

NEUROSCIENCE

SPRING 2013

Q U A R T E R L Y

“As scientists, each one of us is a vital advocate. Advocacy may not be something we are familiar and comfortable with yet, and it is not technically in our job descriptions, but we must all make time for it in our busy schedules.”

— Larry W. Swanson,
SfN President

A Redesigned SfN.org With Science at the Center

The new SfN.org website, which launched in February, is designed with members in mind. It will continue to be a central online location for the neuroscience community and a key source for neuroscience programs and resources, while placing science at the center.

SfN has implemented a new design along with new features and functions to enhance the user experience. From the site’s architecture and design to text and programming, the site is fully reinvented.

SEAMLESS INTEGRATION OF PROGRAMS

SfN.org connects SfN’s major programs and resources, allowing users to seamlessly tab between sites to find: *The Journal of Neuroscience*, *NeurOnLine*, *BrainFacts.org*, news, an updated calendar, and other key features. Users can quickly locate their favorite features from SfN.org like the member directory and annual meeting information.

Continued on page 3...

IN THIS ISSUE

A Redesigned SfN.org With Science at the Center.....	1
New NDP Survey Shows Trends, Challenges in Training Programs.....	1
Message from the President.....	2
Joseph Coyle: Advancing Neuroscience Research Through AAAS.....	4
Brain Research Featured at AAAS Meeting.....	5
Inside Science: Scientists Work to Detect Alzheimer’s Disease Earlier.....	6
Making Strides in Brain Awareness Outreach.....	8
SfN Members Stand Up for Research on Capitol Hill.....	9
Swartz Prize Endowed to Advance Theoretical and Computational Research.....	9
Preview of Neuroscience 2013.....	10
<i>BrainFacts.org</i> : New Additions Increase User Engagement.....	11

New NDP Survey Shows Trends, Challenges in Training Programs

SfN has released the preliminary results of the latest biennial survey of neuroscience departments and programs across the United States and Canada. They reveal a growing stability in neuroscience programs in terms of size, number of graduate applicants, and characteristics of faculty and students.

Conducted during the 2011-12 academic year, the survey of 147 graduate and undergraduate programs reflects the continued strength and interdisciplinary nature of neuroscience programs, the growing opportunities for undergraduate involvement in the field, and overall stability in the composition of programs over the last decade. The findings offer insights for deans, faculty, program directors, students, and federal agencies that support predoctoral and postdoctoral training programs. The survey has been conducted since 1986.

“We have seen an increase in the number of undergraduate neuroscience programs that may reflect greater general interest in the brain and brain functions,” said Alan Sved, author of the report and chairman and professor at the University of Pittsburgh Department of Neuroscience. “However, I was dismayed to see that we haven’t made more progress in getting additional underrepresented minorities into the field and that women are still not adequately represented in faculty ranks.”

Continued on page 8...

Message from the President

The Importance of Global Advocacy and Communication to Ensure the Long-Term Strength of Neuroscience



Larry W. Swanson,
SfN President

Neuroscientists worldwide are advancing the field in ways that were unimaginable only a few years ago. Public interest and support for our work is on the rise. We are encouraged by President Obama's recently announced new federal initiative, Brain Research through Advancing Innovative Neurotechnologies (B.R.A.I.N.), which calls for new seed money investments at NIH and

other federal agencies. We are also pleased that policymakers around the globe recognize brain science as one of the great scientific opportunities of our time.

Still, we obviously live in challenging economic times. As the President pointed out in announcing the new brain research initiative, across-the-board cuts, known as sequestration, are "threatening to set us back before we even get started." Now, more than ever, changes to the funding environment in one country — like the sequester in the United States — reverberate around the world.

With the field of neuroscience on the world stage, it is critical that we, as scientists, engage with policymakers and the public about the value of continued, sustainable investments in neuroscience research.

GROWING PUBLIC INTEREST — A CRITICAL STEP

Building public awareness and appreciation for brain science is the first step in gaining support for scientific research. When we interact personally with the public, as we do during Brain Awareness Week (BAW), we remind audiences of the critical discoveries made possible by brain research that have already improved health and wellbeing for countless individuals around the world. This year, The Dana Foundation reports that more than 800 BAW events and activities were held in more than 60 countries from Ethiopia to Argentina and New Zealand to Pakistan. Neuroscience is fortunate to have the The Dana Foundation's impressive and effective work on BAW since they established it in 1996. SfN is honored to partner with them each year and to provide complementary resources through *BrainFacts.org*, which reached an astonishing 1 million page views this month, half from outside the United States, since launching less than a year ago. The site continues to play a growing role in raising the visibility of brain science to the public, policymakers, and educators.

INCREASING SUPPORT — THE ROLE OF ADVOCACY

I can say with confidence that scientific progress coupled with effective advocacy and communication about neuroscience developments over the last several decades are critical to today's exciting opportunities.

As scientists, each one of us is a vital advocate. Advocacy may not be something we are familiar and comfortable with yet, and it is not technically in our job descriptions, but we must all make time for it in our busy schedules, a fact I have become acutely aware of while serving as SfN president. It only takes a few minutes to make a phone call, send an email, or write a letter to a legislator. In every country, we should be consistent about communicating the fundamental value of our work, including the points that:

- Scientific research is a highly effective investment, not a luxury or an expense.
- Making this investment is critical to advance science, improve health, create new technologies, and strengthen economies worldwide.
- Investments in science must be ongoing and sustained, not a one-time budget item.

Here in the United States, I recently joined more than 30 SfN colleagues for a Capitol Hill visit to discuss these issues with members of Congress. I was particularly excited to participate in this event with young SfN members and PhD candidates who explained their lab work and research developments. These young people represent the next generation of neuroscientists, the future of the field, and they are starting their roles as advocates early. They presented an optimistic view of the opportunities that lie ahead in the field of neuroscience, but they also pointed out in stark terms the bleak future they face if funding cuts continue.

During Hill Day, we informed legislators and their staffs that budget cuts in the United States are already being felt. More than \$1.5 billion in across-the-board cuts to the NIH budget means 1,600 fewer research grants in fiscal year 2013, and NSF cuts of \$350 million result in 1,000 fewer grants. We explained that neuroscience research is key to advancing our understanding of many issues that affect dramatically rising healthcare costs, including treatment of patients in the debilitating stages of Alzheimer's and Parkinson's. Dramatic swings in the funding cycle have a stifling, irreversible impact on progress.

GLOBAL COORDINATION IS ESSENTIAL

Scientific discovery is a global endeavor, as is advocacy. Funding gaps in one part of the world inevitably impact us all, and advocacy strategies can be adapted from one nation to the next. Thus, by sharing information across borders, we can help scientists develop concrete strategies for use across nations and in national capitals.

SfN is delighted that the International Brain Research Organization (IBRO) is leading an effort to encourage national societies and their members to engage with policymakers and advocate about the importance of neuroscience research around the globe. The program is expanded and adapted from one developed by the Federation of European Neuroscience Societies (FENS)-SfN joint advocacy program, begun in 2011. Through that effort, 17 national societies in Europe have developed country-specific programs dedicated to advocating for neuroscience, and these programs take into account the specific governmental and cultural norms of each country.

Around the globe, researchers are engaging in coalition activities along with clinicians and patient advocates to promote continued investment in the field. In the United States, the American Brain Coalition plays a critical role in bringing together these constituencies. The European Brain Council plays a similar role in advocating at the European Union. Brain Canada has had enormous success

in promoting public and private investment in brain-related research. Such efforts are going to be essential for the future of the global research enterprise and need to be expanded to other parts of the world.

THE FUTURE OF NEUROSCIENCE DEPENDS ON US

With the current global spotlight on neuroscience, we have a terrific opportunity to seize this moment to expand and strengthen a field that is recognized as solving perhaps the greatest scientific challenge of our time — how the brain works and how to prevent and treat the more than 1,000 diseases attacking it. Together we can lead our field in creating opportunities and pursuing discoveries. At the same time we are improving lives through bettering mental health, creating jobs, and strengthening economies.

At a time when spending cuts are heralded as the solution for economic solvency, neuroscience has been given a rare and unique opportunity. We should celebrate this renewed interest in the brain, but at the same time we cannot be complacent about the future of our field. Sustained funding around the globe is required for us to realize the full potential of recent initiatives, which requires sustained advocacy. I hope you will join me to ensure that policymakers and the public understand the excitement and promise of our rapidly advancing field. Securing long-term research investments ensures that society can reap the full benefits of our research efforts. ■

... A Redesigned SfN.org, continued from page 1

The site also offers expanded search capabilities across all of SfN's sites, including *BrainFacts.org*, *The Journal of Neuroscience*, and past annual meetings. Filtering and customization options make this feature especially helpful in seeking content.

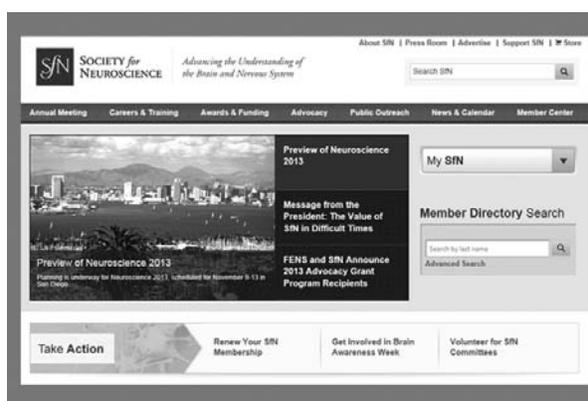
SHARE AND ADVANCE GREAT SCIENCE

The News feature allows users to access current news and features, and a new Events Calendar includes information about events taking place around the world. SfN members also can submit events to the calendar through the interactive event submission form.

A GATEWAY TO CAREER AND TRAINING RESOURCES

Familiar SfN career resources such as NeuroJobs and mentoring opportunities are easy to locate. The site includes a range of professional development resources, including new multimedia offerings, career path profiles, and more in the NeuroJobs Career Center section.

The new site also includes Educational Resources in Neuroscience (ERIN), a collection of high-quality, peer-reviewed resources that can be used for teaching in higher education.



ENGAGE TO SUPPORT THE FIELD

The redesigned SfN.org makes it easy to engage with the field. Whether it's getting involved with public outreach activities, contacting legislators, or getting involved as a member of an SfN committee, it's easy to navigate each area of the site and explore the resources SfN has to offer.

Over the next few months, you'll continue to see the site grow. Visit the new SfN.org and use the feedback button at the bottom of many pages to send your comments to the Society. ■

Joseph Coyle: Advancing Neuroscience Research Through AAAS



Joseph Coyle,
Eben S. Draper
Chair of Psychiatry
and Neuroscience
at Harvard
Medical School

Joseph T. Coyle holds the Eben S. Draper Chair of Psychiatry and Neuroscience at Harvard Medical School. Coyle's research interests include developmental neurobiology, mechanisms of neuronal vulnerability, and psychopharmacology. He has carried out research on the role of glutamatergic neurons in the pathophysiology of neuropsychiatric disorders for 30 years. Coyle is a past president (1991) of the Society for Neuroscience.

NQ: What is the role of the Neuroscience Section within AAAS and how has it changed over the years with the growth of the field?

The Neuroscience Section is one of 24 sections that correspond to fields of interest among AAAS members. Each section arranges symposia for the annual meeting, elects officers, and provides expertise for association-wide projects. Section members are able to meet and interact with scientists from other fields and learn about other exciting and important research underway.

The Neuroscience Section serves three major purposes. First, members may be selected to serve on committees involved in AAAS governance, elevating the perspective of neuroscience within the leadership and direction of the organization. Second, members of the section can propose speakers and symposia for the AAAS annual meeting to the Neuroscience Steering Committee, which selects and puts forward those proposals for consideration as major events at the meeting. Third, those members of the section holding membership for at least five consecutive years are eligible to be nominated as AAAS Fellows. The Council selects a limited number of fellows in various fields of scientific endeavor, and that distinction is highly valued throughout academia.

The Neuroscience Section was created in 1994 at the behest of Larry Squire, who was then serving as president of SfN. Originally a small section, the Neuroscience Section has grown to include those from allied disciplines including mathematics, physics, chemistry, computer science, and many others. The section now has more than 7,500 members.

NQ: As a busy medical professional and an esteemed scientist, you are pulled in many directions, as are most SfN members. Why have

you seen it as vital to join AAAS and get involved in its neuroscience activities, and how has it informed your work?

I've greatly appreciated the opportunity to participate in shaping the AAAS annual meeting and guiding its lasting impact. AAAS is the world's largest scientific organization that advocates broadly in support of science education and scientific research. Its membership includes both professionals (scientists, physicians, psychologists, etc.) as well as laypeople with an interest in science and science policy. That diversity provides each member the opportunity to interact with a variety of individuals, all with the goal of promoting science.

AAAS is a great partner for both the neuroscience community and SfN, and we should support its work as individual scientists to ensure that neuroscience is well-represented in its ranks. For example, AAAS is at the forefront of science education, advocacy, and outreach, areas where SfN is also very active. It develops curricula for student science education and increases lay scientific literacy. The organization also advocates on many public policy issues, including science funding, climate change, and evolution.

AAAS, in partnership with other scientific organizations, also sponsors more than 40 fellowships for scientists to spend at least a year assigned to the office of a member of Congress, a program in the executive branch such as NIH or NSF, or to the White House administration. This tremendously successful program helps bring a scientific perspective to those crafting policy at the national level.

The AAAS annual meeting is also a key venue for sharing science with the public and has a big impact both in the United States and internationally. There were more than 9,500 attendees at the 2013 annual meeting in Boston in February, and fourteen symposia tracks, one of which was the Cognitive, Neural, and Social Sciences track. The meeting is especially well known for its effectiveness in communicating science to the public — this year there were more than 900 newsroom registrants from around the world. Each year AAAS also hosts an event called Family Science Days, which offers the local community an opportunity to explore science through interactive exhibits, hands-on demonstrations, and other activities geared toward kids and families.

NQ: How does the Neuroscience Section approach the multidisciplinary nature of neuroscience, in terms of how the section is integrated internally

within AAAS, how it develops programming at the AAAS annual meeting, and how it interacts with the larger scientific community?

Neuroscience is, by nature, an interdisciplinary science that requires us to work in cooperation across disciplines and departments. The Neuroscience Section of AAAS recognizes this need for cooperation to ensure that neuroscience is appropriately represented within allied fields in AAAS and at the annual meeting. The maturation of neuroscience and its expansion into other disciplines such as molecular neuroscience, cognitive neuroscience, neuroethics, and neuroeconomics has provided more opportunities for neuroscience to be represented in symposia that stress an interdisciplinary approach. By tradition, the program emphasizes interdisciplinary symposia.

NQ: How can SfN members get involved with the Neuroscience Section in ways that further the

missions of both organizations and advance the field of neuroscience?

As scientists, it's important that we advocate for the advancement of science and scientific research. Membership in AAAS helps advance that mission, and I would encourage more SfN members to join and get involved. AAAS provides a great resource in its weekly Science magazine and also allows members to stay on top of international and U.S. activities that are shaping scientific policy and research funding. AAAS provides a "macroscopic" appreciation of what is happening and how it might affect individual neuroscientists. This broad perspective complements the increasingly robust policy and advocacy activities within SfN. By growing the number of self-identified neuroscience members in AAAS, the budget for neuroscience programming at the annual meeting can increase, and the section is allotted more fellowships. Together with SfN, we can support the continued growth and prominence of the field, which advances the future of science and research. ■

Brain Research Featured at AAAS Meeting

From new applications in brain-machine interfaces to breakthroughs in understanding primate cognition and psychopathology, neuroscience discoveries were front and center at the 2013 American Association for the Advancement of Science (AAAS) annual meeting in Boston. As the world's largest general scientific conference, the meeting provides a forum for promoting news about science and communicating that news to the press, the public, and policymakers. Each year, nearly 1,000 reporters attend the event.

The programs and speakers, selected by the AAAS Neuroscience Section, reflect a growing, increasingly interdisciplinary field that reaches across a variety of subject areas. "This year we had a major symposium on the 'connectome,' which was extremely well attended," said Joseph T. Coyle, the AAAS Neuroscience Section's newly elected chair. Coyle holds the Eben S. Draper Chair of Psychiatry and Neuroscience at Harvard University. See page 4 for more information from Coyle about AAAS.

Panels focused on such topics as innovative efforts to help stroke patients regain speech, advances in brain-machine interfaces, and developments in understanding memory, using the legacy case of H.M. Several panels examined issues that arise with the intersection of neuroscience and society. For example, "The Elusive Common Good: What Moral Psychology and Neuroscience Now Tells Us" illuminated the science behind conscious and unconscious

thought underlying moral choices. "Why Is Living Healthily So Difficult?" included a presentation on the neurobiological mechanisms of self-control on making dietary choices. One of the public lectures, "The Robotic Moment: What Do We Forget When We Talk to Machines?" reflected on how developments in automation may change societal norms.

The meeting largely focused on science and technology, and also featured discussions about public policy and the future of scientific research. Participating in an interdisciplinary event such as the AAAS meeting "is a way that we as neuroscientists can play a more important role in helping to shape policy based on our expertise in brain science," said Coyle.

Both Coyle and David M. Holtzman, the Neuroscience Section's past chair, said neuroscientists play an important role in shaping the discussion — both nationally and globally — about the direction of science.

"As scientists, we work to influence our society about the importance of funding for research, and AAAS helps coordinate that message among scientists in a variety of fields," said Holtzman, who chairs the neurology department at the University of Washington in St. Louis.

Learn more about the AAAS Neuroscience Section and the 2013 annual meeting at www.aaas.org. ■

Scientists Work to Detect Alzheimer's Disease Earlier

Long before a person shows signs of Alzheimer's disease (AD), the disease has begun changing the brain. By the time most therapies are offered the disease has quietly run rampant for years.

"Right now, we don't know how early before symptoms begin we need to intervene in order to have a meaningful impact on the trajectory of the disease," explained Sam Gandy of Icahn School of Medicine at Mount Sinai during a press conference about early detection of AD at Neuroscience 2012. At the event, presenters discussed tools capable of measuring biomarkers for AD and studies pointing to early treatments for the disease.

CHANGES IN BRAIN ACTIVITY PRECEDE COGNITIVE DECLINE

Studies show that abnormal accumulation of beta-amyloid and tau proteins — the main pathological partners in the disease — occur 10 to 20 years before the onset of AD symptoms. Lori Beason-Held and colleagues at the National Institute on Aging wanted to know whether they could use positron emission tomography (PET) to identify changes in brain function before cognitive symptoms of the disease emerged.

As part of an ongoing, 18-year study, Beason-Held's group collected yearly PET brain scans and performed a battery of cognitive tests on older adults, some of whom began to show cognitive decline several years into the study. When analyzing the results of the PET scans from previous years, the researchers found that those who developed cognitive impairment had increased brain activity in frontal lobe and decreased activity in temporal and parietal lobe areas, regions vulnerable to early beta-amyloid and tau accumulation in AD.

"These findings are important because we're seeing changes in brain activity in areas critical for specific aspects of cognition long before people start showing symptoms of cognitive decline," Beason-Held said.

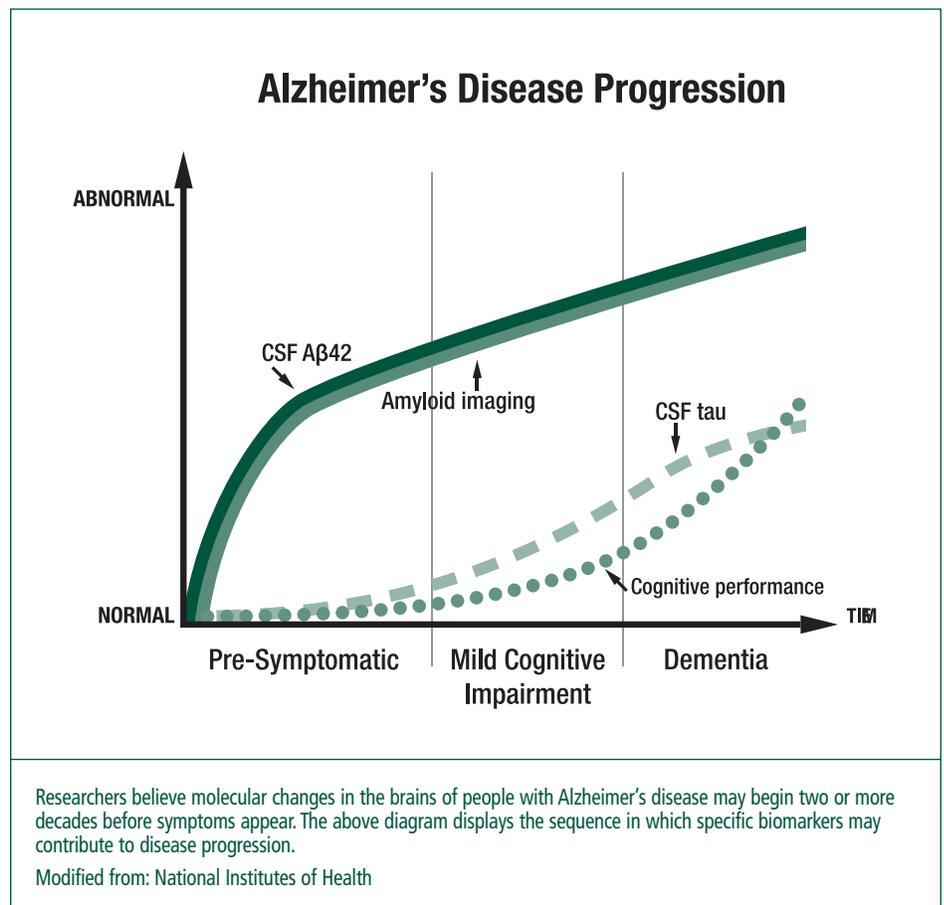
PROBE ENABLES VIEW OF TOXINS THAT INITIATE AD

Scientists are now better able to see the beta-amyloid plaques associated with AD with recent advances in imaging technology. But, as William Klein of Northwestern University pointed out, "What we really need to do is try to find ways to image the toxins that actually initiate the disease."

Klein described how he and colleagues developed a probe that uses antibodies that bind specifically to beta-amyloid fragments in the brain. The antibody is fused with magnetic nanoparticles so the toxins appear during magnetic resonance imaging (MRI). The new technique has enabled Klein's group to accurately distinguish between the autopsied brains of people diagnosed with AD and controls.

EPIGENETIC SIGNATURES DISCRIMINATE BETWEEN NEURODEGENERATIVE DISEASES

Scientists want to not only be able to detect AD early, but also discriminate between the types of dementia affecting patients. Could epigenetic signatures serve as biomarkers



to distinguish AD from Parkinson’s disease (PD) and Lewy body dementia (DLB), which share some overlapping pathology and symptoms?

To answer this question, Paula Desplats and colleagues at the University of California, San Diego measured the expression of 84 genes encoding enzymes known or predicted to modify chromatin in post-mortem frontal cortex tissue from patients with confirmed diagnoses of AD, PD, and DLB. The team identified differences in expression of the chromatin modifiers in tissue from disease patients compared with controls, suggesting that chromatin modifiers may have a role in these diseases.

Further analysis revealed that the gene expression patterns appear to be unique to each disease. The findings suggest that the development of blood tests capable of measuring such epigenetic signatures could allow scientists to differentiate between the three diseases, Desplats said.

A CLOSER LOOK AT TAU

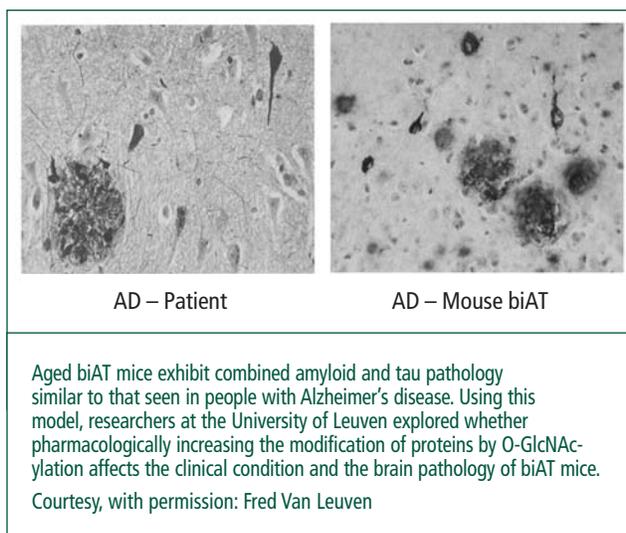
Animal models that mimic AD pathology in humans provide researchers with the opportunity to further explore the mechanisms of the disease.

Fred Van Leuven of the University of Leuven in Belgium described his group’s work with two transgenic strains of mice bred to develop a defective human version of tau. Previous studies show that the accumulation of beta-amyloid protein alters the phosphorylation of tau in AD. Van Leuven’s group wondered if other modifications to tau, such as the sugar modification glucose N-acetylation (O-GlcNAc-ylation), also affect the pathology of the disease.

Previous studies show O-GlcNAc-ylation levels are lower in the brains of people with AD. When the researchers treated the Alzheimer’s model mice with a compound that increased O-GlcNAc-ylation, the team saw improvements in the pathology, behavior, and survival of the mice. Surprisingly, the researchers were unable to detect evidence that the increase in O-GlcNAc-ylation led to an increase of sugars on tau. The findings suggest the compound is not working directly on tau, but downstream of the protein, Van Leuven said.

BUILDING A BETTER AD MODEL

The closer the animal models of AD mimic the changes that take place in the brains of people with the disease, the more accurately scientists can evaluate preclinical treatments. While high levels of amyloid precursor protein (APP) often fail to appear in humans until later in life, many AD animal models express high levels of APP early on.



Alena Savonenko of Johns Hopkins University described an AD mouse with temporally controlled production of APP. Through a drug-inducible transgenic strategy, the researchers delayed production of the protein in mice until late in life. The researchers then compared the mice that produced APP throughout life (early expressers) to mice that did not produce the protein until later (late expressers).

When the mice were tested at the age of 13 months, researchers discovered both groups had spatial memory deficits compared to controls. However, when the researchers stopped APP production in both groups of aged mice for seven days, they found the spatial memory in late, but not early, expressers improved. The findings suggest mice that express high levels of APP throughout life may be less sensitive to anti-amyloid treatments later in life. Savonenko said it’s possible this is why some drugs have worked successfully in animal studies but have failed in clinical trials.

The panelists agreed scientists have made notable gains in identifying biomarkers that could help detect AD earlier in patient populations, but they acknowledged there is still work to be done before they are able to use biomarkers to determine with certainty whether a person will go on to develop the disease. The presenters also discussed efforts to develop and test disease-modifying therapies.

“One challenge for so-called preventative or pre-symptomatic interventions is finding an effective drug that is also sufficiently safe. You will be exposing people for perhaps 20 years of their lives, during which they would have been cognitively intact anyway,” Gandy said. “On the other hand, Alzheimer’s disease is not a troublesome little memory disorder. This is a universally fatal malignant neurodegeneration that destroys the cerebral cortex of everyone who gets it.” ■

Making Strides in Brain Awareness Outreach

Each year, communities around the country highlight the importance of the brain and brain research during Brain Awareness Week (BAW), March 11–17, led by the Dana Alliance for Brain Initiatives. With more than 3,600 partners in 82 countries, the public outreach activities have a global reach.

GETTING THE PUBLIC INVOLVED

In organizing the first BAW, SfN Past President Bruce McEwen was determined to bring his passion for science education to a broader audience. He knew the Dana Alliance for Brain Initiatives, a program of the Dana Foundation, with the Salk Institute for Biological Studies, was running a series of public lectures about their work. The goal was to engage the public about scientific research.

McEwen approached the Dana Alliance with the idea of including SfN's members to create a grassroots advocacy and neuroscience education campaign. "Our goal in founding the campaign in 1996 was to bring together diverse groups with different interests from academia, government, and advocacy organizations and unite them with a common theme," said Kathleen Roina, senior project manager of BAW at the Dana Alliance.

SfN's partnership with the Dana Alliance came at a critical time, as concern about funding of scientific research was growing. Neuroscientists expressed the desire to form connections with disease advocacy groups and improve awareness about brain research among legislators and the public. SfN envisioned BAW as a way to encourage its chapters to become involved in their communities.

Today, the Society also engages the public on BAW through *BrainFacts.org* and social media accounts. Under the leadership of the Dana Alliance, BAW partnerships now exist not only with SfN and its members, but also with thousands of organizations and individuals around the world.

ONLINE BAW RESOURCES

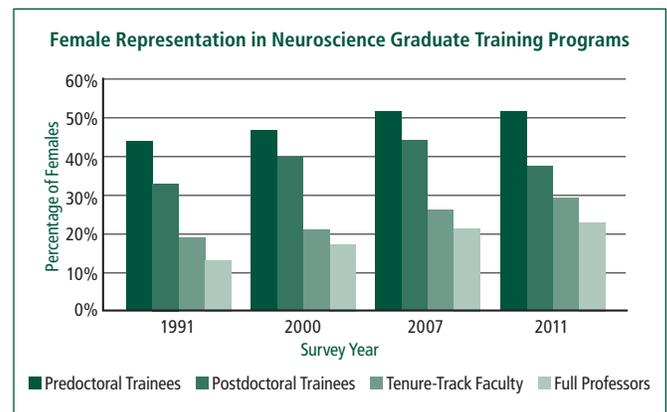
"The internet and social media tools really fuel grassroots outreach and advocacy efforts," said Roina. "For a campaign that's 18 years old, you might expect the momentum to fade, but it's much easier now to spread the word and keep the campaign going strong."

SfN has expanded its outreach and provides resources on brain awareness for the public and educators to use throughout the year. ■

... *New NDP Survey Shows Trends, continued from page 1*

Survey highlights include:

- Fifty percent of neuroscience graduate programs in 2011 spanned more than a single school at a university. That number is a significant increase from the 17 percent of such programs in 1991.
- For 80 percent of the programs, the PhD degree awarded had neuroscience or neurobiology in the title. In 2009, this number was at only 66 percent of respondents.
- Of graduate program faculty, 68 percent are also teaching undergraduate courses, and 98 percent provide opportunities for undergraduates to help with research projects.
- Women represent 52 percent of graduate students and 38 percent of postdoctoral trainees, but only 29 percent of all tenure-track faculty members among respondents. While this percentage has doubled since 1986, the growth has been slow and leveled off in recent years, particularly at the full professor level. (see chart)
- Underrepresented racial and ethnic minorities in the United States represent 12 percent of all predoctoral trainees, 4 percent of postdoctoral trainees, and only 5 percent of tenure-track faculty.
- The number of postdoctoral trainees having MDs or MD/PhDs has been steadily decreasing since the survey began in



1986; 95 percent of postdoctoral trainees have only a PhD while additional 3 percent have both PhD and MD degrees.

"We now see a trend toward stabilization that has remained constant for the past several years, perhaps reflecting the maturation and coming of age of neuroscience as a discipline," said Hermes Yeh, Committee on Neuroscience Departments and Programs chair and professor of physiology and neurobiology at the Geisel School of Medicine at Dartmouth College. ■

To read the full survey report and results of previous surveys, visit SfN.org

SfN Members Stand Up for Research on Capitol Hill

With the U.S. Congress making critical decisions that will affect research for years to come, SfN members are standing up for neuroscience funding. On March 20, more than 30 SfN members descended on Capitol Hill to urge legislators in more than 60 Congressional offices to support neuroscience research during Capitol Hill Day. Capitol Hill Day 2013 came at a critical time as the budget process for FY2014 and sequestration was underway.

Capitol Hill Day activities aren't limited to those who are in D.C. SfN members are encouraged to take action by utilizing social media, making phone calls, and sending letters to Congress. Additionally, the SfN Policy and Advocacy Department helps members set up local meetings or lab tours.

"During these challenging times, we need to make it a part of our job to communicate with policymakers about important research taking place," said Anne Young, chair of the SfN Government and Public Affairs Committee.

Richard Dorsky, professor of neuroscience at the University of Utah, said that until he participated in Hill Day he didn't appreciate the impact a meeting could have. "If you can either go to Capitol Hill or a local office to meet with a congressman or their staff — that voice is so much more powerful than anything you can do by contributing money to campaigns or writing letters," Dorsky said. "They listen to their constituents and if you get a chance to make an argument face-to-face, that's big."

"I think what struck me was the level of support and interest for biomedical research," said Cary Savage, director for the Center for Health Behavior at the University of Kansas and past Hill Day participant. "Now I have more of a sense of policymakers as allies who are trying to work with us to find ways to support biomedical research in a difficult environment." ■

For details on how to get involved, visit the Advocacy section of SfN.org

Swartz Prize Endowed to Advance Theoretical and Computational Research

SfN was awarded \$750,000 by The Swartz Foundation in December 2012 to endow the prestigious Swartz Prize for Theoretical and Computational Neuroscience.

Nominations for the Swartz Prize are now being accepted and the deadline is June 19. The next recipient will be announced in November at Neuroscience 2013 in San Diego.

"Many of the most pressing questions in science require the application of new techniques developed through computational and theoretical neuroscience," said Jerry Swartz, founder and chairman of The Swartz Foundation. "We are delighted to support a program that honors the leading computational neuroscience research, particularly in an age that promises so many new and exciting scientific discoveries and technological innovation."

"This area of research has introduced profound new ideas and directions for brain research," said SfN President Larry Swanson. "Thanks to Dr. Jerry Swartz and the foundation's generous support, SfN can continue to recognize and support talented scientists in this vital field."

The Swartz Prize, initiated in 2008, honors career achievements that have introduced new ideas and directions

for brain research that have significantly enhanced and expanded knowledge about the brain and its functions.

John J. Hopfield, Emeritus Howard Prior Professor of Molecular Biology at Princeton University, received the award in New Orleans at Neuroscience 2012. Hopfield's research showed how the collective computational power of brain networks could perform previously mysterious functions such as associative memory. This pioneering work became known as "The Hopfield Network" and is the key paradigm for modeling neural networks and understanding how they perform tasks.

The prize was awarded to Haim Sompolinsky in 2011 for his work shaping system-level brain theory using principles and methods of statistical physics and dynamical systems. Other previous winners include Larry Abbott in 2010 for his work bringing mainstream attention to computational neuroscience, Horace Barlow in 2009 for demonstrating that quantitative studies help to shape modern ideas regarding the interpretation of sensory representations, and Wilfrid Rall in 2008 for his trailblazing work in utilizing simulations to analyze and understand real nervous systems. ■

Check the Awards & Funding area of SfN.org for more information about this and other awards.

Preview of Neuroscience 2013

Planning is underway for Neuroscience 2013 taking place November 9-13 in San Diego. The SfN annual meeting is an unmatched venue for scientific exchange, networking, and learning. Mark your calendar and start making plans to attend.

DIALOGUES BETWEEN NEUROSCIENCE AND SOCIETY

One perennial highlight of the meeting is Dialogues Between Neuroscience and Society. Each year, the Dialogues presentation offers a unique chance to explore the intersection of neuroscience and the human experience with prominent individuals. This year, SfN President Larry Swanson has selected **Ed Catmull**, PhD, president of Walt Disney and Pixar Animation Studios, who will speak on creativity. Catmull has overseen innovative creative endeavors for more than three decades.

Catmull earned a PhD in computer science from the University of Utah and later was awarded an honorary PhD in engineering. He has received five Academy Awards and the Gordon E. Sawyer Award for his work in computer graphics. Prior to joining Pixar, Catmull was vice president of the computer division of Lucasfilm Ltd.

Past Dialogues speakers have included the Dalai Lama, actress Glenn Close, architect Frank Gehry, choreographer Mark Morris, and artist Chuck Close.

LECTURES AND EVENTS

Another highlight is the Presidential Special Lecture series. Swanson's emphasis this year is "Reinventing Systems Neuroscience: Functional Connectome Architecture." Lecturers will be:

Scott W. Emmons, PhD, a professor in the department of genetics and professor in the Dominick P. Purpura Department of Neuroscience at Albert Einstein College of Medicine in the Bronx, New York. Emmons occupies the Siegfried Ullmann Chair of Molecular Genetics. He studies the formation and function of complex neural circuits and will address the *C. elegans* functional connectome.

Jeff Lichtman, MD, PhD, a professor of molecular and cellular biology at Harvard University. Lichtman studies the physical underpinning of long-term memory. He writes in his biography that he is interested "in the way in which experience instantiates itself into the physical structure of neural circuits." Lichtman's topic will be the mouse connectome.



Gerald M. Rubin, PhD, a vice president of the Howard Hughes Medical Institute (HHMI) and executive director of HHMI's Janelia Farm Research Campus. His laboratory focuses on the development of new tools to study the structure and function of the nervous system of the *Drosophila melanogaster* fruit fly. Rubin's topic at Neuroscience 2013 will be the functional connectome of *Drosophila*.

Doris Tsao, PhD, an assistant professor of biology at the California Institute of Technology. Tsao's research focuses on gaining an increased understanding of how we know what we are looking at, how we identify objects, and what neural mechanism enables us to see three-dimensional space. Her presentation will address systems organization in the monkey-human cerebral cortex.

The Fred Kavli Public Symposium will be another highlight of Neuroscience 2013. The event is supported by The Kavli Foundation, which promotes an enhanced public understanding of science issues and supports scientists and their research.

The symposium's theme will be creativity and the brain. Antonio Damasio, Dornsife Professor of Neuroscience and director of the Brain and Creativity Institute at the University of Southern California, will moderate the panel, which will include several noted scientists. Members of the public will join the neuroscience community for a spirited discussion and question-and-answer session.

START PLANNING TODAY

These speakers are just a sampling of the hundreds of presentations, forums, and discussions planned for Neuroscience 2013. Abstract submission opened April 18 and closes May 9. ■

Registration and housing opens first for SfN members July 17.

BrainFacts.org: New Additions Increase User Engagement

Two new additions to *BrainFacts.org* invite users of all backgrounds to engage in neuroscience education and discussion. The developments are helping the site, a public information initiative of The Kavli Foundation, Gatsby Charitable Foundation, and SfN, evolve into a multifaceted platform, aimed at increasing public knowledge and awareness about neuroscience.

The *BrainFacts.org* blog launched in December 2012 as a companion to the information found on the site. The blog contains the opinions of eight members of the neuroscience community who are active in public outreach and communication. Some have already written for other well-respected media outlets including *Scientific American*, *The Huffington Post*, and *Psychology Today*.

The blog is designed to engage the public in a dialogue about what's new and notable in neuroscience. Registered users can comment on blog posts and converse with other readers or the authors themselves. Science blogs have become a popular platform to discuss science, crowdsource ideas, and share experiences. This endeavor gives neuroscience a new foothold in the online community.

In February, *BrainFacts.org* introduced e-alerts, enabling interested visitors to have personalized content from the site delivered to their inboxes. Each month, subscribers receive an update with all new content on the site in their areas of interest.

"*BrainFacts.org* communicates what we as scientists know about the brain and what we're learning and puts this knowledge into the public's hands," said Nick Spitzer, editor-in-chief of *BrainFacts.org*, a distinguished professor of biology at the University of California, San Diego, and co-director of the UCSD Kavli Institute for Brain and Mind.

BrainFacts.org launched in May 2012 to serve as an authoritative and accessible source of information about the brain and nervous system for the public. All content on the site is reviewed and approved by neuroscientists and the site's international editorial board. Since its launch, *BrainFacts.org* has received hundreds of thousands of unique visitors and more than one million page views from people across the globe. ■



Published quarterly by the Society for Neuroscience

Circulation: 44,300

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Neuroscience Quarterly is printed on New Leaf Reincarnation Matte made from 100% recycled fiber and 40% post-consumer waste, printed with vegetable inks, and processed chlorine free. By using this environmental paper, SfN saved the following resources:

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SAVE THE DATE



Member Registration Opens July 17

Register early to save time and money and secure housing.

Visit SfN.org for additional dates and details.



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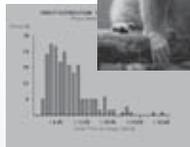
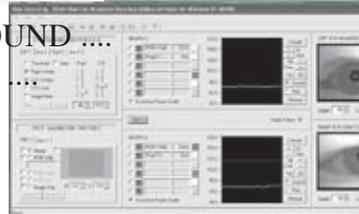
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