### Sharing Great Science

SfN remains as committed as ever to providing a premier event for neuroscientists around the globe to meet, share, and discuss science and discovery. Neuroscience 2013 in San Diego featured more than 30,000 neuroscientists and advocates from 74 countries exchanging information about innovative advances in techniques and new findings about the brain.

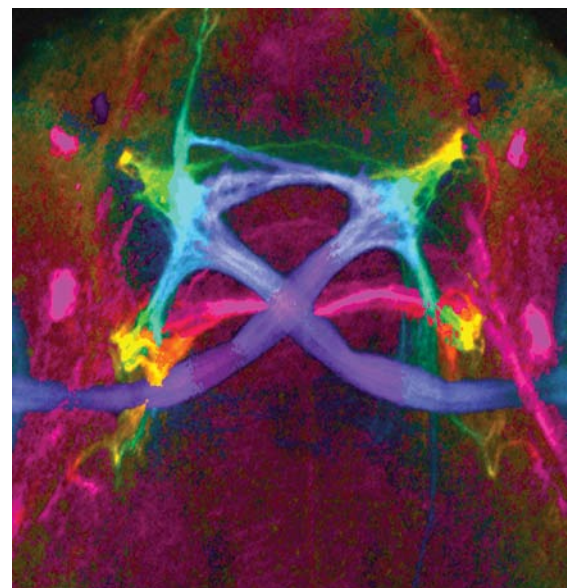
In addition to its annual meeting, the Society promotes the widespread communication of great science through its respected publications. The exceptional reputation of *The Journal of Neuroscience* as a leading venue for science publishing has encouraged SfN to create *eNeuro*, a new open-access journal that features innovative publishing tools and peer review models. *eNeuro* complements *The Journal of Neuroscience* by providing an additional home for high-quality scientific submissions. The new online journal offers authors and readers a unique publishing experience that includes a broader range of content and a more interactive, user-friendly environment, all while maintaining the excellence and rigor for which SfN publications are universally recognized.

### Reaching a Global Audience

SfN is expanding its reach to scientists around the world with enhanced online

programming that makes professional development programs, skills training, and career-focused content more dynamic and accessible through a new unified platform. Resources will include information on emerging career paths and multimedia training resources geared to every career stage. A new highly personalized and interactive environment will allow members to more easily communicate and share information and resources with colleagues.

In an era of global interest in brain research, communicating with the public and effective advocacy could not be more important. Nowhere is that more apparent than in the continued growth of *BrainFacts.org* — in both the size and global distribution of the audience. With this tool, SfN and its partners are reaching millions of viewers worldwide, engaging public audiences and policymakers in a way that simply wasn't available just a few years ago. In my year as president, I have been particularly focused on increasing SfN's ability to train and support individual scientists in public outreach, something that I know will continue in future years. In fact, this year, for the first time, SfN will mount programs online and at the annual meeting for training in advocacy and communication skills. We are also



collaborating with the International Brain Research Organization (IBRO) and the Federation of European Neuroscience Societies (FENS) in global advocacy efforts and with key partners including Research!America on advocating within the U.S.

Underlying all of SfN's strengths is its strongest asset: our volunteer leaders. They are committed and tireless in support of the Society's mission. In ways large and small, more than a thousand scientists volunteer their time to provide counsel and guide SfN's programs and services that enrich and strengthen the field.

### A Way Forward

SfN possesses the resources to help our members navigate a changing landscape. I believe scientists are actually quite accustomed to adapting — indeed, this is a great strength of our scientific method. We learn to adjust our theories and hypotheses based on the data before us. We are now acclimating to a world where change is the constant, stability is the variable, and uncertainty is common. At the same time, neuroscience is in its most fruitful period ever. In this challenging environment full of great possibility, SfN is leveraging its resources and strategically thinking about how best to support its members in moving the field forward.

I am confident that together we can continue to mobilize the strength of the field to create opportunities for all our members to advance science and improve health. I have been honored to serve as SfN president and hope to continue contributing to these efforts in the future.



Carol Ann Mason

**PRESIDENT**

## SfN 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 a diversity of cultural and ethnic 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 and recent developments in neuroscience research and their implications for public policy, societal benefit, and continued scientific progress.



# Creating Venues

## FOR GREAT SCIENCE

### Neuroscience 2013: The Premier Event for Research and Discovery

While technology allows scientists to communicate and share information worldwide instantaneously, nothing in the digital universe can compare to the experience of 30,000 neuroscience researchers, clinicians, and advocates from around the globe gathering in one place to present, discuss, and debate the latest developments and discoveries in the

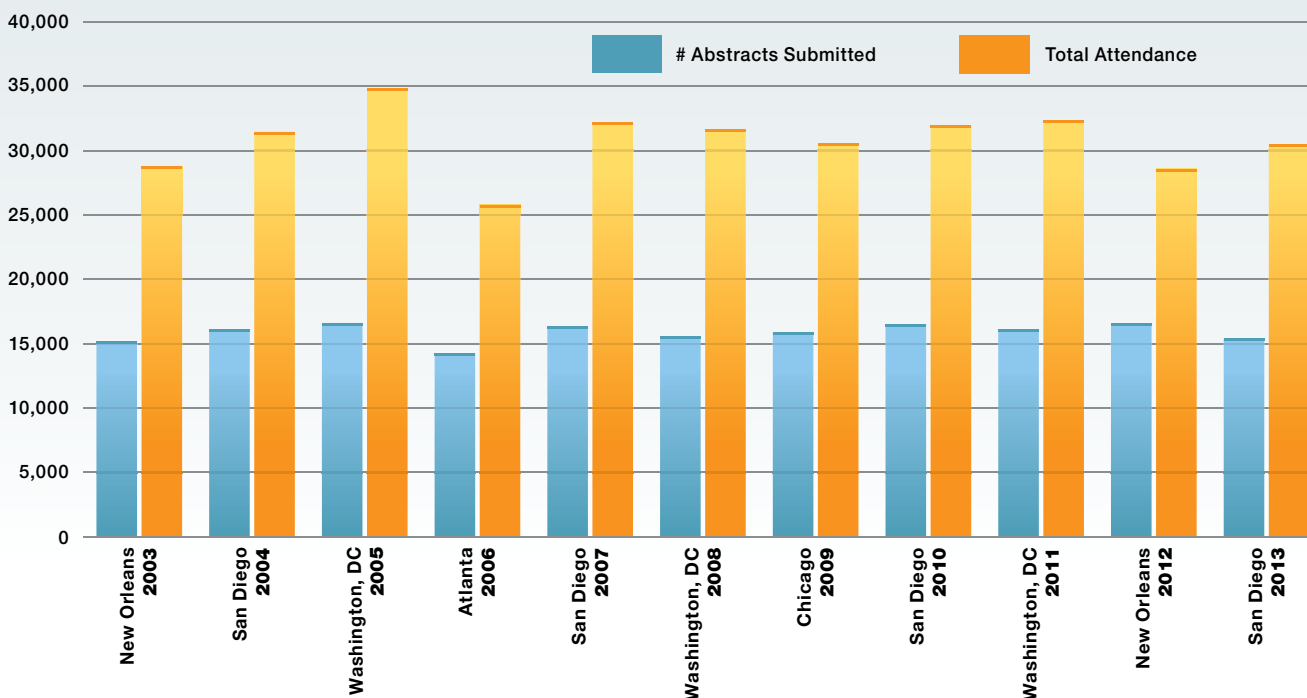
field. It is a defining event for a broad field that encompasses dozens of scientific specialties, hundreds of interest areas, and a thousand disorders, yet the field is drawn together each year by the extraordinary commonality — and complexity — of studying the brain.

The SfN annual meeting is an irreplaceable strength of the field — a place where researchers meet face-to-

face each year to move their individual science forward and also to propel global progress on brain science and health. In enormous lecture halls with renowned scientists, during quiet one-on-one conversations in the hall with a collaborator, or in front of the poster of a new idea, essential cross-fertilizing interactions enable scientists to learn, network, and develop key scientific

### STRONG SCIENCE DRIVES STRONG ATTENDANCE

Strong attendance and abstract submission numbers at Neuroscience 2013 demonstrate the value of SfN and the annual meeting to the neuroscience community.



Poster sessions at the SfN annual meeting are a unique opportunity for researchers to explore, learn, and network with scientists from around the world.



Neuroscientists informally share their research between events at SfN's annual meeting.

and professional skills that spur future discovery.

Neuroscience 2013, held last November in San Diego, demonstrated the strength of the field through its vibrant, robust programs and learning opportunities. Attendees had access to more than 15,000 scientific abstracts, 550 exhibitors, and 50 professional development and networking functions.

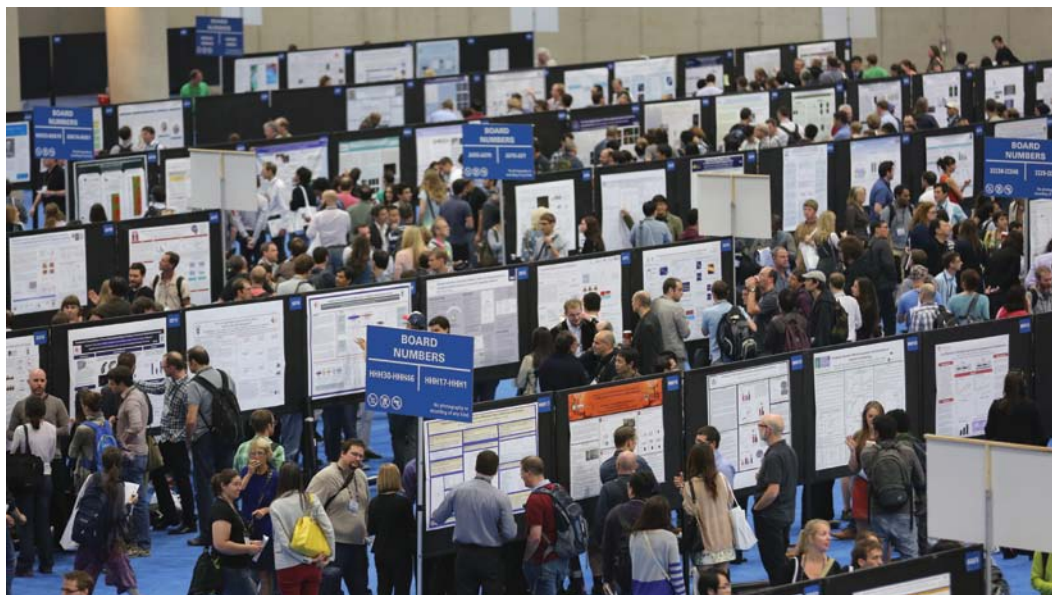
In the Dialogues Between Neuroscience and Society lecture, Ed Catmull, president of Walt Disney and Pixar Animation Studios, discussed how to foster and nurture creativity in a competitive work environment. The theme of creativity also stretched into the Fred Kavli Public Symposium, where two neuroscientists, a composer, a visual artist, and an engineer discussed the brain's role in molding this defining trait of humanity.

During the David Kopf Lecture on Neuroethics, Nita A. Farahany, a professor of law and philosophy at Duke University, continued the meeting's ongoing dialogue about the relationship between neuroscience and society with a discussion of the use of biosciences in the courtroom, including the nature of claims being made, the shifting attitudes toward scientific evidence in the legal system, and the future implications for neuroscience and the law.

Many other events at Neuroscience 2013 looked at what lies ahead for the field. Representatives from U.S. federal agencies and the European Union discussed how government-led projects such as the BRAIN Initiative in the U.S. and the European Commission's Human Brain Project could affect future developments. SfN and the Global Advocacy Committee of the International Brain Research Organization (IBRO) hosted a panel discussion on how scientists can best advocate for biomedical research funding in

challenging economic times. Then-SfN President Larry Swanson and IBRO Secretary-General Sten Grillner introduced the panel and highlighted the need to raise public awareness and encourage public support for neuroscience.

In SfN's Empirical Approaches to Neuroscience and Society Symposium — the first of a three-year series of programs with an emphasis on cultural or societal issues affecting scientists and their work — Jennifer Raymond of Stanford University organized a



Neuroscience 2013 hosted more than 30,000 attendees. They viewed more than 15,000 scientific abstracts covering new research, tools, and technology in the neuroscience field.

*With its wealth of resources and programs, the annual meeting continues to provide members with exceptional and unparalleled professional value.*

panel discussion about gender bias in science. The panelists underscored the need for the field to address and overcome this problem in order to successfully recruit and retain the best scientific talent to undertake future challenges in neuroscience.

SfN's continued dedication to strengthening and enhancing the attendee experience resulted in a number of innovations at Neuroscience 2013:

- New curated itineraries helped users navigate sessions by topic and track relevant posters, symposia, lectures, and social networking events. Curated topics at the 2013 annual meeting focused on plasticity, epilepsy, and advanced methods: focus on the cortex.
- The dynamic poster sessions grew to include 10 presentations per half-day, for a total of 90 presentations at the meeting. These dynamic posters were displayed on 55-inch LED screens, which allowed for the use of multimedia content, such as video, for a more interactive experience.
- The Graduate School Fair, which featured face-to-face meetings with student advisers, program faculty, and graduate school representatives, expanded to two days.

Media coverage of Neuroscience 2013 set a new record with 2,600 articles, underscoring the annual meeting's position as the world's largest source for emerging news on

brain science and health. Articles from the meeting appeared in more than 62 countries, reflecting a widespread and growing global interest in the brain.

SfN is also leveraging meeting resources in ways that continue to provide value for members even after the meeting. Recordings of many Neuroscience 2013 professional development workshops, including the "Careers Beyond the Bench" and "Challenges in Neuroscience Training"

programs, have been posted on SfN.org, along with podcasts from the annual meeting's "Meet-the-Experts" series. The Society also offered a follow-up webinar to last year's sold-out Neurobiology of Disease Workshop, a daylong event on the Friday before the annual meeting that provided students and early-career scientists with in-depth overviews of diseases of the nervous system.

With its wealth of resources and programs, the annual meeting continues to provide members with exceptional and unparalleled professional value. Even as the field adapts to a changing environment, with constraints to research funding and challenges to traditional career paths, SfN provides support and resources to both individuals and the field.

## NEUROSCIENCE BY THE NUMBERS

The annual meeting and *The Journal of Neuroscience* are venues that promote the sharing and discussion of great science and capture the breadth and global reach of the field.

**NEUROSCIENCE  
2013 FEATURED:**

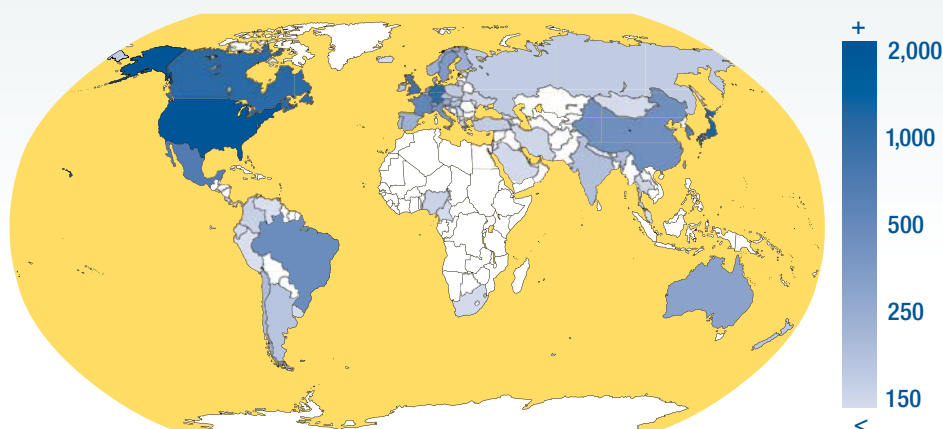
**15,419**  
SCIENTIFIC  
ABSTRACTS

**ATTENDEES  
FROM  
74  
COUNTRIES**

**567**  
EXHIBITORS

**51** PROFESSIONAL  
DEVELOPMENT  
AND NETWORKING  
EVENTS

## GLOBAL HEAT MAP: NEUROSCIENCE 2013 SCIENTIFIC ATTENDEES





## The Journal of Neuroscience: Publishing Excellent Science

With able and thoughtful leadership from Editor-in-Chief John Maunsell, *The Journal of Neuroscience* (JN) continues as a premier neuroscience journal and remains the most-cited journal in the field. As SfN's flagship publication, JN exemplifies SfN's commitment to creating venues for the exchange of excellent neuroscience across a wide and interdisciplinary field that spans molecular, cellular, and genetic interest, development and repair topics, systems and circuits focus, behavioral and cognitive emphasis, and implication for disease and disorders.

Manuscripts submitted for consideration are reviewed by distinguished scientists throughout the world. *The Journal of Neuroscience* editorial

board consists of the editor-in-chief, eight senior editors, 29 reviewing editors, and 154 associate editors. The publication has rigorous review and selection processes, exemplified by its 34 percent acceptance rate for calendar year 2014. JN also boasts fast publication times, with an average of 34 days from submission to first decision and an average of 42 days from acceptance to publication.

Its readership and reach are strong and steady, with an audience that stretches across more than 200 countries and territories providing over 13 million page views and 6 million unique visitors per year. Institutional subscriptions hit a nine-year high in calendar year 2013, with organizations in more than 40 countries subscribing

despite an academic community faced with decreased institutional budgets and federal funding.

In May, JN announced its participation with ORCID, a nonprofit effort to create and maintain a database of unique identifiers for researchers, linking published articles to their contributors and enabling easier online searching. Authors submitting manuscripts to *The Journal of Neuroscience* can register their own ORCID identifier, which ties their name to a viewable list of their scientific contributions, including published articles, as well as their designated institutions.

*The Journal of Neuroscience* is also exploring additional partnerships to improve reproducibility of scientific research. This year, the publication volunteered to participate in an early study with the Resource Identification Initiative, an effort to help researchers cite key resources, including animal models, reagents, and software, with sufficient detail to support efficient reproducibility and reuse. Similar to ORCID, the initiative's effort allows authors to register their identifiers alongside their manuscript submissions and stores the identifiers in searchable databases.

*The Journal of Neuroscience* continues to serve as a leading source for reliable news about brain research for media outlets around the world. In fiscal year 2014, coverage of JN continued to grow, with more than 12,000 articles appearing in print and online. Highlights of this media coverage included stories in *The Huffington Post*, *The New York Times*, *The Telegraph*, National Public Radio, *Time* magazine, BBC, *The Washington Post*, Yahoo! News, CNN, and *The Daily Mail*.

### IN 2013, THE JOURNAL OF NEUROSCIENCE HAD:

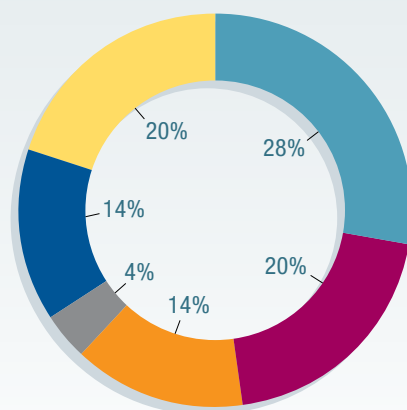
**13.8**  
MILLION  
PAGE VIEWS

**6**  
MILLION  
UNIQUE  
VISITORS

**15,000**  
MOBILE APP  
INSTALLS

ARTICLE  
SUBMISSIONS  
FROM  
**52**  
COUNTRIES

### A breakdown of articles published in *The Journal of Neuroscience* in 2013:



- Behavioral/Cognitive
- Cellular/Molecular
- Development/Plasticity/Repair
- Features
- Neurobiology of Disease
- Systems/Circuits

## eNeuro: Newest SfN Journal

Given the evolving nature of scientific communications and calls by scientists for new and different publishing models, SfN in fall 2012 began discussing the creation of a new open-access journal. With guidance from a working group, as well as the Scientific Publications and Finance committees, Council approved creation of the new journal in fall 2013.

In creating *eNeuro*, SfN has established the first broad-based, peer-reviewed, open-access journal focused solely on the field of neuroscience. It complements SfN's flagship publication, *The Journal of Neuroscience*, by providing an additional publishing venue for high-quality scientific submissions across

the breadth of the field.

The goals of *eNeuro* and *JN* align in publishing excellent science, and *eNeuro* distinguishes itself from other publications by providing authors and readers with a modern, innovative publishing experience. In addition to new discoveries, *eNeuro* publishes a wide range of content, providing a respected home for studies that focus on negative results, failure to reproduce, tools and methods, and new theories, as well as commentaries.

*eNeuro* also implements a fair and fast review process, undertaking a "double blind" review experiment in which authors and reviewers are anonymous to each other. Authors receive clear and open feedback in the form of a fact-based synthesis written

*eNeuro distinguishes itself from other publications by providing authors and readers with a modern, innovative publishing experience.*

## Introducing eNeuro

- Commitment to publish excellent science
- Broad neuroscience content
- Fair, quick evaluation by working scientists
- A noncommercial publisher
- Supports SfN programs that serve the field



Christophe Bernard was elected by the Council of the Society for Neuroscience to serve as the first editor-in-chief of SfN's new online open-access journal, *eNeuro*.

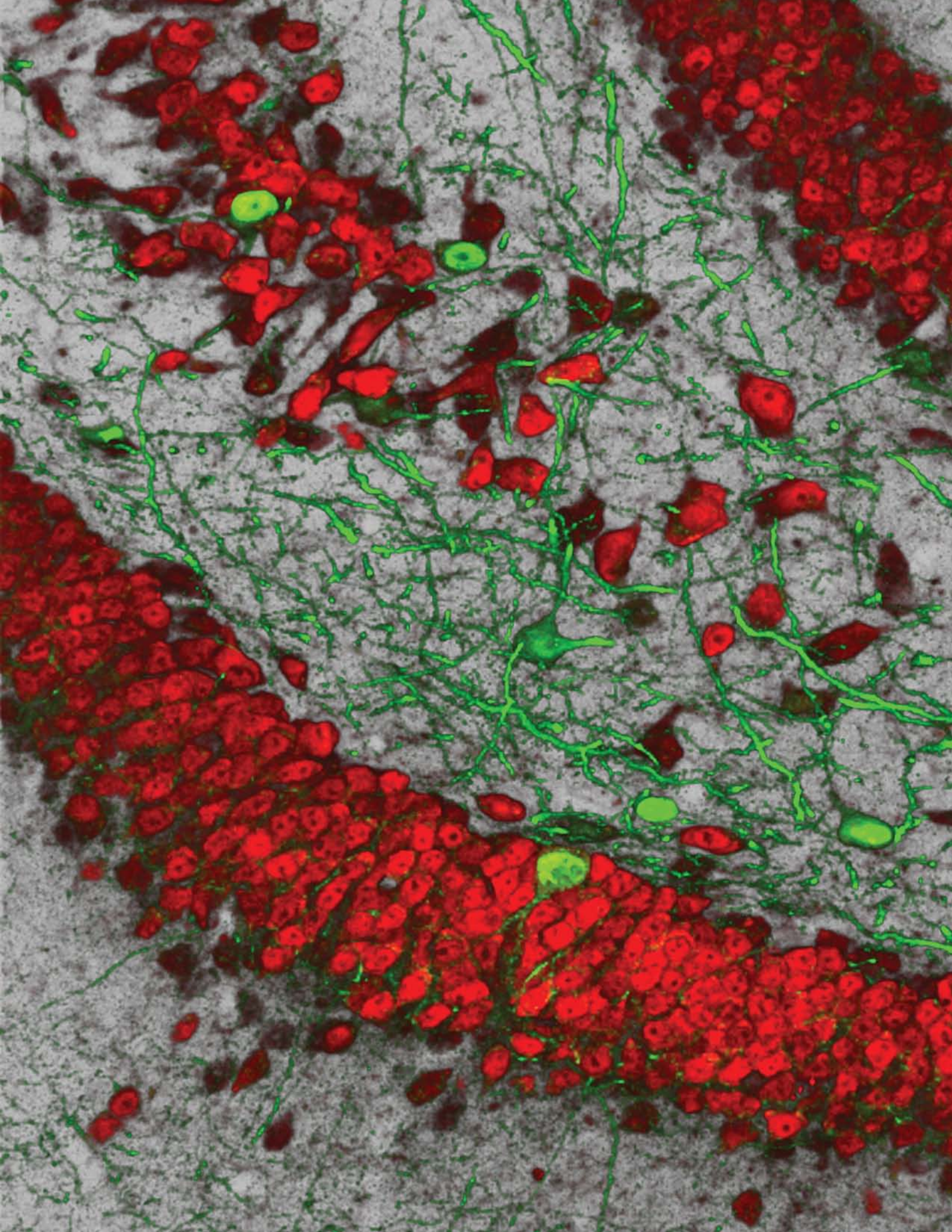
by their reviewing editor explaining why their work was accepted or rejected, and that review is published with the article, if accepted.

Furthermore, *eNeuro* publishes studies immediately after acceptance so that the research is available to the field as soon as possible. These pre-publication manuscripts are posted as PDFs while the composition and editing process is underway.

*eNeuro*'s online environment promotes greater use of images, video, and audio, as well as the sharing of content and articles. Authors are encouraged to submit significance statements, visual elements, and video "papercasts" in an effort to create an engaging and interactive experience for readers. SfN envisions *eNeuro* as a place to experiment with new ideas for science publishing.

The new online journal is expected to contribute to SfN's long-term financial strategy of revenue diversification. Any revenue generated by *eNeuro* will allow SfN to invest in nonprofit programs around the world that enhance and serve the field of neuroscience.







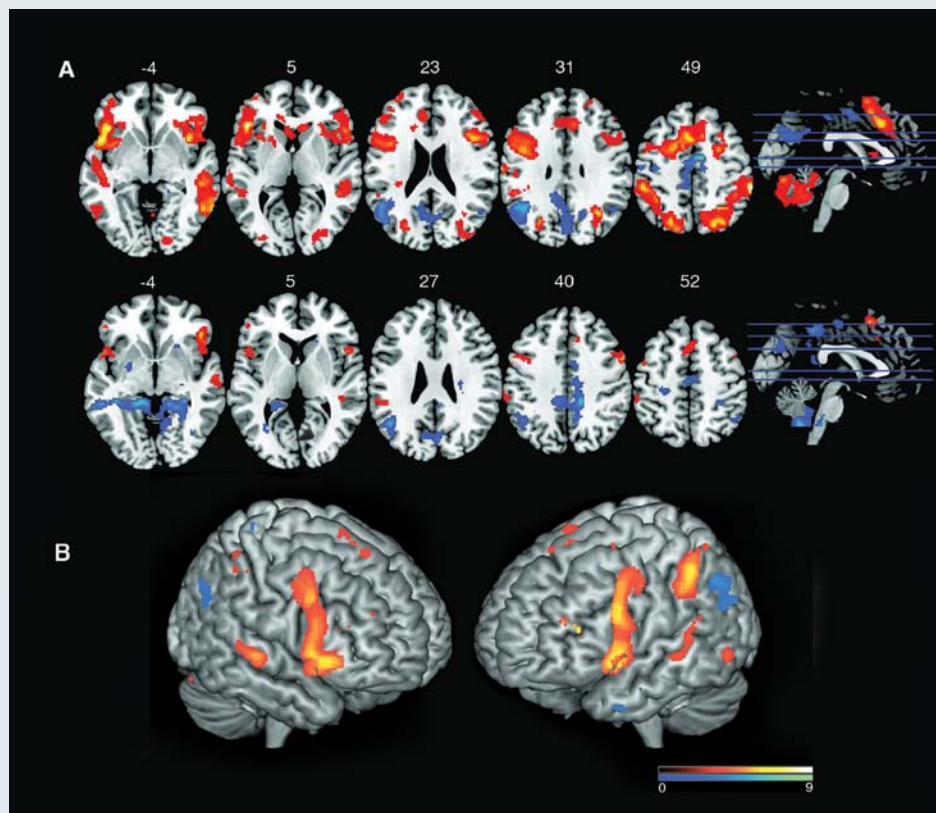
# Unlocking Creativity in the Brain

What does it take to unlock creative potential in the human mind? In recent years, scientists have grown more interested in understanding what's going on in the brain when people are engaged in creative activities such as playing a musical instrument, singing, or brainstorming.

At Neuroscience 2013's Dialogues Between Neuroscience and Society, an annual lecture series that explores the ways in which neuroscience intersects with the world around us, computer animation visionary Ed Catmull discussed how to unlock creative potential.

In 1995, Catmull and a team of highly creative individuals at Pixar Animation Studios did something remarkable; they produced *Toy Story*, the world's first feature-length computer-animated film. The movie thrilled audiences and pushed the boundaries of creativity in film and technology to new limits, completely revolutionizing the industry.

Almost 20 years and five Academy Awards later, Catmull, now president of Walt Disney and Pixar Animation Studios, is considered an authority on creativity. He discussed the elements of fostering a sustainable creative culture at Pixar. By encouraging honesty, relinquishing control, acknowledging the unknown, and promoting a safe environment for making mistakes, creativity and excellence can flourish, he explained.



Brain scans comparing the activity of jazz pianists interacting during improvisation show increased activity (red) in the lateral prefrontal cortex, and language and sensorimotor areas, and decreased activity (blue) in the angular gyrus.

Walt Disney and Pixar Animation Studios President Ed Catmull discusses the importance of creativity in the competitive work environment at the 2013 SfN annual meeting in San Diego.



## When Musicians Improvise

To begin to uncover the neural underpinnings of creativity, scientists are using the latest imaging technology to study the brains of professional artists. By studying jazz musicians and freestyle rappers, for instance, scientists can gain insight into how the brain handles the spontaneous creation of music.

One such study compared the brain activity of professional jazz pianists as they freely improvised or played a memorized composition while in a functional magnetic resonance imaging (fMRI) scanner. In addition to widespread activity in sensorimotor and language areas, improvisation was associated with increased activity in the medial prefrontal cortex (MPFC), a brain area involved in introspective thinking. Improvisation was also associated with decreased activity in the dorsal lateral prefrontal cortex (DLPFC), a region involved with executive functions, such as planning and inhibition.

In another study, scientists used fMRI to peer into the brains of rappers as they improvised or performed rehearsed lyrics. Similar to the jazz pianists, improvisation in the rappers was associated with increased activity in the MPFC and decreased activity in the DLPFC.

The findings suggest that when the regions of the brain involved with executive control are disengaged, musicians may be better able to indulge in self-expression.

## DID YOU KNOW?

**By scanning the brains of artists as they perform, scientists are beginning to uncover the neuroscience of creativity.**

**Improvisation is associated with increased activity in the medial prefrontal cortex, a brain area involved in introspective thinking.**

**Scientists theorize the regions of the brain that are most active during daydreaming play an important role in creative behavior.**

## When the Mind Wanders

Numerous studies show that when cognitive control is low, regions of the brain comprising the default mode network (DMN) — which is involved in unconscious forms of information processing — become active. Scientists theorize that this network, which includes the MPFC, contributes to spontaneous thought generation during daydreaming and plays an important role in creative behavior.

Could DMN structure shape a person's creative inclinations? To find out, scientists performed structural MRI scans on a group of men and women. Afterward, participants were given two minutes to jot down as many responses as they could to the question, "What can you do with a brick?"

Researchers found that the more creative study participants' responses were, the greater the volume of gray matter (nerve cell bodies and projections) observed in regions of the DMN,

including the left precuneus and left insula — regions thought to participate in consciousness and self-awareness — and both hemispheres of the MPFC.

Scientists cannot confirm whether the increased DMN volume in creative individuals preceded or resulted from frequent creative thinking. Still, they continue to search for how gray matter concentration relates to creative function in the brain.

While the neuroscience of creativity remains a relatively young field, the results of these and other studies suggest that reduced cognitive control is important for creativity.

As Catmull explained at Neuroscience 2013, people will be most open to creativity when they work in an environment where it's OK to make mistakes. "Everyone has the potential to be creative. Our choices enable or block that creativity. Remove the blocks to candor," he said. "Ease isn't the goal. Excellence is."

# Supporting

## THE NEUROSCIENCE COMMUNITY

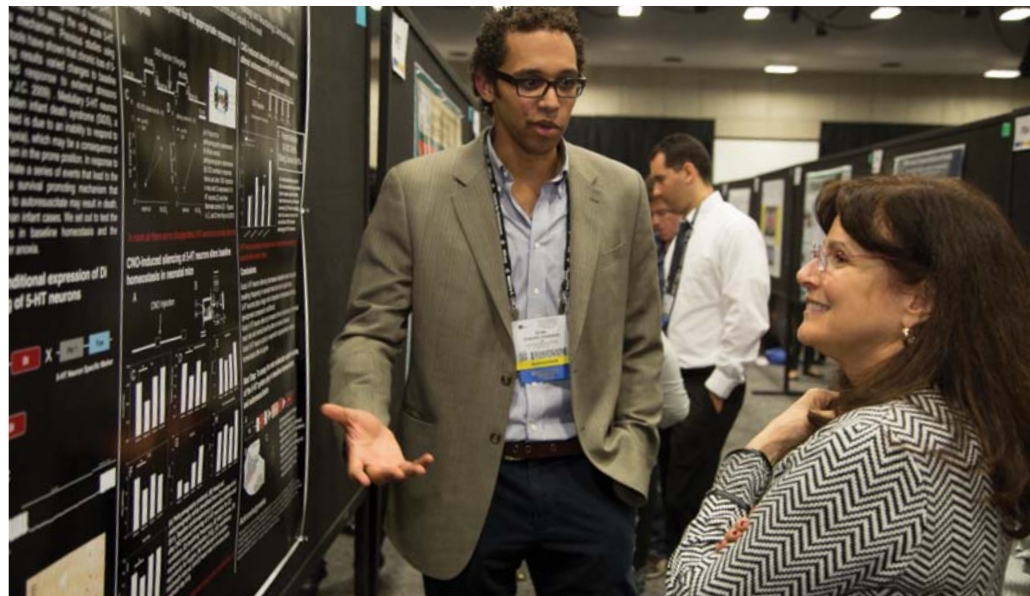
### Building Value for a Diverse Global Membership

The Society for Neuroscience is fortunate to rely on the strength of a diverse and global membership, who both drive new discoveries today and train tomorrow's scientists. In FY2014, SfN was the professional home of nearly 40,000 researchers and clinicians in more than 90 countries, with 40 percent of the Society's membership coming from outside the United States. Reflecting the continued interest of a new generation of neuroscientists, student and postdoctoral trainees made up 40 percent of the Society's membership.

In an effort to increase the benefits of SfN membership and to help address member needs — especially at a time of uncertainty for the field — the Society is developing programs designed to serve a wider range of members, focusing especially on increasing the availability of online tools that provide members across the globe with valuable resources.

### Expanding Online and In-Person Resources for Various Career Paths

In FY2014, the Society worked to create key resources to meet the diverse and expanding professional development needs of its members. This growing set of tools is designed for members at all stages of the



Ryan Dosumu-Johnson presents his scientific poster at Neuroscience 2013 to his Neuroscience Scholars Program mentor, Susan Amara, scientific director of NIMH's intramural research program. The NSP received the 2014 "Power of A" Summit Award from ASAE for enhancing career development opportunities for underrepresented graduate and postdoctoral trainees.

"neuroscience lifecycle," including those pursuing careers in the lab and beyond the bench. SfN will continue adding to and investing in its library of online resources in FY2015.

At Neuroscience 2013, SfN continued a popular series of professional skills and career development events and increased the accessibility of these events by posting videos online afterward. Covering topics identified as vital to the field by volunteer leaders, the events provided guidelines and best practices for actively managing

a career, dealing with challenges in neuroscience training, applying for funding, making the most of international training, recruiting and retaining a diverse faculty, and exploring career opportunities beyond the laboratory bench. Members can view many annual meeting sessions in their entirety on SfN.org.

To further the growth of the Society's slate of online professional development resources, SfN has produced an array of informative videos and webinars. The new



resources include six videos focused on the joys of science and mentoring and career advice, as well as a widely disseminated video series on career options outside the lab, accompanied by career guides based on interviews conducted at Neuroscience 2012.

SfN’s webinars provide additional opportunities for learning and help members continue their personal and professional development in the field, with topics ranging from “The ABCs of Brain Awareness Week” to “Building, Retaining, and Sustaining a Diverse Student Body.” And consistent with SfN’s strategy for expanding the reach

and impact of its resources, these webinars were also recorded and posted on SfN.org.

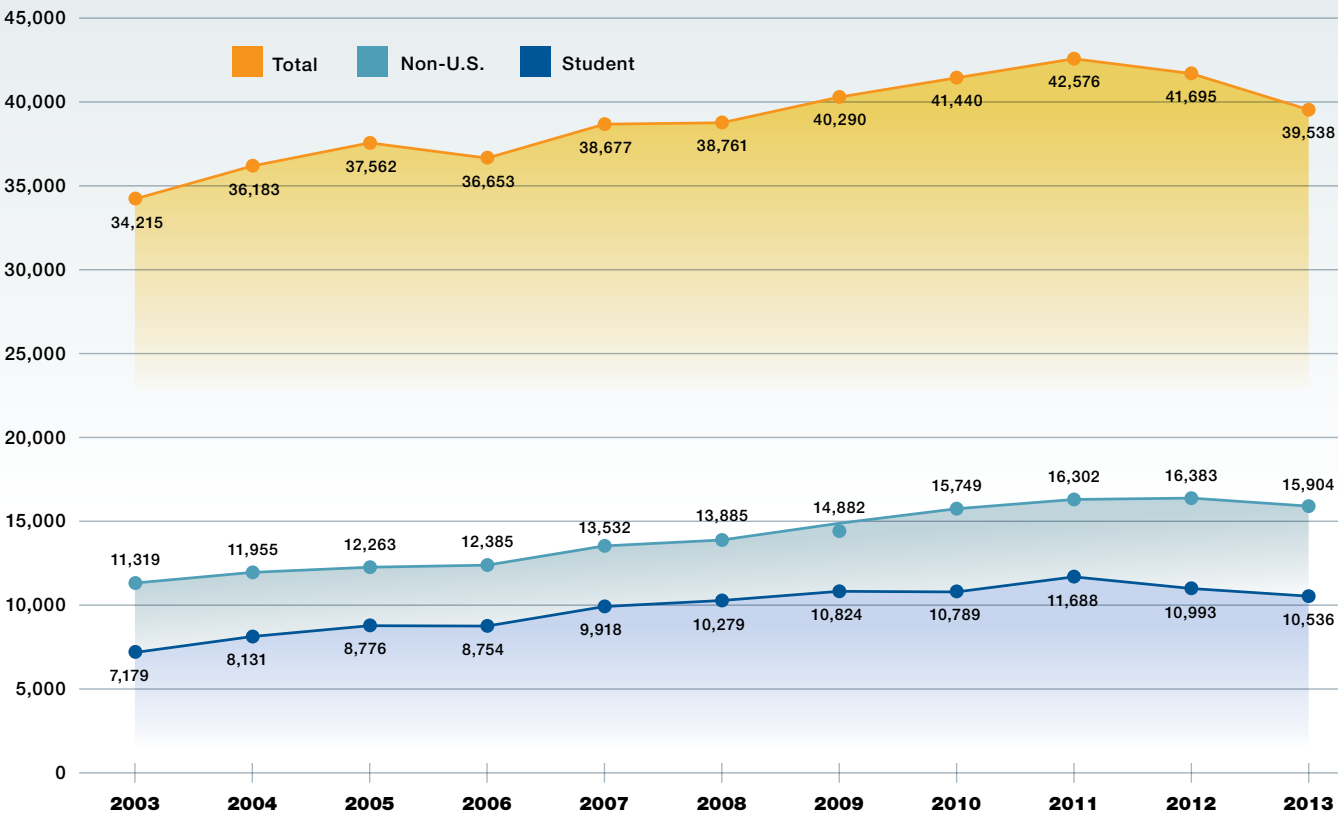
Enhancing the value of the Society’s online professional development and webinar opportunities is a priority of the SfN Council, which approved the creation of a unified platform for enhanced educational content and discussion. Launching in early 2015, it will provide venues for virtual learning opportunities — from videos to webinars to articles — and engage colleagues in dialogue that leads to further content exploration. The new platform promises to increase

membership value for SfN members by providing useful interactive content across the field.

The Society also continues to grow networking opportunities for members and encourages those around the globe to connect with SfN through *NeurOnLine*. This members-only social network and SfN’s public-facing social media channels provide new ways for the neuroscience community to connect. *NeurOnLine*, available both online and through a mobile app, hosts discussions about science, career challenges, and funding, among other topics. Additionally, a new community

**MEMBERSHIP TRENDS REFLECT A GLOBAL AND DIVERSE FIELD**

SfN’s membership reflects a diverse and global community of neuroscientists, with members at all career levels and in more than 90 countries. SfN programs strive to meet the evolving needs of a membership that is experiencing contraction due to funding pressures in the larger biomedical research community.





Students and young professionals network and explore various career paths at an SfN career development event.

focused on the annual meeting was successfully launched to allow those attending to connect with one another before, during, and after the event. Twitter and Facebook also expanded in reach and visibility, actively creating vibrant venues for taking part in conversations about the field and the work of the Society. Facebook “likes” surpassed 75,000 and the Twitter following is over 17,000.

### Promoting Diversity Within the Field of Neuroscience

SfN recognizes that science is stronger with the expertise and input of diverse voices. In FY2014, SfN made significant advances in serving the needs of women and underrepresented minorities in neuroscience by maximizing the impact of two key programs:

- Department Chair Training to Increase Women in Neuroscience (IWIn) — This NSF-funded project successfully led to tangible change in the areas of gender equality and diversity within academic neurosci-



## A Tale of Two Sexes

Marian Joëls<sup>1,\*</sup> and Carol Mason<sup>2,\*</sup>

<sup>1</sup>Brain Center Rudolf Magnus, University Medical Center Utrecht, 3584 CG Utrecht, the Netherlands

<sup>2</sup>Departments of Pathology and Cell Biology, and Neuroscience, Columbia University, New York, NY 10032, USA

\*Correspondence: m.joels@umcutrecht.nl (M.J.), cam4@columbia.edu (C.M.)

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This year marks the first time that the largest Neuroscience societies in the U.S. and Europe are led by females. Here we discuss the challenges that women face in moving through the ranks of academia and propose ways to increase women's representation in the field.

This year, for the first time ever, two of the largest neuroscience societies are led by a female scientist: the Society for Neuroscience (SfN), with nearly 42,000 members, and the Federation of European Neuroscience Societies (FENS), which represents more than 22,000 neuroscientists in 42 member societies across Europe. While the SfN has a history of female presidents, 9 out of 45, FENS welcomed its first female president only recently. Why do women move so

societal changes over time. For instance, in the 1950s, the number of women entering university was much lower. Society at large was not ready for full participation of women in academia. When Dorothy Hodgkin—who, among many things, revealed the structure of vitamin B12—was awarded the Nobel Prize for Chemistry in 1964, *The Daily Mail* reported “Oxford Housewife wins Nobel.” This may seem outrageous now, but probably few found this disconcerting

the next stage of their career and, if they do so, receive lower wages than their male counterparts (*European Commission*, 2013; *Shen*, 2013)?

### Today's Hurdles

Explanations for the leaky pipeline have been outlined in many scientific and news articles (e.g., *Cohen*, 2013; *Shen*, 2013). Our overview is by no means exhaustive but will just highlight some important reasons.

SfN President Carol Mason and FENS President Marian Joëls addressed the issue of fewer women making it through the neuroscience pipeline in their article “A Tale of Two Sexes,” published in *Neuron*.

*SfN remains committed to increasing opportunities for members throughout the world and moving the global advocacy effort forward through strategic partnerships.*

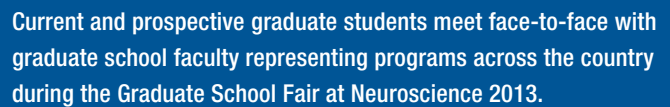
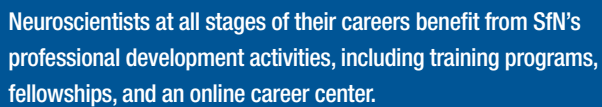
ence. By project completion, 135 participants, representing 43 institutions from 27 states and the District of Columbia, had taken part in this valuable experience. Online resources, including three learning modules and a 60-minute webinar, were made available on the SfN website to produce an even greater impact, and plans are in the works to ensure these tools are shared with the global neuroscience community in years to come.

- Neuroscience Scholars Program — For the 32nd year, SfN continued this successful program with funding from the National Institute of Neurological Disorders and Stroke. Building upon the history of

the program, the Society recently received a new five-year grant for the program, which will continue funding for annual meeting attendance, individualized mentoring, and enrichment funds for the professional development of 45 NSP fellows. The program has also expanded to include 93 NSP associates, who will participate in a structured online training program and have access to an online diversity affinity group of NSP mentors and alumni for seeking career connections and guidance.

### Facilitating Global Engagement on a Local Level

SfN chapters reflect the global reach of the Society while having an impact



A core focus of the Society and its members is to help to foster the next generation of neuroscientists. SfN continues to work toward establishing a hub for information on best practices

SfN remains committed to increasing opportunities for members throughout the world. With the generous support of the Grass Foundation and the International Brain Research Organization, SfN launched the Latin America Training Program (LATP), a dynamic live and Web-based training initiative that preserves the strengths of the historic Ricardo Miledi Neuroscience Training Program and is open to trainees from Latin America and the Caribbean. Fifteen of the program's participants attended a three-week, hands-on training course at the Universidad Nacional Autonoma de Mexico in August 2014, while more than 70

Looking ahead to FY2015, SfN will maintain a strong commitment to supporting the field while establishing new programs that add value for individual members. SfN is developing key platforms and solutions to help its members grow and thrive in a challenging fiscal environment. These initiatives, including expanding career resources for members and creating new professional development tools, will continue to add value to SfN membership in FY2015.

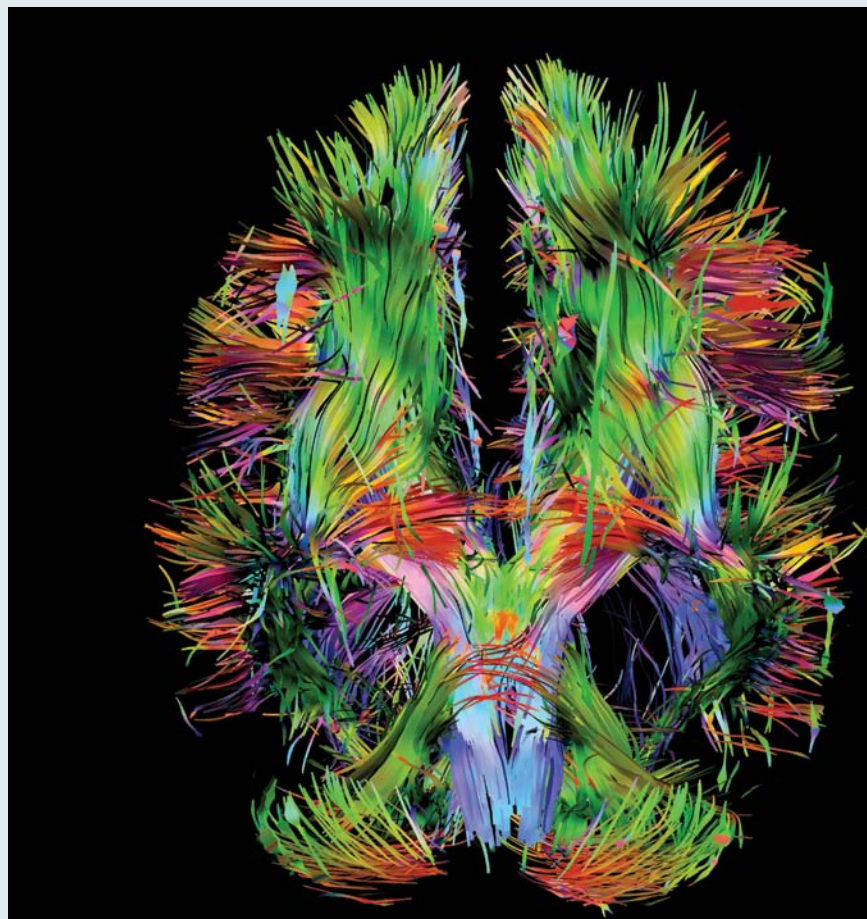


# Defining a Framework for Brain Research

On any given day, the Beijing subway shuttles millions of passengers between hundreds of stations. While impressive, it is nothing compared to the human brain, which transports innumerable signals between tens of billions of neurons.

To fully appreciate brain function, scientists need to know what's going on in the various regions (or stations) in the brain, as well as how those regions connect (routes) and communicate with each other (schedule).

Whereas operators overseeing the Beijing subway can track trains' routes and schedules in real time, neuroscientists studying the brain lack a complete picture from which to pull such basic information. However, by studying animals such as rodents, which have simpler nervous systems and brains that are similar to those of humans, scientists have been able to obtain



Efforts are currently underway to accelerate the development of new technologies to study the interaction between individual cells and the circuits they form in the human brain. This image visualizes brain cell connections in the human brain using high-resolution diffusion tensor magnetic resonance imaging.

Animals play an essential role in neuroscience research. The rat served as the model for one of the first 3-D digitized structural atlases of the brain.

# BrainFacts.org

More information about brain atlases is available at [BrainFacts.org](http://BrainFacts.org), a public information initiative of The Kavli Foundation, the Gatsby Charitable Foundation, and the Society for Neuroscience.

increasingly detailed information about the connections in the brain.

## An Atlas of the Rodent Brain

Past SfN President Larry Swanson played a major role in the early efforts to generate a map of the rodent brain. As a post-doctoral fellow in the 1970s, Swanson studied what goes on in the brains of rats when they are motivated to eat, drink, and have sex. He became determined to chart the connections of cells in the hypothalamus that were thought to be involved with these behaviors.

“Without knowing structural information, it’s hard to make sense of how the brain works and how to create a solution for motivation disorders like anorexia or overeating,” Swanson said. “At the time, the parts of the brain controlling these behaviors were a black box.”

To create a visual image, Swanson injected special tracers into the rat hypothalamus before carefully separating the brain into thin sections. Looking at the sections under a microscope, he then drew each cell and the connections between them by hand. This process took a long time and made it difficult for Swanson to share his results with others.

Then, in the 1980s, just as computer graphics were beginning to take off, Swanson realized that he could digitally capture the images that he saw under the microscope. By using a computer to stack these brain section images on top of one another, Swanson

created the first 3-D digitized structural atlas of the rat brain. This brain atlas revolutionized the field, creating a standard image that researchers around the world could build upon.

“A brain map creates a database for all information about the brain,” Swanson said. “Once you have a map of the brain, you can add information about molecules, function, diseases, and more.”

## Gathering More Details

Researchers are currently unable to capture the level of detail in the human brain that they have been able to collect in rodents. Major new research initiatives taking place around the globe have elevated the importance of understanding the human brain and unraveling the complexities of how it works. When U.S. President Barack Obama announced the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, he set in motion a plan to accelerate the development of technologies to understand how “how individual brain

cells and complex neural circuits interact at the speed of thought.” Neuroscientists realize that gathering such vast amounts of data will require new methods of data storage and analysis, and they are teaming up with experts in statistics, physics, mathematics, engineering, and computer science to make such methods a reality.

As some neuroscientists work on the creation of new technologies to probe the human brain, others are working on strategies to use detailed information about animal brain circuitry to enhance knowledge of normal and diseased human brain circuitry. To help reach this goal, Swanson and others are creating 3-D computer graphic models of the brains of humans and other animals that can interact and inform one another.

“For a long time, research has been focused on how smaller and smaller chunks of the brain work,” Swanson said. “Now, scientists are trying to use the information about these pieces to put the brain back together to determine how this system works as a whole.”

## DID YOU KNOW?

To fully grasp brain function, scientists need to know how various brain regions work, as well as how those regions connect and communicate with each other.

Brain atlases allow data collected by different researchers to be directly compared, shared, and searched by others.

Scientists can use brain atlases to identify the differences between diseased and healthy brains.



# Educating

## AND Engaging THE PUBLIC

Capturing the interest of the public and policymakers is becoming increasingly important for scientists around the globe, regardless of their career stage. Through tools such as *BrainFacts.org*, Brain Awareness Week, and a robust advocacy engagement program, SfN enables the neuroscience community to reach a broader, nonscientific audience. SfN has made good progress in these areas in FY2014 and recognizes that continued public engagement will be essential in the year ahead.

### Growing a Global Audience for *BrainFacts.org*

In May, *BrainFacts.org*, the Society's primary public outreach vehicle, celebrated its second anniversary. A public information initiative of SfN, The Kavli Foundation, and the Gatsby Charitable Foundation, *BrainFacts.org* has received more than 4 million visits, and the site now averages more than 4,300 users each day, with monthly visits nearly double what they were last year. Several developments this year positioned the site for further growth and expansion to reach new audiences worldwide.

Guided by a global editorial board of leading scientists, *BrainFacts.org* added nearly 100 original articles, videos, podcasts, images, and teaching resources in the past year. Additionally, in an effort to increase the amount and diversity of content on the site,

*BrainFacts.org* secured a number of new content partners with vetted and engaging multimedia content, including the American Chemical Society, Science Friday, and the National Science Foundation.

With nearly 50 percent of site traffic from outside the United States, *BrainFacts.org* has made global site use a priority. To improve site access in areas of the world in which information is primarily consumed on mobile devices, *BrainFacts.org* implemented responsive design this year, actively adapting to smaller screen sizes.

### Increasing Engagement in Public Outreach

In addition to *BrainFacts.org*, SfN engages the public through educational programs and outreach events, which

also saw expansion and growth in the past year. SfN members from around the world participated in public events March 10–16 for Brain Awareness Week, created by the Dana Foundation to foster greater interest in brain science and health. To increase participation in the global campaign, SfN hosted the webinar “The ABCs of BAW” in January 2014, to an overwhelmingly positive response. SfN's fourth annual Brain Awareness Video Contest promoted the spirit of Brain Awareness Week, generating dozens of creative, engaging, and accessible videos about the brain, submitted from countries around the world. Both the webinar and the winning videos are available to the public on *BrainFacts.org*.

SfN connects with educators, students, and the general public

### BRAINFACTS.ORG'S GLOBAL REACH

## BrainFacts.org

*BrainFacts.org* is a global resource with thousands of users from almost 200 countries and territories. The United States makes up just less than 50 percent of unique site visitors, at 915,633. To the right is a list of the countries with the most *BrainFacts.org* unique visitors since its launch in May 2012.

COUNTRY	UNIQUE VISITORS
United Kingdom	121,388
Canada	81,108
India	72,410
Philippines	71,277
Australia	59,140
China	31,743
Pakistan	18,036
Germany	13,090
New Zealand	11,759



Neuroscientists engaged almost 100 middle school students in brain activities as a part of “Super Neuroscience Saturday,” an event organized by the White House Office of Science and Technology Policy. SfN presented creative games and displays to inspire young students to learn about neuroscience.

through several major outreach events. In the fall, SfN participated in Super Neuroscience Saturday, an event organized by the White House Office of Science and Technology Policy and the Smithsonian Institution. The event engaged middle school students with hands-on activities and demonstrations. SfN hosted similar activities for families at the third USA Science and Engineering Festival, attended by more than 325,000 people, and for teachers at the National Science Teachers Association annual meeting, attended by more than 10,000 science teachers.

Public interest in brain science continues to grow, and the media play a key role in enhancing public awareness about brain research. SfN works with scientists from around the world to help share their work and ensure that their efforts are accurately represented in the media. News outlets such as *The Wall Street Journal*, BBC News, CNN, *Time* magazine, the *Los Angeles Times*, and *Nature*, among others, look to SfN and *The Journal of Neuroscience* as reliable sources of information on brain-related discoveries. As part of this effort, SfN connects members of the press with experts across the field to

help shed light on the latest news and developments in brain science. Members of the media are also encouraged to attend the SfN annual meeting. Media coverage of Neuroscience 2013 set a new record, with 2,600 articles covering findings presented at the meeting, reinforcing the event’s role as the world’s largest source of emerging news about brain science and health.

### Engaging Scientists in Advocacy

Major initiatives focused on neuroscience research — such as the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative in the U.S. as well as projects in Europe, Asia, and the Middle East — continued to cultivate the public’s interest during the past year. And SfN remains dedicated to ensuring that global public investment in neuroscience research is at a level that matches the scientific opportunities that lie ahead. In the U.S., advocates made some progress toward reversing the automatic, across-the-board federal funding cuts known as sequestration. But there is continued uncertainty about the future of funded biomedical research in the U.S. and around the globe.

SfN seeks to engage members at all career stages in advocacy activities, helping scientists connect with elected officials and policymakers about the future of the field. In FY2014, SfN launched the Early Career Policy Fellows Program, which trains early career neuroscientists on becoming effective advocates for science and encourages them to carry the advocacy message back to their institutions and professional networks. Fellows began their training by attending SfN’s Capitol Hill Day, joining the more than 45 SfN members who met with more than 75 congressional offices to advocate for scientific research.

### Building Strength Through Coalitions

SfN’s collaborations with coalition partners remain central to advocacy efforts. These coalitions collectively represent thousands of people united in support of strong federal investments in research.

SfN partnered with Research!America (R!A) and other organizations in an effort to urge federal candidates to tell voters where they stand on funding for health and research. In October, SfN co-sponsored a R!A program that brought scientists from all over the country to Washington, DC, to learn about advocacy communications and participate in Capitol Hill meetings.

SfN works closely with the American Brain Coalition and the Congressional Neuroscience Caucus, which hosted several briefings for Congress this year on the value of neuroscience research. In 2013, SfN joined with both organizations to host a brain awareness event on the Hill.

SfN is also an active member of the Coalition for Life Sciences, which





**Left:** John Morrison, dean of Basic Sciences and the Graduate School of Biomedical Sciences at Icahn School of Medicine at Mount Sinai, explains sections of the brain to Rep. Chaka Fattah (D-PA) at SfN's Brain Awareness on the Hill event.

**Right:** Public outreach events during Brain Awareness Week gave young students hands-on learning experiences.

regularly briefs members of Congress on the importance of biomedical research funding and promotes policies that advance basic science and its role in medicine and other fields.

### International Efforts and a Focus on Animals in Research

Projects such as the BRAIN Initiative and the European Commission's Human Brain Project have inspired countries such as Japan, Israel, Australia, and China to invest in the future of neuroscience. These initiatives have the potential to advance the field and position it to develop new tools and technologies that will have groundbreaking implications for medical research.

SfN continues to work with global partners to advance neuroscience worldwide, emphasizing the international nature of scientific pursuits. A joint advocacy grants program with the Federation of European Neuroscience Societies (FENS) supported advocacy initiatives at the national level across Europe. In partnership with SfN, the International Brain Research Organization's Global Advocacy Committee is developing a similar program with

a global focus. SfN also supports national advocacy efforts in Canada and Mexico.

FENS and SfN co-sponsored an advocacy workshop at the FENS Forum 2014 in Milan focused on animal research. The symposium, "Advocacy and Transparency on Animals in Research," brought together EU and U.S. stakeholders to develop strategies on animals in research and served as a model for large-scale coordination for political and public advocacy.

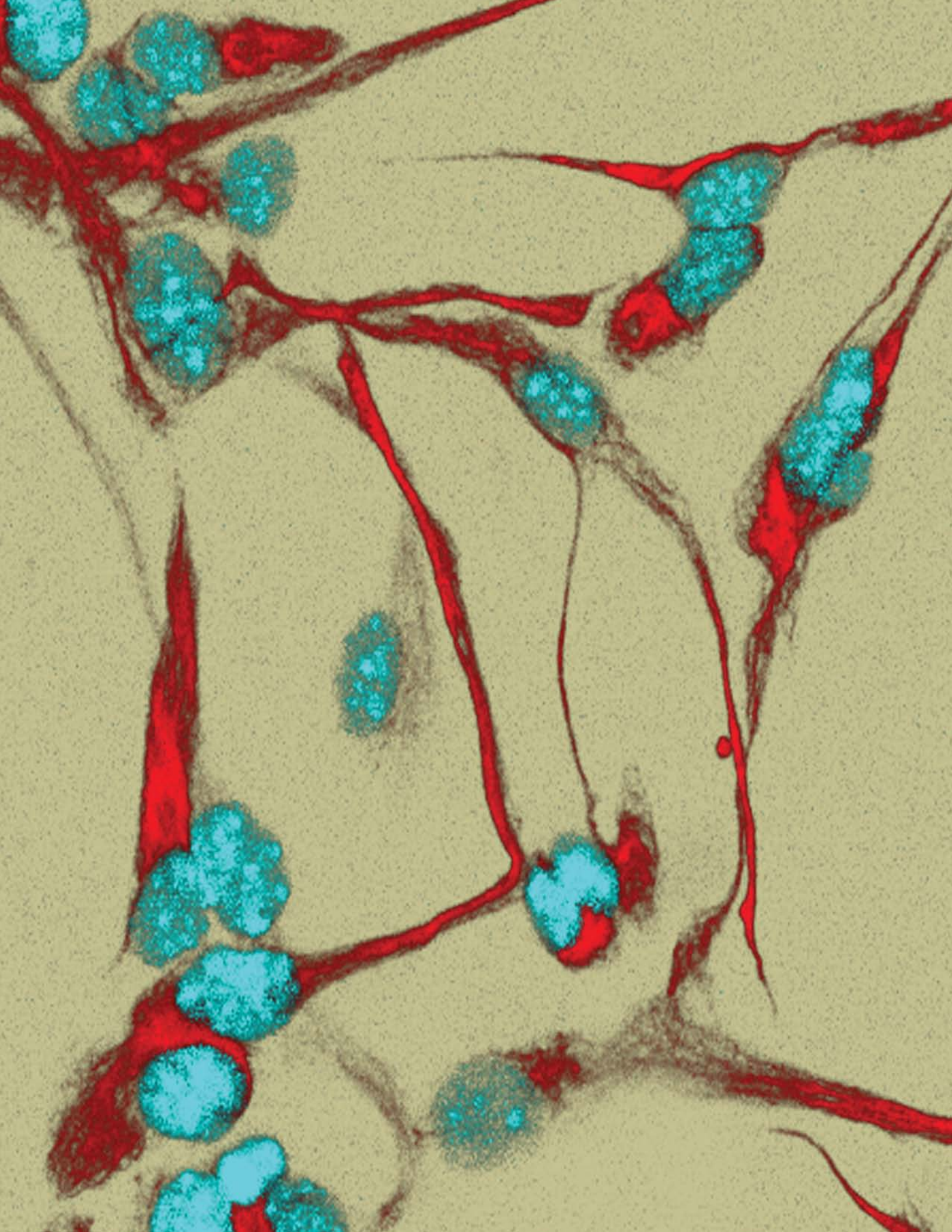
SfN supports members who work with animals and provides assistance for those members who have been targeted by activists. Recently, efforts have been made to improve and update the member support resources on SfN.org so that pertinent information is clear and readily available. Additionally, the Society continues to monitor legislation and policies that affect animal research, informing and involving members on relevant issues. One prevalent concern is the issue of airline transport and the need to ensure that laboratory animals are available for lifesaving biomedical research. SfN is working with its

*SfN remains dedicated to ensuring that global public investment in neuroscience research is at a level that matches the scientific opportunities that lie ahead.*

coalition partners and engaging membership around this issue.

SfN creates and disseminates factual information about the importance of the responsible use of animals in research. Under a grant from the Esther A. & Joseph Klingenstein Fund Inc. and collaborating with key partners, SfN has developed several resources on this topic for *BrainFacts.org* and *SfN.org*. The Society has focused on key audiences that commonly interface with the public, including educators, physicians, teachers, and medical students, to reach a broader audience.







# Disease-Causing Proteins

With an estimated 36 million cases of Alzheimer's and other dementias worldwide, scientists are searching for answers on many fronts. They are drawing clues from revolutionary research over the past 40 years that started with a focus on a group of rare brain diseases. A Nobel Prize-winning discovery is at the center of the story: A misfolded protein that is behind a mysterious group of brain disorders known as transmissible spongiform encephalopathies (TSEs) forever changed the way that scientists think about proteins and their roles in many neurodegenerative diseases.

## Rare Brain Disorders Traced to Proteins

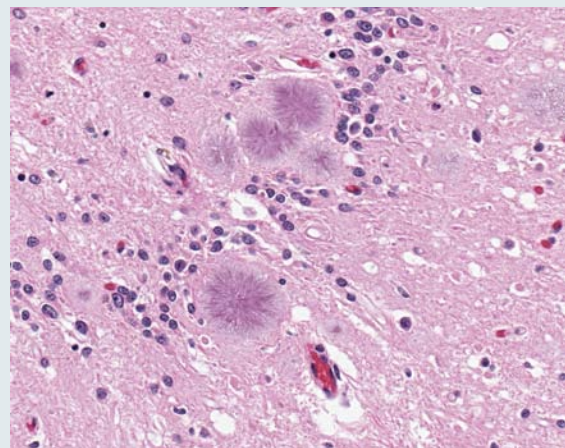
TSEs strike both people and animals. Creutzfeldt-Jakob disease (CJD) — a rare dementia that affects about one in every 1 million people each year — is one of the most well-known of the human TSEs. Animal TSEs include bovine spongiform encephalopathy (BSE), or mad cow disease, and scrapie, a neurological disease that affects sheep and goats.

In 1972, after meeting a patient with CJD, neurology resident Stanley Prusiner became determined to uncover the source of the disease. Because studies suggested CJD could be transmitted, many scientists believed a small virus was to blame. However, Prusiner's studies suggested otherwise. After a decade

of research, Prusiner tracked the agent causing the disease to a single protein, which he named "prion" (combining "protein" and "infectious").

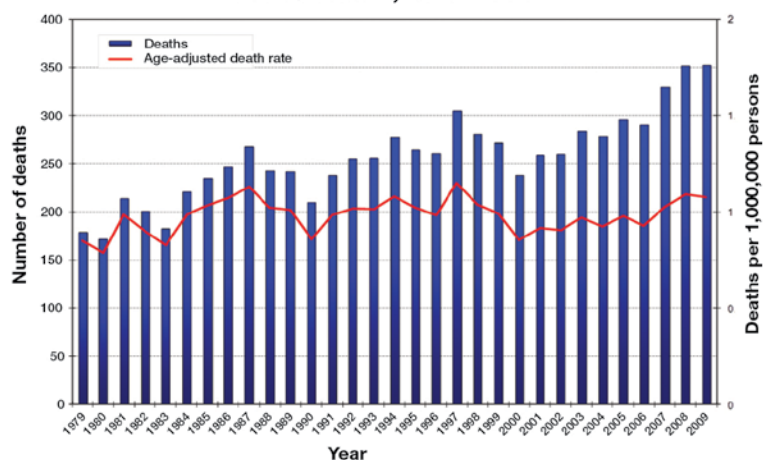
Scientists were shocked. How could a protein, which lacks genetic instructions, result in changes that cause disease? Many scientists questioned Prusiner's findings, suggesting that he had overlooked the true source of the mysterious diseases.

Despite immense skepticism, Prusiner continued his research. In 1984, he and his colleagues shocked scientists again with the discovery that a form of prion protein (PrP) is present in healthy people and animals. As it turns out, prion proteins can fold into two distinct shapes: One is harmless



In many neurodegenerative disorders, clumps of misfolded proteins called plaques and tangles build up in the brain, leading to nerve cell death. Research suggests that the misfolded proteins share similarities with prions, which also form plaques, as shown in variant Creutzfeldt-Jakob disease.

**Creutzfeldt-Jakob disease deaths and age-adjusted death rate, United States, 1979–2009**



Scientists studying the rare dementia Creutzfeldt-Jakob disease (CJD) uncovered information that has implications for more common dementias, such as Alzheimer's disease. The above chart shows the annual deaths related to CJD in the U.S.



and the other leads to disease (like CJD). Remarkably, the misfolded, disease-causing prions have the ability to “corrupt” the harmless versions, causing them to misfold as well.

## Prions Play Leading Role in Mad Cow Outbreak

Just as Prusiner’s ideas about prions were beginning to gain traction in the late 1980s, pockets of cattle in the United Kingdom began displaying aggressive behavior, weight loss, and difficulties standing — symptoms indicative of the neurodegenerative illness that would later come to be called mad cow disease.

An investigation soon revealed that the affected cattle had consumed prion-infected feed. By the time the animals showed signs of the disease, the infectious prion proteins had been silently corrupting healthy proteins in their brains for some time. As healthy proteins converted to the misfolded, disease-causing form, the areas of the brain where the misfolded proteins accumulated began to deteriorate.

Despite significant efforts to keep BSE from spreading, some people unknowingly consumed meat from the infected cattle. Research suggests the consumption of beef from cattle with BSE may have led to the emergence of a disease similar to CJD, called variant CJD (vCJD), that began affecting and killing younger people in the United Kingdom in 1996.

## DID YOU KNOW?

Nobel laureate Stanley Prusiner coined the term “prion” (combining the words “protein” and “infectious”).

Prions can fold into two distinct shapes: One is harmless and the other leads to disease.

Disease-causing prions have the ability to “corrupt” harmless prions.

Recent studies suggest healthy prions may help protect neurons during stress or disease.

## Future Treatments for Neurodegenerative Disease

The misfolded prion proteins present in TSEs tend to cluster into thick, compact sheets that are highly resistant to heat, the body’s immune system, and even protein-busting enzymes. Clumps of the abnormal proteins can grow in the brain for years without notice. Eventually, this buildup blocks the ability of nerve cells to communicate and causes cell death. As scientists learned more about the infectious form of prion proteins in TSEs, they began to look more closely at the role of misfolded proteins in other neurodegenerative diseases.

Misfolded proteins also lead to a buildup of toxic plaques and tangles in the brains of patients with Alzheimer’s, Parkinson’s, and Huntington’s diseases. New research suggests the proteins in these diseases share similarities with the misfolded, disease-causing prion proteins. For example, some animal

studies show that beta-amyloid protein, which is associated with Alzheimer’s disease, can corrupt other proteins and cause new protein plaques to form when injected into the brain.

Scientists hope that efforts to uncover how disease-causing proteins corrupt healthy proteins in prion diseases and Alzheimer’s disease will inform future treatments for slowing the progression of other neurodegenerative conditions.

In his effort to identify the agent responsible for the rare but deadly prion diseases, Prusiner made a discovery that has far-reaching health implications, as is often the case with basic research. Sustained funding of basic science continues to be vital to scientists’ quest to understand the events that lead to protein misfolding in the brain and to develop new therapies for the millions of people worldwide suffering from neurodegenerative diseases.

# Financial

## AND Organizational HIGHLIGHTS

### Sound Financial Management in a Challenging Environment

In FY2014, SfN maintained a sound financial position that enabled continued investment in programs and services that add member value. While the Society experienced some pressures on revenue due to flat levels of funding for biomedical research in many members' countries, the SfN Council ensured a consistent level of support in FY2014 for vital programs that help serve the field in this challenging environment. This solid position was made possible by the thoughtful long-term planning efforts developed by SfN volunteer leaders over the past decade. These plans incorporate professional society operations, the real estate investment in its Washington, DC, headquarters building, and a forward-looking reserve strategy. Based on preliminary (unaudited) figures, in FY2014, consolidated net operating revenue totaled about \$320,000 on total revenue of \$25.4 million.

During FY2014, Council approved the creation of a strategic investment fund. These funds are allocated from reserves to offset the costs of projects deemed to be strategic in nature. The two approved strategic initiatives are *eNeuro*, SfN's new online open-access journal, and an online member platform, a digital content portal for educational and collaborative



The Friends of SfN Fund supports young neuroscientists through travel awards, allowing them to experience SfN's annual meeting.

resources. Both projects met high criteria established by the SfN Council for deployment of funds, as they transform the ability of SfN to serve the membership's evolving scientific and professional development needs.

The value of SfN's long-term investments increased to \$52.1 million as of June 30. This has been accomplished thanks to prudent policies developed by Council, strong market performance of a diversified investment portfolio, and consistent financial stewardship overseen by an investment committee of SfN leaders and pro bono investment professionals. The reserve

fund ensures SfN's ability to withstand unexpected external events and invest selectively in key programs.

Revenues were driven by a large membership base and:

- Stable library subscriptions to *The Journal of Neuroscience*
- A successful annual meeting in San Diego
- Income from 1121 Properties LLC, SfN's office building and headquarters
- Grant support from NIH and NSF
- Private grants, corporate support, and individual donations

Continued external funding supports initiatives including annual

meeting events, awards and prizes, and support for initiatives such as *BrainFacts.org*. In FY2014, external revenue totaled nearly \$1 million. The Society's annual fund campaign, the Friends of SfN Fund, supports key initiatives, and SfN gratefully acknowledges contributions from about 400 donors.

## Communication and Technology: Looking Forward

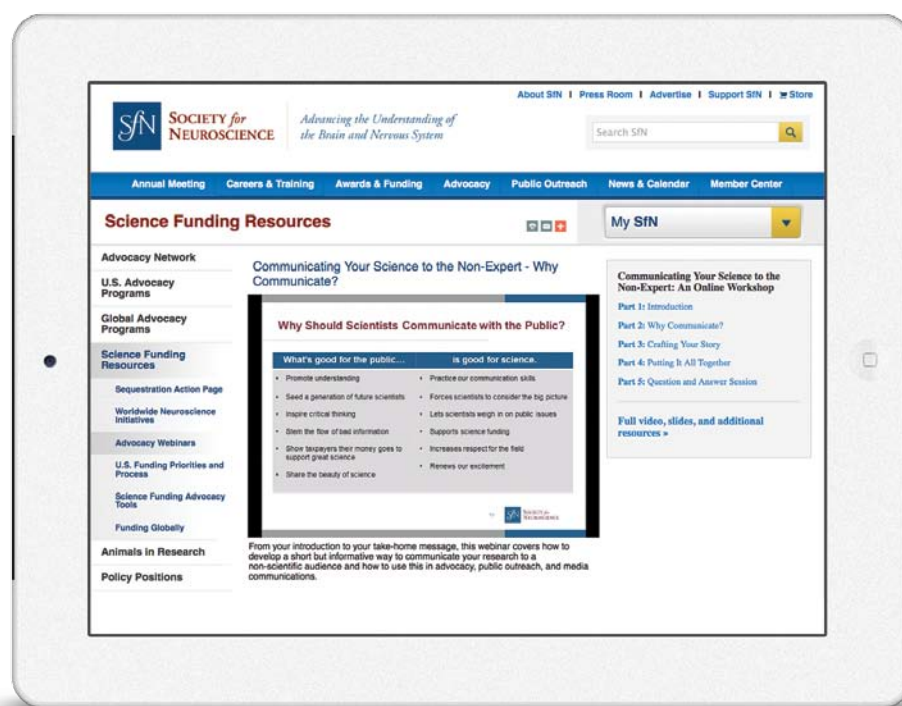
SfN is building on the strong foundation laid with the launch of its redesigned website in 2013. Through strategic investment, two primary areas of focus have emerged: 1) expanding and enhancing venues for high-quality, scientific exchange with the creation of *eNeuro*, a new open-access, rapid-publication journal and 2) offering targeted, year-round training, career, and professional

skills development opportunities to members in a platform that fosters communication and collaboration. SfN.org will remain "the hub" for the neuroscience community by continuing to feature core content from traditional venues like the annual meeting and *The Journal of Neuroscience*, while also integrating exciting information from these new resources.

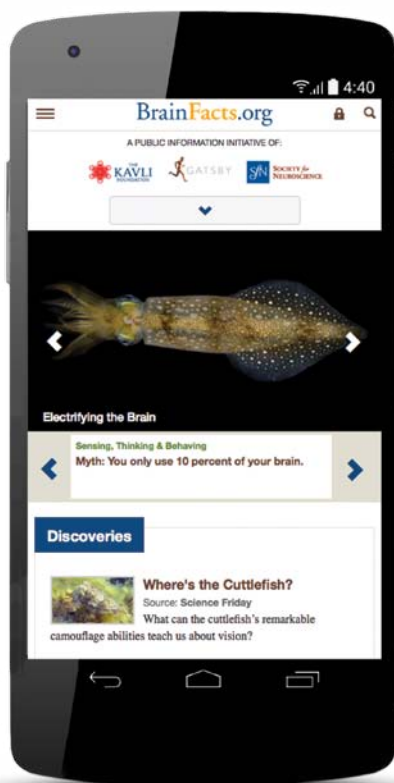
In addition to focusing on value and exchange, SfN is committed to

improving user experience and accommodating a growing mobile audience. SfN made enhancements to the annual meeting mobile app, launched a new Android app for *The Journal of Neuroscience*, and embarked on a comprehensive responsive design project to create a better user experience for visitors to *BrainFacts.org* and SfN.org, regardless of the device or screen size.

As the Society and its programs and services grow, there is a continued focus on the infrastructure, specifically on real-time analytics from diverse data sources, in an effort to better serve constituents. SfN is also actively working to reduce the number of places that members need to log in and maintain profiles in order to improve user experience. Both efforts enable data integrity and analysis, which ultimately provide better support and service, ensuring that members, attendees, or potential constituents are served efficiently and effectively.

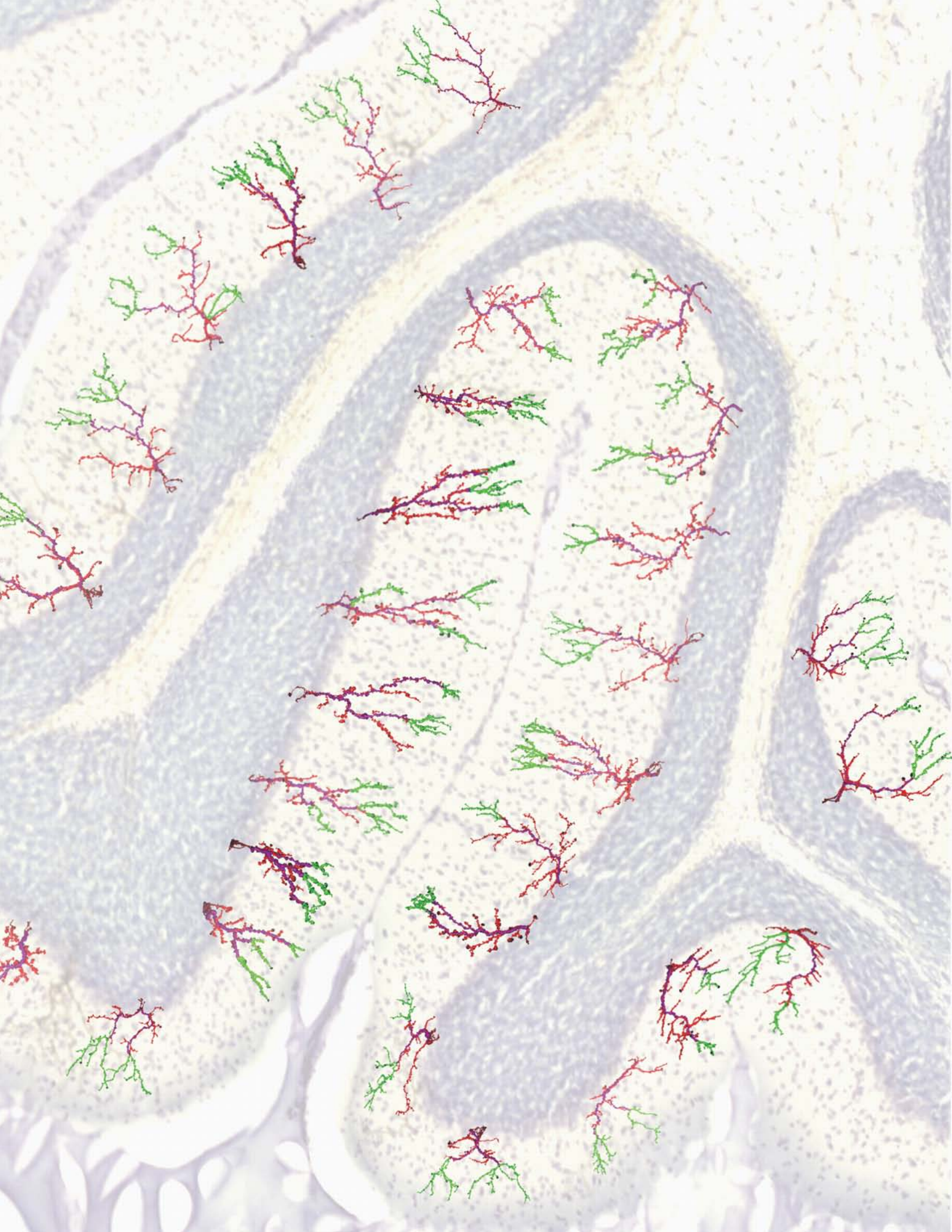


In its ongoing effort to add member value, SfN is making strategic investments to grow and enhance its online members resources, such as this "Communicating Your Science to the Non-Expert" webinar.



SfN continues to invest in and enhance its online delivery systems and increase reliability of online platforms, including recently updating *BrainFacts.org's* mobile capabilities.





# PHOTOGRAPHY CREDITS

**FRONT COVER:** Murine Moloney leukemia virus mediated labeling of mitochondria (green) in adult-generated neurons (red) in the mouse hippocampal dentate gyrus. Dentate granule neurons are labeled with calbindin (magenta).

Courtesy, with permission: Kathrin Steib, Iris Schäffner, Ravi Jagasia, Birgit Ebert, and D. Chichung Lie, 2014, *The Journal of Neuroscience* 34: 6624-6633.

**INSIDE FRONT COVER:** High-resolution optical imaging of intrinsic metabolic brain activity reveals spatial organization of responses to tone scales in five auditory cortical areas of the rat. The rainbow progression from blue to green indicates sensitivity spanning low to high notes in a tone scale.

Courtesy with permission: Nathan C. Higgins, Douglas A. Storace, Monty A. Escabí, and Heather L. Read, 2010, *The Journal of Neuroscience* 30: 14522-14532.

**PAGE 1:** Thumbnails (L to R): Copyright 2013, Society for Neuroscience. All rights reserved. Photo by Joe Shymanski; Courtesy, with permission: Tyszká JM, et al., *The Journal of Neuroscience* 2011, 31(42): 15154-15162; Courtesy of the Centers for Disease Control.

**PAGE 2:** Copyright 2014, Society for Neuroscience. All rights reserved. Photo by Joe Shymanski.

A high-powered view of the optic chiasm of a 72 h zebrafish larva that is mutant for the axonal guidance receptor robo2. Loss of robo2 makes retinal axons insensitive to slits, repellents that help guide them across the midline and to their targets. Anterior is to the top, and the eyes are out of frame on either side. Retinal axons are color coded depending on their dorsal-ventral position in the brain, with cool colors indicating ventral levels near the chiasm and warm colors indicating more dorsal levels.

Courtesy with permission: Sreekanth H. Chalasani, Angela Sabol, Hong Xu, Michael A. Gyda, Kendall Rasband, Michael Granato, Chi-Bin Chien, and Jonathan A. Raper, 2007, *The Journal of Neuroscience* 27: 973-980.

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**PAGE 8:** Courtesy, with permission: Pascale Quilichini; screenshot of eNeuro.org.

**PAGE 9:** Confocal immunofluorescence image showing localization of the transcriptional coactivator Crtc1 in neurons of the adult mouse hippocampus.

Courtesy with permission: Arnaldo Parra-Damas, Jorge Valero, Meng Chen, Judit España, Elsa Martín, Isidro Ferrer, José Rodríguez-Alvarez, and Carlos A. Saura, 2014, *The Journal of Neuroscience* 34: 5776-5787.

**PAGE 10:** Courtesy of Donnay GF, Rankin SK, Lopez-Gonzalez M, Jiradejvong P, Limb CJ (2014) Neural Substrates of Interactive Musical Improvisation: An fMRI Study of 'Trading Fours' in Jazz. *PLoS ONE* 9(2): e88665. doi:10.1371/journal.pone.0088665.

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**PAGE 21:** Confocal image showing brain-derived adult neural precursor cells (NPCs, turquoise) that express nestin (red).

Courtesy with permission: Soheila Karimi-Abdolrezaee, Eftekhari Eftekharpour, Jian Wang, Desiree Schut, and Michael G. Fehlings, 2010, *The Journal of Neuroscience* 30: 1657-1676.

**PAGE 22:** Photos courtesy of the Centers for Disease Control.

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**PAGE 25:** Screenshot of SfN.org; screenshot of *BrainFacts.org*.

**PAGE 26:** Digitally reconstructed rat cerebellar climbing fibers arbitrarily placed on a sample parasagittal section and colored by morphologically differentiated branch types: primary (purple), tendril (red), retrograde (maroon), and distal (green). Radius thickened 4x for clearer visualization. Climbing fiber histology anterogradely stained with biotinylated dextran amine and interneuron somata counterstained with thionine (blue). Courtesy with permission: Kerry M. Brown, Izumi Sugihara, Yoshikazu Shinoda, and Giorgio A. Ascoli, 2012, *The Journal of Neuroscience* 32: 14670-14684.

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AUDITED

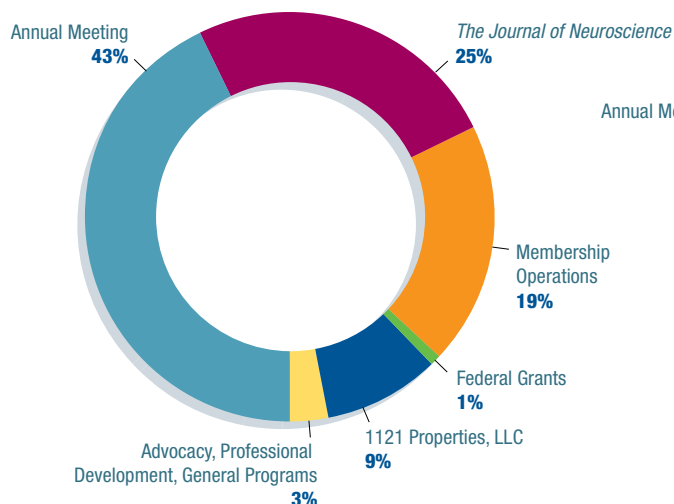
# Financial Statements

## Current and Past Fiscal Year Revenue and Expenditures by Activity\*

### FY2014 Revenue

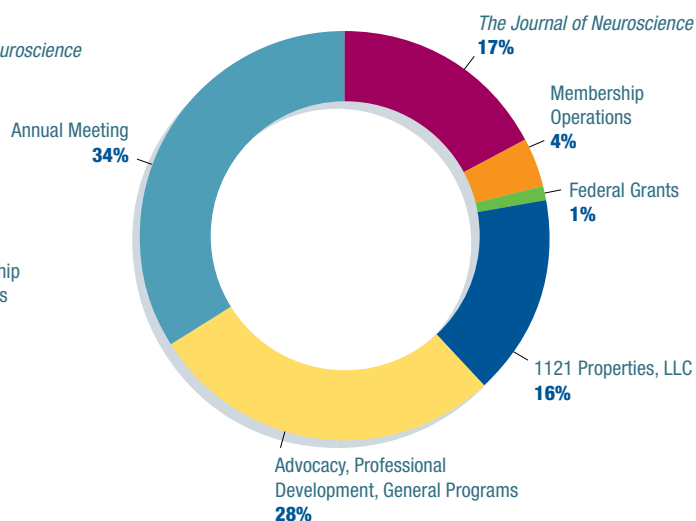
**\$28,535,229\***

(excluding investment gain or loss)



### FY2014 Expense

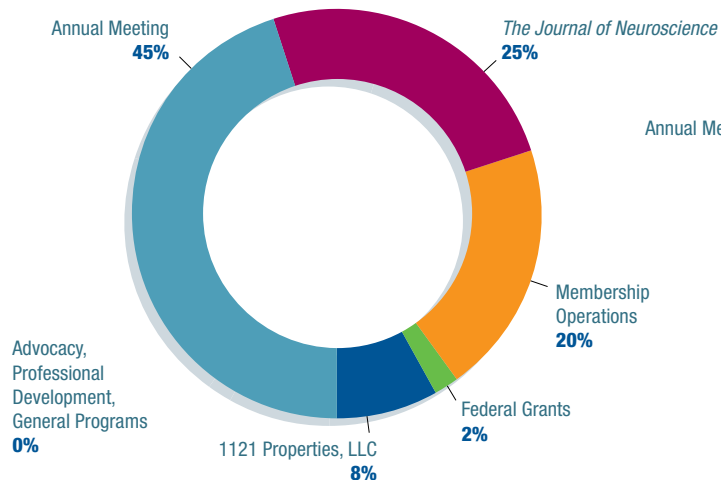
**\$27,661,859**



### FY2013 Revenue

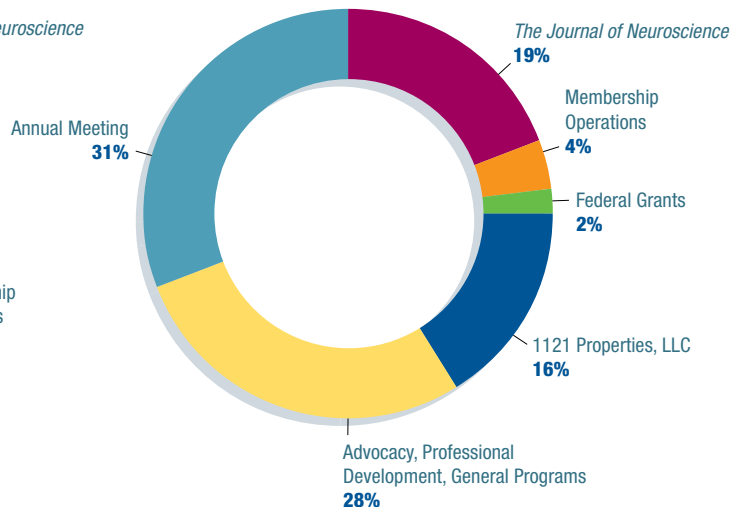
**\$28,379,913\***

(excluding investment gain or loss)



### FY2013 Expense

**\$27,745,509**



\*Data includes the full recognition of multiyear grants





#### INDEPENDENT AUDITOR'S REPORT

To the Council  
Society for Neuroscience and 1121 Properties, LLC  
Washington, D.C.

We have audited the accompanying consolidated financial statements of the Society for Neuroscience (SfN) and 1121 Properties, LLC (the LLC), collectively the Society, which comprise the consolidated statement of financial position as of June 30, 2014, and the related consolidated statements of activities and change in net assets and cash flows for the year then ended, and the related notes to the consolidated financial statements.

#### MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

#### AUDITOR'S RESPONSIBILITY

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. 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 consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### OPINION

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Society as of June 30, 2014, and the consolidated change in its net assets and its consolidated cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

#### REPORT ON SUMMARIZED COMPARATIVE INFORMATION

We have previously audited the Society's 2013 consolidated financial statements, and we expressed an unmodified audit opinion on those audited consolidated financial statements in our report dated October 7, 2013. In our opinion, the summarized comparative information presented herein as of and for the year ended June 30, 2013, is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

October 2, 2014

4550 MONTGOMERY AVENUE • SUITE 650 NORTH • BETHESDA, MARYLAND 20814  
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I-3

## Consolidated Statement of Financial Position *(for the year ended June 30, 2014)*

### ASSETS

#### CURRENT ASSETS

	2014	2013
Cash and cash equivalents	\$ 2,934,744	\$ 2,502,546
Accounts receivable	176,778	172,484
Grants receivable (Note 3)	638,569	501,310
Prepaid expenses	902,543	1,109,245
Total current assets	4,652,634	4,285,585

#### NON-CURRENT ASSETS

Investments (Notes 2,13 and 15)	52,063,239	44,850,510
Grants receivable, long-term (Note 3)	755,641	509,292
Loan receivable (Note 4)	230,246	170,450
Property, furniture, equipment, and improvements, net of accumulated depreciation and amortization of \$12,609,780 for 2014 (Notes 5, 10, and 11)	31,238,052	31,614,658
Deferred rent receivable (Note 8)	773,493	736,140
Deposits	3,630	3,630
Total non-current assets	85,064,301	77,884,680

#### TOTAL ASSETS

\$ 89,716,935 \$ 82,170,265

### LIABILITIES AND NET ASSETS

#### CURRENT LIABILITIES

Current portion of notes payable (Note 10)	\$ 588,429	\$ 552,251
Accounts payable and accrued liabilities	2,056,490	2,194,707
Deferred revenue	7,767,960	7,876,998
Total current liabilities	10,412,879	10,623,956

#### NON-CURRENT LIABILITIES

Notes payable, net of current portion (Note 10)	15,886,521	16,474,950
Bonds payable (Note 11)	12,000,000	12,000,000
Interest rate swap obligation (Notes 12 and 15)	6,823,292	6,764,112
Total non-current liabilities	34,709,813	35,239,062
Total liabilities	45,122,692	45,863,018

### NET ASSETS

Unrestricted	39,775,578	33,499,733
Board designated	1,384,680	-
Total unrestricted	41,160,258	33,499,733
Temporarily restricted (Note 6)	2,564,596	1,938,778
Permanently restricted (Note 16)	869,389	868,736
Total net assets	44,594,243	36,307,247

#### TOTAL LIABILITIES AND NET ASSETS

\$ 89,716,935 \$ 82,170,265

See accompanying notes to consolidated financial statements.



## Consolidated Statement of Activities and Change in Net Assets (for the year ended June 30, 2014)

	2014			2013	
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	Total
<b>REVENUE</b>					
Membership dues	\$ 5,315,567	\$ -	\$ -	\$ 5,315,567	\$ 5,629,897
<i>The Journal of Neuroscience</i>	7,093,660	-	-	7,093,660	6,998,078
Annual meeting	11,933,961	296,500	-	12,230,461	13,131,973
Investment income (Note 2)	7,154,176	318,630	-	7,472,806	4,686,324
Property management revenue (Note 8)	2,556,315	-	-	2,556,315	2,241,179
General program revenue	753,343	585,230	653	1,339,226	378,786
Net assets released from donor restrictions (Note 7)	574,542	(574,542)	-	-	-
Total revenue	35,381,564	625,818	653	36,008,035	33,066,237
<b>EXPENSES</b>					
<b>Program Services:</b>					
<i>The Journal of Neuroscience</i>	4,746,312	-	-	4,746,312	5,229,250
Annual meeting	9,401,073	-	-	9,401,073	8,669,259
Grants	378,594	-	-	378,594	619,660
General programs (Note 2)	7,836,438	-	-	7,836,438	7,695,379
Total program services	22,362,417	-	-	22,362,417	22,213,548
<b>Supporting Services:</b>					
Membership development	956,403	-	-	956,403	1,184,026
Property management expenses	4,343,039	-	-	4,343,039	4,347,935
Total supporting services	5,299,442	-	-	5,299,442	5,531,961
Total expenses	27,661,859	-	-	27,661,859	27,745,509
Change in net assets before other item	7,719,705	625,818	653	8,346,176	5,320,728
<b>OTHER ITEM</b>					
Unrealized (loss) gain on interest rate swap (Note 12)	(59,180)	-	-	(59,180)	3,572,997
Total other item	(59,180)	-	-	(59,180)	3,572,997
Change in net assets	7,660,525	625,818	653	8,286,996	8,893,725
Net assets at beginning of year	33,499,733	1,938,778	868,736	36,307,247	27,413,522
<b>NET ASSETS AT END OF YEAR</b>	<b>\$ 41,160,258</b>	<b>\$ 2,564,596</b>	<b>\$ 869,389</b>	<b>\$ 44,594,243</b>	<b>\$ 36,307,247</b>

See accompanying notes to consolidated financial statements.

## Consolidated Statement of Cash Flow *(for the year ended June 30, 2014)*

### CASH FLOWS FROM OPERATING ACTIVITIES

	2014	2013
Change in net assets	\$ 8,286,996	\$ 8,893,725
<b>Adjustments to reconcile change in net assets to net cash provided by operating activities:</b>		
Depreciation and amortization	1,764,278	1,749,912
Realized gain on investments	(2,357,946)	(1,275,201)
Unrealized gain on investments	(3,744,858)	(2,384,771)
Unrealized loss (gain) on interest rate swap	59,180	(3,572,997)
<b>(Increase) decrease in:</b>		
Accounts receivable	(4,294)	(44,537)
Grants receivable	(383,608)	510,950
Prepaid expenses	206,702	(181,140)
Deferred rent receivable	(37,353)	(130,965)
<b>Increase (decrease) in:</b>		
Accounts payable and accrued liabilities	(138,217)	380,525
Deferred revenue	(109,038)	18,640
Net cash provided by operating activities	3,541,842	3,964,141

### CASH FLOWS FROM INVESTING ACTIVITIES

Purchase of investments	(15,620,410)	(18,574,392)
Proceeds from sale of investments	14,510,485	15,527,198
Purchase of property, furniture, equipment, and improvements	(1,387,672)	(1,521,514)
Disbursement of loan	(59,796)	-
Net cash used by investing activities	(2,557,393)	(4,568,708)

### CASH FLOWS FROM FINANCING ACTIVITIES

Payments on note payable	(552,251)	(518,298)
Net cash used by financing activities	(552,251)	(518,298)
Net increase (decrease) in cash and cash equivalents	432,198	(1,122,865)
Cash and cash equivalents at beginning of year	2,502,546	3,625,411

### CASH AND CASH EQUIVALENTS AT END OF YEAR

\$ 2,934,744      \$ 2,502,546

### SUPPLEMENTAL INFORMATION:

Interest Paid      \$ 1,626,522      \$ 1,666,803

See accompanying notes to consolidated financial statements.

## 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND GENERAL INFORMATION

### Organization

The Society for Neuroscience (SfN) is a nonprofit organization, incorporated in the District of Columbia. The primary purposes of SfN are to advance the understanding of the brain and nervous system, including the part it plays 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; and to inform the general public on the results and implications of current research in this area.

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 LLC is to engage in the business of performing services as directed by SfN 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 for Neuroscience and 1121 Properties, LLC (collectively, the Society) as of June 30, 2014. The financial statements of the two organizations have been consolidated because they are under common control. All intercompany transactions have been eliminated during consolidation.

### Basis of presentation

The accompanying consolidated financial statements are presented on the accrual basis of accounting and in accordance with FASB ASC 958-010, Not-for-Profit Entities, Consolidation.

The consolidated financial statements include certain prior year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with generally accepted accounting principles. Accordingly, such information should be read in conjunction with the Society's consolidated financial statements for the year ended June 30, 2013, from which the summarized information was derived.

### Cash and cash equivalents

The Society considers all cash and other highly liquid investments with maturities of three months or less to be cash equivalents, excluding money market funds held by investment managers in the amount of \$698,770 for the year ended June 30, 2014.

Bank deposit accounts are insured by the Federal Deposit Insurance Corporation ("FDIC") up to a limit of \$250,000. At times during the year, the Society maintains cash balances in excess of the FDIC insurance limits. Management believes the risk in these situations to be minimal.

### Investments

The Society invests in shares of individual securities or shares held in investment funds, which include bonds, stocks, money market funds held for investment purposes, and limited partnerships. Investment fund managers trade in various domestic and foreign financial markets, which carry a certain amount of risk of loss.

Investments are stated at their readily determinable fair value, based on quoted market prices at the reporting date, or in absence of such quoted market price, a reasonable estimate of fair value as approved by management. Realized and unrealized gains and losses are included in investment income in the Consolidated Statement of Activities and Change in Net Assets.

The fair value of financial instruments is determined by reference to various market data and other valuation techniques as appropriate. Credit risk from financial instruments relate to the possibility that invested assets within a particular industry segment may experience loss due to market conditions. The Society has diversified its financial instruments to help ensure that no one industry segment represents a significant concentration of risk.

Although management uses its best judgment at estimating fair value of the underlying assets for its investments, there are inherent limitations in any valuation technique. Therefore, the value is not necessarily indicative of the amount that could be realized in a current transaction. Future events will also affect the estimates of fair value, and the effect of such events on the estimates of fair value could be material.

### Grants and accounts receivable

Grants receivable that are expected to be collected in future years are recorded at fair value, measured as the present value of their future cash flows. The discounts on these amounts are computed using risk-adjusted interest rates applicable to the years in which the promises are received. Amortization of the discounts is included in grants and contribution revenue. Accounts receivable are recorded at their net realizable value, which approximates fair value. All grants and accounts receivable

are considered by management to be fully collectible. Accordingly, an allowance for doubtful accounts has not been established.

### Property, furniture, equipment, and improvements

Property, furniture, equipment, and improvements are stated at cost. Property, furniture, and equipment are depreciated on a straight-line basis over the estimated useful lives of the related assets, generally three to 10 years. The building and building costs are recorded at cost and are depreciated over 39 years, while leasehold and tenant improvements are depreciated over 15 years and the life of the tenant lease, respectively.

Expenditures for major repairs and improvements with useful lives greater than one year and in excess of \$3,000 are capitalized, and expenditures of lesser amounts for minor and maintenance costs are expensed when incurred.

### Income taxes

The Society is exempt from federal income taxes under Section 501(c)(3) of the Internal Revenue Code. In addition, the Society qualifies for the charitable contribution deduction under Section 170(b)(1)(A) and has been classified as an organization that is not a private foundation under Section 509(a)(2) of the Code. Accordingly, no provision for income taxes has been made in the accompanying consolidated financial statements.

The Society is required to report unrelated business income to the Internal Revenue Service and the appropriate state taxing authorities. Unrelated business income consists primarily of debt financed rental income, advertising in *The Journal of Neuroscience*, and a jobs board.

The Society leases office space to several unaffiliated tenants. The activity is considered to be unrelated business activity under Internal Revenue Service regulations. Defined net income from the operations is taxable. To date, there has been a loss from unrelated business activities.

As of June 30, 2014, there were net operating loss carryforwards of approximately \$1,122,934. No deferred tax asset has been recognized due to uncertainty realization. The net operating losses expire between 2027 and 2033.

For the year ended June 30, 2014, the Society has documented its consideration of FASB ASC 740-10, *Income Taxes*, that provides guidance for reporting uncertainty in income taxes and has determined that no material uncertain tax positions qualify for either recognition or disclosure in the consolidated financial statements.

The Federal Form 990, *Return of Organization Exempt from Income Tax*, is subject to examination by the Internal Revenue Service, generally for three years after it is filed.

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

### Deferred revenue

Deferred revenue consists of member dues, journal subscriptions, and annual meeting-related fees. The Society recognizes member dues and journal subscriptions on a pro-rata basis over an annual period, while annual meeting fees are recorded at the time the annual meeting occurs.

### Net asset classification

The net assets of the Society are reported in four 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 and include both internally designated and undesignated resources.

- **Board designated net assets:** During FY2014, the SfN Council approved the creation of a Strategic Investment Fund. The value of the fund represents approximately 1 percent of the value of the reserves each year for three years, or approximately \$1,500,000. These funds are allocated from reserves to offset the costs of projects deemed to be strategic in nature. The two approved strategic initiatives to date are *eNeuro* — SfN's new online open-access journal launching in fall 2014, and the Online Member Platform — a digital content portal for educational and collaborative resources. Both projects met high criteria established for deployment of funds as they transform the ability of SfN to serve the membership's evolving scientific and professional development needs. In August 2014, the SfN Council decided that moving forward \$500,000 will be allocated from reserves annually to offset the costs of projects deemed to be strategic in nature.

- **Temporarily restricted net assets** include revenue and contributions subject to donor-imposed stipulations that will be met by the actions of the Society 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.

- **Permanently restricted net assets** represent funds restricted by the donor to be maintained in perpetuity by the Society. There are restrictions placed on the use of investment earnings from these endowment funds.



## Notes to Consolidated Financial Statements *(for the year ended June 30, 2014)*

### Revenue recognition

Membership dues and journal subscription revenues are recorded as revenue in the year to which the revenue is related. Temporarily restricted contributions and grants are recorded as revenue in the year notification is received from the donor. Temporarily restricted 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. Such contributions and grants received in excess of expenses incurred are shown as temporarily restricted net assets in the accompanying financial statements. The Society recognizes annual meeting fees when the related event has occurred.

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

Rental income is recognized on a straight-line basis. The leases call for rent abatement and/or annual rental payment escalations.

The difference between rental income received and rental income recognized on the straight-line basis is recorded as deferred rents receivable in the accompanying Consolidated Statement of Financial Position. Deferred revenue is recognized for rental payments received in advance of the period earned.

### Use of estimates

The preparation of consolidated 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 consolidated 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.

### Risks and uncertainties

The Society invests in various investment securities. Investment securities are exposed to various risks such as interest rates and market and credit risks. Because of the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the accompanying consolidated financial statements.

### Fair value measurement

The Society adopted the provisions of FASB ASC 820, *Fair Value Measurement*. FASB ASC 820 defines fair value, establishes a framework for measuring fair value, establishes a fair value hierarchy based on the quality of inputs (assumptions that market participants would use in pricing assets and liabilities, including assumptions about risk) used to measure fair value, and enhances disclosure requirements for fair value measurements. The Society accounts for a significant portion of its financial instruments at fair value or considers fair value in its measurement.

## 2. INVESTMENTS

Investments consisted of the following as of June 30, 2014:

	Cost	Fair Value
Money market funds	\$ 698,770	\$ 698,770
Corporate fixed income	1,366,725	1,647,736
Exchange traded funds & closed-end funds (ETF & CEFs)	5,458,133	7,416,615
U.S. government obligations	4,706,218	4,685,538
Mutual funds	8,326,365	8,411,667
Equities	14,609,692	21,507,789
Alternative investments	7,421,975	7,695,124
<b>TOTAL LONG-TERM INVESTMENTS</b>	<b>\$ 42,587,878</b>	<b>\$ 52,063,239</b>

Alternative investments consisted of the following as of June 30, 2014:

Investment Type	Amount	Liquidity
Cayman Islands Exempted Company	\$ 2,323,500	Quarterly with 90 days prior notice
Vintage Fund V Offshore LP	639,374	None until dissolution or transfer to another party
Vintage Fund VI Offshore LP	893,563	None until dissolution or transfer to another party
SkyBridge Multi-Advisor Hedge Fund	2,219,817	Quarterly with 90 days prior notice
Pimco Bravo II	239,983	None until dissolution or transfer to another party
Orion Future Funds	1,378,887	Monthly, 30 days
	<b>\$ 7,695,124</b>	

As of June 30, 2014, the Society has \$3,645,329 in uncalled commitments. Investment income included the following as of June 30, 2014:

Interest and dividends	\$ 1,370,002
Realized gain on investments	2,357,946
Unrealized gain on investments	3,744,858
<b>TOTAL INVESTMENT INCOME</b>	<b>\$ 7,472,806</b>

The investment management fee expense totaled \$270,055 for the year ended June 30, 2014, which is included in general programs expense.

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 operating expense budget. Based upon the intent of the Society, assets of the strategic reserve pool are classified as long term.

## 3. GRANTS RECEIVABLE

As of June 30, 2014, the Society has received promises to give totaling \$1,404,035.

Grants due in more than one year have been recorded at the present value of the estimated cash flows, using a discount rate of 0.85 percent. Grants are due as follows as of June 30, 2014:

Less than one year	\$ 638,569
One to five years	765,466
<b>Total</b>	<b>1,404,035</b>
Less: Allowance to discount balance to present value	(9,825)
<b>NET GRANTS RECEIVABLE</b>	<b>\$ 1,394,210</b>

## 4. LOAN RECEIVABLE

In February 2012, the LLC entered into a loan agreement in the amount of \$150,000 with a tenant. Repayments will commence on the 19th month after the lease commencement. The LLC charges an interest rate of 7 percent. In September 2013, the LLC entered into an amended agreement with the tenant to defer the onset of the loan payment to begin on Jan. 1, 2015, with interest continuing to accrue on the loan balance through December 2014. Additionally, the tenant was granted a 75 percent rent abatement commencing in June 2013 and continuing until December 2015. The abated rent has been applied to the loan balance and will be repaid by the tenant over monthly installments as noted above. The total accrued interest receivable from the tenant at June 30, 2014, is \$29,316. The loan amortization will remain at five years.

The following is a schedule of required future minimum principal payments to be received under the loan agreement as of June 30, 2014:

Year Ending June 30,	
2015	\$ 14,599
2016	30,771
2017	32,996
2018	35,381
Thereafter	189,493
<b>Total minimum payments</b>	<b>303,240</b>
Less: Future rent abatement and accrued interest	(72,994)
	<b>\$ 230,246</b>

## Notes to Consolidated Financial Statements *(for the year ended June 30, 2014)*

### 5. PROPERTY, FURNITURE, EQUIPMENT, AND IMPROVEMENTS

As of June 30, 2014, property, furniture, equipment, and improvements consisted of the following:

Land	\$ 7,150,400
Building	23,086,859
Building improvements	6,136,725
Furniture	1,644,260
Computer equipment	3,558,368
Leasing commissions	1,190,448
Other	1,080,772
	<b>43,847,832</b>
Less: Accumulated depreciation and amortization	(12,609,780)
<b>PROPERTY, FURNITURE, EQUIPMENT, AND IMPROVEMENTS, NET</b>	<b>\$ 31,238,052</b>

Depreciation and amortization expense totaled \$1,764,278 for the year ended June 30, 2014.

### 6. TEMPORARILY RESTRICTED NET ASSETS

Temporarily restricted net assets consisted of the following as of June 30, 2014:

Julius Axelrod Prize	\$ 568,980
Donald B. Lindsley Prize	7,500
Jacob P. Waletzky Award	676,806
BrainFacts.org	342,212
Elsevier Dialogues Series Support	20,000
Albert and Ellen Grass Lecture	20,000
David Kopf Lecture on Neuroethics	20,000
Professional Development Committee (PDC) Travel Awards	5,000
Peter and Patricia Gruber Award	193,479
Janett Rosenberg Trubatch Award	9,958
Astrazeneca Young Investigator	25,000
Latin American Training Program	497,781
Science Educator Award	10,000
Nemko Prize in Cellular or Molecular Neuroscience	15,000
Restrictions from Endowment	152,880
<b>TOTAL TEMPORARILY RESTRICTED NET ASSETS</b>	<b>\$ 2,564,596</b>

### 7. NET ASSETS RELEASED FROM RESTRICTIONS

The following temporarily restricted net assets were released from donor restrictions by incurring expenses, which satisfied the restricted purposes specified by the donors:

Julius Axelrod Prize	\$ 33,724
Donald B. Lindsley Prize	7,500
Jacob P. Waletzky Award	33,552
Bernice Grafstein Award	2,400
Engaging the Public About Animal Research	37,625
BrainFacts.org	99,507
Albert and Ellen Grass Lecture	20,000
David Kopf Lecture on Neuroethics	20,000
The Fred Kavli Public Symposium	15,000
Peter and Patricia Gruber Award	65,000
Professional Development Committee (PDC) Travel Awards	30,500
Presidential Special Lecture	60,000
Nemko Prize in Cellular or Molecular Neuroscience	7,500
Short Course	2,000
Meet-the-Experts	1,000
Dialogues Series Lecture	20,000
Chapter Travel Award Program	15,500
Adoption and Integration Program	17,000
Latin American Training Program	22,846
Janett Rosenberg Trubatch Award	5,000
Astrazeneca Young Investigator	25,000
Appropriations from Endowment	33,888
<b>TOTAL NET ASSETS RELEASED FROM RESTRICTIONS</b>	<b>\$ 574,542</b>

### 8. LEASE COMMITMENTS

The LLC currently has a total of 10 tenants leasing office space within its premises. The periods of the leases range from July 1, 2007 to Nov. 30, 2022. Rental income from these leases is included in the accompanying Consolidated Statement of Activities and Change in Net Assets in property management revenue.

Rental income from these leases totaled \$2,167,492 for the year ended June 30, 2014, and is included in the accompanying Consolidated Statement of Activities and Change in Net Assets in property management revenue. Property management revenue totaled \$2,556,315 for the year ended June 30, 2014, and includes income for garage and storage leasing fees and operating expense recoverables.

Rental income is recognized on a straight-line basis. The difference between rental income received and rental income recognized on the straight-line basis is recorded as deferred rent receivable in the accompanying Consolidated Statement of Financial Position. As of June 30, 2014, the deferred rent receivable totaled \$773,493.

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

Year Ending June 30,	Tenants
2015	\$ 2,389,630
2016	2,567,736
2017	2,568,025
2018	1,633,110
2019	994,783
Thereafter	1,091,078
	<b>\$ 11,244,362</b>

### 9. RETIREMENT PLANS

The Society maintains two defined contribution plans for employees meeting certain eligibility requirements. The 403(b) Retirement Plan allows for eligible employees to contribute a percentage of their salary, subject to the maximum contribution as per the applicable IRS regulation. The Society will match up to 5 percent of a participating employee's salary, depending upon the percentage of contribution made by the employees. The 401(a) Retirement Plan provides a nonmatching employer contribution of 5 percent to all eligible employees (members of senior management receive a 9 percent nonmatching contribution).

The Society's contributions to the plans for the year ended June 30, 2014, totaled \$688,986, with contributions to the 403(b) plan totaling \$250,226 and contributions to the 401(a) plan totaling \$438,760.

The Society also has a deferred compensation plan under Section 457 of the Internal Revenue Code for certain executive level employees. Contributions to this plan totaled \$52,500 for the year ended June 30, 2014.

### 10. NOTES PAYABLE

On Feb. 1, 2006, the Society entered into an agreement to purchase the property at 1121 14th St. NW, Washington, DC. The original purchase was financed through a \$20,000,000 note payable from Bank of America, N.A. On Aug. 1, 2011, the Society entered into an agreement to refinance the notes payable, resulting in a \$17,949,167 note payable from PNC Bank. In addition, the Society refinanced the swap agreement with PNC Bank to artificially fix the interest rate (see Note 12).

Future minimum principal payments are as follows as of June 30, 2014:

Year Ending June 30,	
2015	\$ 588,429
2016	622,533
2017	667,759
2018	711,504
2019	758,114
Thereafter	13,126,611
	<b>16,474,950</b>
Less: Current portion	(588,429)
<b>NON-CURRENT PORTION</b>	<b>\$ 15,886,521</b>

Total interest expense for the period ending June 30, 2014, was \$224,205.

## 11. BONDS PAYABLE

On Feb. 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 St. NW, Washington, DC.

The Society agreed to pay the principal and interest on the bonds. The bonds carried a fluctuating rate of interest per annum that approximates the BMA index (a national index of seven-day floating tax-exempt rates). On Aug. 1, 2011, the Society signed an agreement to transfer the District of Columbia Variable Rate Revenue Bonds to PNC Bank. As of June 30, 2014, the interest rate was 0.94 percent. Principal payments shall begin Feb. 1, 2030.

Total interest expense for the period ending June 30, 2014, was \$115,557.

## 12. INTEREST SWAP AGREEMENT

To minimize the effect of changes in the variable rate, the Society entered into an interest rate swap contract with a commercial bank for both the note and bonds payable. On Aug. 1, 2011, the Society agreed to a modified novation mark-up arrangement with PNC Bank. The interest rate swap contract is considered a derivative financial instrument because it derives its value from the interest rate paid on the District of Columbia Variable Rate Revenue Bonds. The Series 2006 Bonds have a fixed rate of 3.775 percent and the 2011 Taxable Term Loan had a fixed rate of 5.125 percent. (See Notes 10 and 11).

The fair value of the interest rate swap contract has been included as a liability in the amount of \$6,823,292 in the Consolidated Statement of Financial Position as of June 30, 2014. The unrealized loss on the interest rate swap of \$59,180 is shown as an other item in the Consolidated Statement of Activities and Change in Net Assets. The liability amounts represent an estimate of what the Society would have to pay if the agreement was canceled as of June 30, 2014.

The recorded amount of the liability or asset representing the fair value of the swap contract will vary from year to year as (1) the variable rate received changes in relation to the fixed rate paid, (2) the principal amount is paid down, which reduces the corresponding amount of the swap contract, and (3) the remaining time until maturity of the swap contract which terminates in 2030 for the note payable and 2037 for the bonds payable.

Total interest expense for the period ending June 30, 2014, was \$1,286,760.

## 13. LINE OF CREDIT

The Society has a line of credit in the amount of \$5,000,000, with a fixed interest rate based on the applicable floating rate, which was 0.54 percent at June 30, 2014. As of June 30, 2014, there were no outstanding draws on the line of credit. The line of credit is collateralized by investments held by Morgan Stanley.

## 14. COMMITMENTS

The Society is committed under an agreement for conference space in 2014, 2016, and 2018. A letter of intent has been made for 2015, 2017, 2019-24, and 2027. The total commitment under the agreement is not determinable, as it depends upon attendance and other unknown factors. There is a cancellation penalty that would be due if the agreement was canceled prior to the event date. The amount of the cancellation penalty increases through the date of the event.

## 15. FAIR VALUE MEASUREMENT

In accordance with FASB ASC 820, Fair Value Measurement, the Society has categorized its financial instruments, based on the priority of the inputs to the valuation technique, into a three-level fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). If the inputs used to measure the financial instruments fall within different levels of hierarchy, the categorization is based on the lowest level input that is significant to the fair value measurement of the instrument.

Investments recorded in the Consolidated Statement of Financial Position are categorized based on the inputs to valuation techniques as follows:

**Level 1.** These are financial instruments where values are based on unadjusted quoted prices for identical assets in an active market the Society has the ability to access.

**Level 2.** These are financial instruments where values are based on quoted prices in markets that are not active or model inputs that are observable either directly or indirectly for substantially the full term of the investments.

**Level 3.** These are financial instruments where values are based on prices or valuation techniques that require inputs that are both unobservable and significant to the overall fair value measurement. These inputs reflect assumptions of management about assumptions market participants would use in pricing the investments. These investments include non-readily marketable securities that do not have an active market.

Following is a description of the valuation methodology used for investments measured at fair value. There have been no changes in the methodologies used as of June 30, 2014.

■ **Money market funds** — Fair value is equal to the reported net asset value of the fund.

■ **Fixed income, U.S. government obligations, equities, exchange traded funds & closed-end funds (ETF & CEFs)** — Valued at the closing price reported on the active market in which the individual securities are traded.

■ **Mutual funds** — The fair value is equal to the reported net asset value of the fund, which is the price at which additional shares can be obtained.

■ **Alternative Investments** — Interests in hedge funds, limited partnerships, private equity funds — These instruments do not have a readily determinable fair value. The fair values used are generally determined by the general partner or management of the entity and are based on appraisals or other estimates that require varying degrees of judgment. Inputs used in determining fair value may include the cost and recent activity concerning the underlying investments in the funds or partnerships.

■ **Interest rate swap agreements** — Fair value is derived from quotes from a dealer or broker, where available. Models used in valuing such agreements consider the contractual terms of and specific risks inherent in the instrument, and inputs used typically include yield curve, instrument volatility, prepayment rates, and assumptions concerning nonperformance risk.

The table below summarizes, by level within the fair value hierarchy, the Society's investments as of June 30, 2014:

	Level 1	Level 2	Level 3	Total
<b>Asset Class - Investments:</b>				
Money market funds	\$ 698,770	\$ -	\$ -	\$ 698,770
Corporate fixed income	1,647,736	-	-	1,647,736
Exchange traded funds & closed-end funds (ETF & CEFs)	7,416,615	-	-	7,416,615
U.S. government obligations	4,685,538	-	-	4,685,538
Mutual funds	8,411,667	-	-	8,411,667
Equities	21,507,789	-	-	21,507,789
Alternative investments	-	-	7,695,124	7,695,124
<b>TOTAL</b>	<b>\$ 44,368,115</b>	<b>\$ -</b>	<b>\$ 7,695,124</b>	<b>\$ 52,063,239</b>



# Notes to Consolidated Financial Statements *(for the year ended June 30, 2014)*

	Level 1	Level 2	Level 3	Total
<b>Liability:</b>				
Interest Rate Swap Obligation	\$ -	\$ 6,823,292	\$ -	\$ 6,823,292

## Level 3

The following table provides a summary of changes in fair value of the Society's financial assets for the year ended June 30, 2014:

	Investments
Beginning balance as of June 30, 2013	\$ 6,361,130
Unrealized and realized gains	190,902
Purchases	1,143,092
<b>BALANCE AS OF JUNE 30, 2014</b>	<b>\$ 7,695,124</b>

## 16. ENDOWMENT

The Society's endowment consists of donor-restricted endowment funds. As required by GAAP, net assets associated with endowment funds are classified and reported based on the existence or absence of donor-imposed restrictions.

The Board of Directors has interpreted the Uniform Prudent Management of Institutional Funds Act (UPMIFA) as requiring the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Society classifies as permanently restricted net assets (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund.

The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the organization in a manner consistent with the standard of prudence prescribed by UPMIFA.

In accordance with UPMIFA, the organization considers the following factors in making a determination to appropriate or accumulate donor-restricted endowment funds:

- The duration and preservation of the fund;
- The purpose of the organization and the donor-restricted endowment fund;
- General economic conditions and the possible effect of inflation and deflation;
- The expected total return from income and the appreciation of investments; and
- Investment policies of the organization.

Endowment net asset composition by type of fund as of June 30, 2014:

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
<b>Donor-Restricted Endowment Funds</b>	<b>\$ -</b>	<b>\$ 152,880</b>	<b>\$ 869,389</b>	<b>\$ 1,022,269</b>

Changes in endowment net assets for the year ended June 30, 2014:

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	\$ -	\$ 51,839	\$ 868,736	\$ 920,575
Net depreciation (realized and unrealized)	-	134,929	-	134,929
<b>Total investment return</b>	<b>-</b>	<b>186,768</b>	<b>868,736</b>	<b>1,055,504</b>
Appropriation of endowment assets for expenditure	-	(33,888)	-	(33,888)
Present value discount adjustment	-	-	653	653
<b>ENDOWMENT NET ASSETS, END OF YEAR</b>	<b>\$ -</b>	<b>\$ 152,880</b>	<b>\$ 869,389</b>	<b>\$ 1,022,269</b>

Description of amounts classified as permanently restricted net assets and temporarily restricted net assets:

### Permanently Restricted Net Assets:

- (1) The portion of perpetual endowment funds that is required to be retained permanently either by explicit donor stipulation or by UPMIFA

**\$ 869,389**

### Temporarily Restricted Net Assets:

- (1) The portion of perpetual endowment funds subject to a time restriction under UPMIFA: with purpose restrictions

**\$ 152,880**

### Return Objectives and Risk Parameters

The Society has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of funding to programs supported by its endowment while seeking to maintain the purchasing power of the endowment assets. Endowment assets include those assets of donor-restricted funds that the organization must hold in perpetuity or for a donor-specified period(s) as well as board-designated funds. Under this policy, as approved by the Board of Directors, the endowment assets are invested in a manner that is intended to produce results that exceed the price and yield results of the S&P 500 index while assuming a moderate level of investment risk. The Society expects its endowment funds, over time, to provide an average rate of return of approximately 6 percent annually. Actual returns in any given year may vary from this amount.

### Strategies Employed for Achieving Objectives

To satisfy its long-term rate-of-return objectives, the Society relies on a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Society targets a diversified asset allocation that places a greater emphasis on equity-based investments to achieve its long-term return objectives within prudent risk constraints.

### Spending Policy and How the Investment Objectives Relate to Spending Policy

The Society has a policy of appropriating for distribution each year a sum equal to the amount required to execute the program supported by the endowment including an annual prize, as well as travel support for the prize winner and the allocable portion of the awards reception. In establishing this policy, the Society considered the long-term expected return on its endowment. Accordingly, over the long term, the Society expects the current spending policy to allow its endowment to grow each year. This is consistent with the Society's objective to maintain the purchasing power of the endowment assets held in perpetuity as well as to provide additional real growth through investment returns, such that the amount of the prize can increase at some point in the future.

## 17. SUBSEQUENT EVENTS

In preparing these consolidated financial statements, the Society has evaluated events and transactions for potential recognition or disclosure through Oct. 2, 2014, the date the consolidated financial statements were issued.



**SOCIETY *for*  
NEUROSCIENCE**

1121 14th St. NW  
Suite 1010  
Washington, DC 20005

Telephone: (202) 962-4000  
Fax: (202) 962-4941

[sfn.org](http://sfn.org)  
[jneurosci.org](http://jneurosci.org)  
[eneuro.org](http://eneuro.org)  
[brainfacts.org](http://brainfacts.org)  
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