NEUROSCIENCE QUARTERLY

SPRING 2012

"Science diplomacy has become an important mechanism to build knowledge- and innovation-based societies around the world and spread scientific values, including meritocracy and transparency, that support democracy."

– E. William Colglazier, Science and Technology Adviser to U.S. Secretary of State Hillary Clinton

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SOCIETY FOR NEUROSCIENCE

Inside Science

The Leading Edge of Stress

The topic of environmental stress figured prominently at Neuroscience 2011. Klaus A. Miczek of Tufts University chaired a press conference on stress, particularly its profound, long-lasting effects on behavior and health — even over multiple generations.

The press conference highlighted new tools and approaches to examine stress, including optogenetics and genomics. In addition, it covered what Miczek described as one of the most exciting developments in stress research, "the epigenetic story." Researchers are now addressing how experiences early in life — or even in the womb — can render some individuals vulnerable and yet others resilient to stress, and how those tendencies can be passed on to subsequent generations.

Stressed Serotonin Neurons Enhance Fear Learning

Michael Barrata investigated the connection between stress and fear learning. Barrata, then at Massachusetts Institute of Technology, and his colleagues trained mice with Pavlovian classical conditioning to pair a tone with a foot shock. After conditioning, the mice responded to the tone with "freezing" behavior, indicating they had formed a fear memory.

Continued on page 6…

Q&A

E. William Colglazier: Science and Diplomacy

E. William Colglazier, Science and Technology Adviser to the United States Secretary of State

E. William Colglazier is the fourth Science and Technology Adviser to U.S. Secretary of State Hillary Clinton. He provides scientific and technical expertise in support of the development and implementation of United States foreign policy. A highly respected physicist, he was previously the Executive Officer of the National Academy of Sciences and National Research Council. Colglazier strongly supports global scientific engagement by the United States to create knowledge, solve global problems, and promote diplomacy.

NQ: What is unique about science that makes it a particularly good mechanism for advancing global diplomatic efforts? What are Secretary Clinton's priorities on this issue in the year ahead, and what can international scientific societies such as SfN do to further the goals of science diplomacy?

Secretary Clinton has emphasized science and technology as a key element of "smart power" and "economic statecraft" in advancing our diplomacy. My eight-month tenure as Science and Technology (S&T) Adviser to the Secretary has increased my appreciation of the great potential of America's S&T capabilities for enhancing our diplomacy. Because of the accelerating pace of technological change and its unquestioned impact on economic development, nearly every country must engage in S&T on a world-class level

Continued on page 4…

Message from the President

Scientific Publishing: A Need for Change

Moses Chao, SfN President

You have made a major breakthrough in the laboratory. After making all the figures and carrying out statistical analysis, you have written a scholarly paper. The first decision is where to submit... *Neuron* and *Nature Neuroscience* immediately come to mind, and their parent journals, *Cell* and *Nature*. Yet from recent experience, it is extremely difficult to publish in these journals, and it takes an inordinately long time. Why does it take so long to publish?

Just a few years ago, publication was much faster, sometimes occurring less than three months after submission. New technologies in communication (Internet, electronic mail, drop boxes) should have made this process even faster than before, when regular mail service was used to send paper copies to the editor. Many other forms of communication like newspapers and Internet sites now announce breaking news minutes after it happens. But it is rare to find a scientific article published in a short period of time. Instead, it is more usual to watch a manuscript take a year or more before being accepted (or rejected) for publication. This situation doesn't make sense. The difficulty in publishing can't be due to the lack of space, as there are so many neuroscience journals (more than 220), with numerous spin-offs appearing in the last 10 years.

The lengthy time required to publish a paper is damaging to the field. It has contributed to longer periods of training of graduate students and postdoctoral fellows. In the 1970s and 1980s, it was not uncommon to obtain a PhD degree in four years and carry out a two-year postdoctoral stint, before taking an assistant professor position. Now that rarely, if ever, occurs. As an indication of this trend, the age of investigators who obtain their first R01 NIH grant has risen to the early 40s. Delays in publication also impact clinical and translational studies, which may depend upon information held up in review. This includes negative results, which are difficult to publish and may provide essential information for future studies.

There are many contributing factors to our current delays in publishing. One is an overemphasis on submitting our work to high-tier journals. Many of us often seek to place our work in premier journals and are willing to take the extra time to do what it takes to get a paper accepted. At the same time, as reviewers, we frequently raise the bar for publication (as a natural response) in the highest-impact journals. It has become customary for referees and editors to ask for additional experiments and considerably more proof and validation to make a stronger story. This has created a situation where revisions may take months to years to complete, in order to have work appear in a prestigious journal. Waiting a year to publish old work blocks progress and prevents laboratories from embarking on new projects.

Another contributing factor is the use of supplemental figures. Previously, supplementary material did not exist, but in the last 10 years, we have witnessed a dramatic rise in their use. Recently, *The Journal of Neuroscience* stopped its practice of allowing supplemental figures. John Maunsell, the editor of *The Journal*, noticed that supplemental material was frequently difficult for reviewers to evaluate and slowed the editorial process. While supplements are necessary for large data sets, video, and high-resolution images, they allowed reviewers the license to ask for extra work, knowing unlimited space is available. Authors are frequently asked to do tangential experiments that require a significant amount of time. These requests produce a situation where there is pressure to obtain the "right" results in order to publish — an untenable situation. It is worth noting after discontinuing supplemental figures, there has been no appreciable change in the number, size, or quality of papers submitted to *The Journal*.

One strategy to expedite publication is through a consortium that exchanges reviews and referees among journals. The Neuroscience Peer Review Consortium (http://nprc.incf.org) began in 2008 and now numbers more than 40 journals, including *The Journal of Neuroscience, Biological Psychiatry, Nature Neuroscience*, *MCN*, *EJN,* and *Developmental Neurobiology*. The consortium allows papers to be vetted by more than one journal without going through multiple lengthy reviews. While only a few papers have used this process to date, in theory this mechanism should address some of the issues regarding delays in publication. Another change has been more peer-reviewed open access journals that are committed to rapid publication.

There are several reasons why we prefer to take the time to publish in a top-tier journal. For many, there is implicit trust and prestige in placing an article in a highly respected journal.

For some, it is essential for a job search or a promotion. For others, it is to garner support for grant applications. A chief reason is to obtain credit and communicate the results in a place where it will be highly cited.

Recruitment for academic positions and promotion decisions frequently rely upon publication in highly cited journals. However, more often than not, the name of the journal carries more weight over *what* is actually published. Curiously, studies have shown the majority of articles published in the highest-impact journals, such as *Nature*, are hardly cited at all. On the other hand, *The Journal of Neuroscience* has a lower impact factor, but produces articles that have a high citation rate and are highly regarded. Impact factors are disliked and heavily criticized, but are still used to rank papers inappropriately. In this regard, PubMed is the most popular way to find papers. Interestingly, the name of the journal is usually not the main criteria for a search of the literature in PubMed. In time, PubMed and other search programs should equalize the journals, regardless of impact factor.

I am not arguing the highest-impact journals should be diminished as a vehicle for publishing important work. Rather, they could be promoting prominent reports destined for distribution to the news media and the general public. This service is needed when the news media focus far more on sports and celebrities than scientific breakthroughs.

In the end, we all wish to have a rapid and high-quality peer review. None of us wish to publish quickly without having a thorough review. However, delays in publication have held up scientific progress and lengthened the training period in the past decade. The pressure to publish in top-tier journals and the requests for a lot of extra experimentation contribute to this situation. A greater awareness of these issues by reviewers, authors, editors, publishers, and academicians will lead to a climate for change in the future. ■

… Q&A: E. William Colglazier, continued from page 1

and become more innovative, which means engaging with the United States. As a consequence, our science diplomacy has become an important mechanism to build knowledge- and innovation-based societies around the world and spread scientific values, including meritocracy and transparency, that support democracy. S&T are also crucial for dealing with major challenges facing countries, such as ensuring public health, adequate food supply, clean water, clean energy, climate change mitigation and adaptation, environmental protection, disaster preparedness and response, cyber security, and physical security. Many of these challenges transcend borders. There is a renewed recognition that countries need to cooperate in science and technology to find global solutions. Nongovernmental S&T organizations, including SfN, are a great asset; they are engaging with S&T communities around the world, even in countries where diplomatic relations with the United States are strained or non-existent. These channels of communication can become especially important and influential when "windows of opportunity" emerge in governmental relations.

NQ: International collaboration is vital to the scientific endeavor, yet nations also compete for leadership in science. How can and should the United States balance competition and collaboration when it comes to science?

The United States has much to gain from global scientific engagement and from helping to develop more knowledge- and innovation-based based societies around the world. Since knowledge is not a zero-sum game, all boats rise with the tide. At the same time, such efforts build more capable competitors, and enhanced S&T capabilities around the globe can create new threats and security challenges. We need to "keep our eyes open" and protect our interests. Nevertheless, it is critical for the United States to engage internationally in S&T since expertise is spreading rapidly around the globe. Learning from others is essential for us to stay at the forefront of the scientific and technological revolution.

NQ: President Obama has called for the United States to invest strongly in R&D as an engine for human progress and economic growth. Even in the face of budget constraints, how do we work to prioritize bold science investment in biomedical and physical sciences, both here and abroad?

Even with the budget constraints, the President in his proposal to Congress has protected investments in research and development. Our R&D budgets may not be growing as fast as we would like or as fast percentage-wise as R&D budgets in some countries, but America's core investments in fundamental and applied research are not in danger even with the pressure on slowing the growth of governmental expenditures. For the last several decades, there has been strong bipartisan agreement on the importance of investments in S&T. One indication of this consensus is the 2005 National Academies report "Rising Above the Gathering Storm," which was commissioned in response to a bipartisan request from the United States Senate and resulted in the bipartisan legislation of the America Competes Act. Even with the current tight budgets, a great strength of the American governmental system for supporting R&D is its diversity as represented by the large number of United States agencies that conduct R&D and/or fund R&D at our universities, national laboratories, and private companies. Each of our funding agencies will need to focus in the current environment on how to ensure the most promising and meritorious research continues to be funded. A second strength of the U.S. R&D enterprise is the important role of the private sector, which provides the majority of funding for research and development in the United States. Many research universities have created interdisciplinary research centers to address problems that require expertise from a range of scientific and engineering disciplines. Many centers have been initiated with core government support and have become self-supporting with funding from private companies, foundations, and government grants and contracts. The diversity of the American support system for R&D is a source of resilience in times of tight budgets. I convey these messages to our foreign counterparts.

NQ: In the lead up to your arrival at the State Department, many lauded your emphasis on "science networks" — forging connections and collaborations internationally, as well as across traditional scientific specialties and boundaries. What are the strengths of global science networks today and what can scientists do to promote them?

Global science networks have expanded enormously due to the ease of communication with the information and communication technology revolution, the spread of cutting-edge expertise around the world, and support for international research collaborations. Most scientists already engage with a global community in their specialty. Because many problems are at the boundaries of traditional disciplines, there has also been a rapid growth in multidisciplinary approaches that bring together scientists in different fields from around the world. One excellent example is how molecular biologists are working with ecologists and veterinarians to understand factors involved in how new infectious diseases emerge and spread. With the pace of globalization of research and the rise of interdisciplinarity in science, universities are challenged to know about all of the international collaborations supported even in their own ranks. Scientists have an important role to play in forging new international partnerships, and making them known within their own university communities, and particularly with their students — tomorrow's leaders and global scientists. ■

Young Investigator Prize Honors Emerging Neuroscience Leaders

Many neuroscience awards require decades of research experience to win. The SfN Young Investigator Award (YIA), however, recognizes an early-career neuroscientist who has demonstrated great potential. Now is the time to nominate an exceptional young investigator you know! They may join the ranks of winners who launched illustrious scientific careers. Many went on to serve as SfN presidents, councilors, and annual meeting program chairs.

The SfN Young Investigator Award, now in its 30th season, provides $15,000 annually to a young scientist with outstanding achievements and contributions to the field who has earned his or her advanced professional degree in the last 10 years. It also covers the recipient's travel expenses to Neuroscience 2012, where SfN President Moses Chao will present the award.

Last year, the Selection Committee named two winners to share equal parts of the prize: Anatol Kreitzer, an assistant investigator at J. David Gladstone Institutes and assistant professor at University of California, San Francisco; and Loren Frank, an associate professor at the UCSF.

Robert Malenka, a past SfN councilor, YIA award winner, and co-director of the Stanford Institute for Neuro-Innovation and Translational Neurosciences, nominated Kreitzer for his creative and sophisticated research of basal ganglia circuitry and its role in brain disorders that Kreitzer conducted the research as a postdoctoral fellow in Malenka's lab at Stanford.

Malenka urges others to nominate leading young scientists: "The people that come through your lab and their accomplishments are part of any scientist's legacy."

Stephen Lisberger, YIA award winner in 1986, nominated Loren Frank. He said, "I've always thought of [YIA] as recognition of being one of the future leaders of the field." Lisberger, now the chairman of the neurobiology department at Duke University, was Frank's mentor at UCSF.

"It is the responsibility of the senior faculty in any department to make sure deserving young faculty get the recognition they can and should receive," Lisberger said. "Most of the recognition we get in this field is not that public, and public recognition is exciting."

The YIA has, in some instances, foreshadowed many of the 42 recipients' successful career trajectories, including those of past SfN presidents Carla Shatz and Susan Amara, who won the YIA in 1985 and 1992, respectively.

Nominations are now open for YIA. Log on to www.sfn.org/yia for further details about eligibility and deadlines. Nominations must be submitted or endorsed by a member, but membership isn't required for nominees. Learn about SfN's other fellowships, awards, and prizes honoring a variety of neuroscience education, research, advocacy, and mentoring achievements at www.sfn.org/awards. ■

2011 Young Investigator Award Recipients

Anatol Kreitzer

Current employment: Assistant investigator at J. David Gladstone Institutes, assistant professor, UCSF

Doctoral studies: Harvard University, Neurobiology

Why Kreitzer Won YIA 2011

- Research has improved understanding of circuitry in basal ganglia and its role in brain disorders
- Provided new insights into Parkinson's disease
- Analysis techniques that combine *in vitro* and *in vivo* approaches that influence basal ganglia circuits on motor behavior

Loren Frank

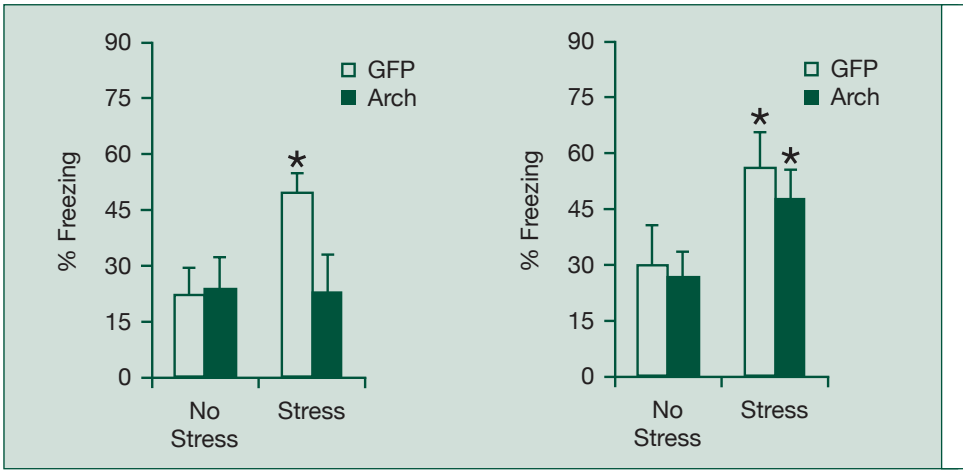
Current employment: Associate professor, Physiology, UCSF

Doctoral studies: Massachusetts Institute of Technology, Systems Neuroscience

Why Frank Won YIA 2011

- Novel analysis of neuronal plasticity, insight into neuronal change during new experiences
- Created new class of dynamic information about the hippocampus
- Ambitious research to study the entire neural circuitry

… Inside Science: The Leading Edge of Stress, continued from page 1



Stress enhances fear conditioning responses. However, when serotonin neurons in the dorsal raphe nucleus were optogenetically silenced (Arch) during a preconditioning stress, mice acted like unstressed controls (left). In contrast, silencing serotonin neurons (Arch) during the conditioned stimulus did not change behavior (right). The findings suggest serotonin is involved in stress's effects on fear learning.

Credit: Image courtesy of Michael Baratta, Massachusetts Institute of Technology

Mice that experienced stress in the form of immobilization prior to conditioning displayed more freezing. The behavior demonstrates that stress enhances fear learning.

In order to determine the role of serotonin neurons in this enhancement, Barrata used optogenetics. A light-sensitive protein called archaerhodopsin was genetically targeted for expression to serotonergic neurons of the dorsal raphe nucleus. Once activated by green light in freely moving animals, archaerhodopsin passes an outward proton current, rendering neurons electrophysiologically silent within milliseconds. This tight temporal control of the neurons' activity allowed Barrata to determine the specific window of activity for serotonin neurons in fear learning.

When the serotonin neurons were silenced during the tone, stressed mice still displayed enhanced freezing. But when they were silenced during the preconditioning stress, the mice acted like unstressed controls.

The finding suggests that the serotonin neurons somehow enhance fear learning, perhaps by augmenting sensory stimuli during stress, Barrata explained. Now at the University of Colorado, Barrata plans to next investigate how serotonin systems become chronically dysregulated in response to severe or long-term stress.

Social Anxiety Gene?

Lucy Osborne and her colleagues at the University of Toronto and the University of Louisville traced the genetic origins of separation anxiety in children and mice — even to the level of a single gene. This is surprising given that anxiety behaviors arise from complex genetic and environmental interactions.

An unusual genetic variation in children offered Osborne and her team a window into the broad influence of a small genetic region. Children with a duplication of 26 genes on chromosome 7 develop the aptly named Dup7q11.23 Syndrome, which is marked by increased social anxiety. Deletion of the region results in Williams-Beuren syndrome, which features cognitive impairment and notably low social anxiety. More than 25 percent of children aged 4–13 with Dup7q11.23 bore a diagnosis of separation anxiety disorder, whereas fewer than 5 percent of children with Williams-Beuren syndrome or healthy controls had been diagnosed.

Mice, too, exhibit signs of separation anxiety upon removal from their mothers — measurable through vocal recordings. The team homed in their examination of chromosome 7 even further to GTF2I, a gene in the region that encodes general transcription factor 2I. "An extra copy of this gene made the mice squeak almost twice as much" as their wildtype counterparts, Osborne said, "suggesting they were much, much more anxious being separated from their mother." Deletion of a copy of the gene resulted in fewer anxiety-related vocalizations.

The work represents the first dose-dependent link between anxiety behavior and a single gene in mice — found in a discreet genetic region in humans. The GTF2I gene likely controls many other downstream genes through its actions as a transcription factor, but Osborne noted it also plays a role in cellular calcium signaling. Next, Osborne will "look to those downstream biological pathways for clues to more general, widespread anxiety conditions," she said.

A Stressful Legacy

Extremely stressful early-life and prenatal experiences have been linked to poor mental health outcomes, including schizophrenia, autism, and mood disorders. Subtler *in utero* stresses can result in milder outcomes in mice, such as increased stress sensitivity. Christopher Morgan and colleagues at the University of Pennsylvania stressed newly pregnant mice and saw lasting effects across multiple generations.

The team had previously established that male — but not female — pups subjected to stress *in utero* were more sensitive to stress later on, and they displayed a "dysmasculinized" phenotype of smaller testes and slightly feminized brains. Morgan further reported that male mice fathered by the males stressed *in utero* "showed the same phenotypes that their fathers showed."

The researchers screened 96 genes and found a more female-like expression pattern in the affected male mice. Looking even further upstream, they found a shifted pattern of microRNAs (miRNA), tiny powerful molecules that can affect entire genetic programs. The miRNAs are triggered by a testosterone surge just before birth that promotes the masculinization of brain circuitry in male mice.

The miRNAs provide a link between environmental experience and widespread effects like stress sensitivity, Morgan said. Neonatal male pups given a testosterone blocker or a histone deacetylase inhibitor were indistinguishable from untreated female littermates when Morgan examined their miRNA patterns alone. Morgan and his colleagues suspect this surge-related epigenetic signaling is disrupted by stress, even very early in pregnancy.

Genotype Still Matters

Sissi Jakob and her colleagues at the University of Würzburg in Germany demonstrated the complexity of environmental and genetic interactions. Pregnant mice exposed to significant stress daily late in pregnancy bore pups that later displayed behaviors indicative of depression and anxiety. Microarray data also pointed to genetic changes in the mice's brains.

Through epigenetic modifications, Jakob said, "our body can adapt to the environment." But the behavioral outcomes also were heavily influenced by preexisting genotype. Mice that were subjected to prenatal stress *and* bore a genetic modification of the serotonin transporter were more susceptible to depression-like behavior. The work reaffirms that lifelong resilience to stress arises from complex interactions between genes and early environmental cues, a theme revisited throughout the press conference.

Although the research presented at the press conference focused on its deleterious effects, moderator Miczek urged that we not think of stress as a negative influence per se. "Stress really has biphasic functions; there are some energizing and mobilizing effects of stress, and others are impairing." The key to interventions, he suggested, may be to find ways to favor the positive effects while mitigating the damage of early stress. ■

Capitol Hill Day 2012

SfN members from 25 states and the District of Columbia voiced support for NIH and NSF funding on March 29 in 73 meetings with congressional representatives and senators on Capitol Hill. Capitol Hill Day 2012 had a record attendance of 49 members, requesting at least $32 billion for NIH in FY2013 and $7.4 billion for NSF to support the nation's scientific research enterprise. Members used their meetings to initiate and strengthen relationships with their legislators and to emphasize the health and economic benefits of scientific research. ■

Bill Martin of Theravance and Rep. Jackie Speier (D-CA).

Ruchi Parekh of George Mason University, Quinn Conklin of the National Science Foundation, Maya Sapiurka of the College of William and Mary, and Michael Fox of Virginia Commonwealth University.

SfN President Moses Chao, SfN Past President and incoming Government and Public Affairs Committee Chair Anne Young of Massachusetts General Hospital, and Rep. Chaka Fattah (D-PA).

Bill Mobley of UCSD, SfN President Moses Chao, and Rep. Brian Bilbray (R-CA).

Inspiring Young Minds, Celebrating the Brain

In just one week, neuroscience enthusiasts around the world provided nearly 1,000 opportunities for the public to learn about and celebrate the brain. From lab tours to art contests and health fairs to classroom activities, every Brain Awareness Week (BAW) event held the week of March 12 elevated awareness of neuroscience in global and local communities.

Since the Dana Alliance for Brain Initiatives launched the annual BAW campaign in 1996, it has united researchers, communities, and the public worldwide in brain awareness initiatives. In 2012, BAW supporters orchestrated more than 900 events in 51 countries and 42 U.S. states.

Dana's international calendar of events captured the growing enthusiasm for the campaign. In Africa, participation doubled this year, with six African countries — Morocco, Senegal, Liberia, Nigeria, and South Africa — celebrating BAW this year. The Uruguay Society for Neuroscience hosted a week of brain games, panels, exhibits, conferences, and other events. Activities in Turkey ranged from traditional lab tours and lectures to brain puppets and Brain Rap contests. For a view of "BAW Across the Continents," visit danapress.typepad.com.

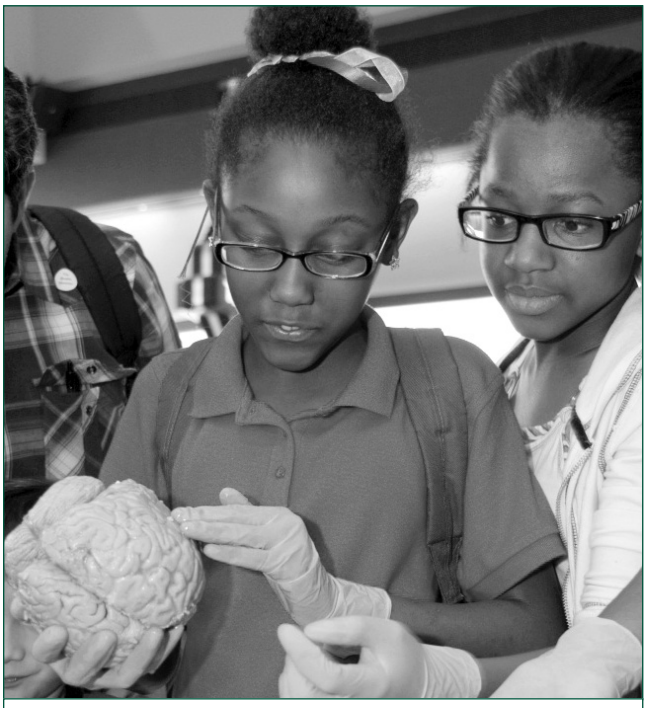
In the United States, Texas Tech University in Amarillo worked with a primary school to incorporate neuroscience in a series of day-long activities. In art class, students built clay brain models and neurons out of beads. During physical education, kids learned neuroscience concepts through games like "synaptic tag." Even lunch turned into an awareness event, with students dining on Jell-O from a brain mold and sipping drinks cooled by brain-shaped ice cubes.

SfN's Miami chapter partnered with the Miami Science Museum to sponsor a Brain Fair. Participants dissected a sheep brain, recorded action potentials from electric fish, and played with visual illusions. Graduate and undergraduate students created a puppet show about the brain and painted kids' faces with brains and neurons.

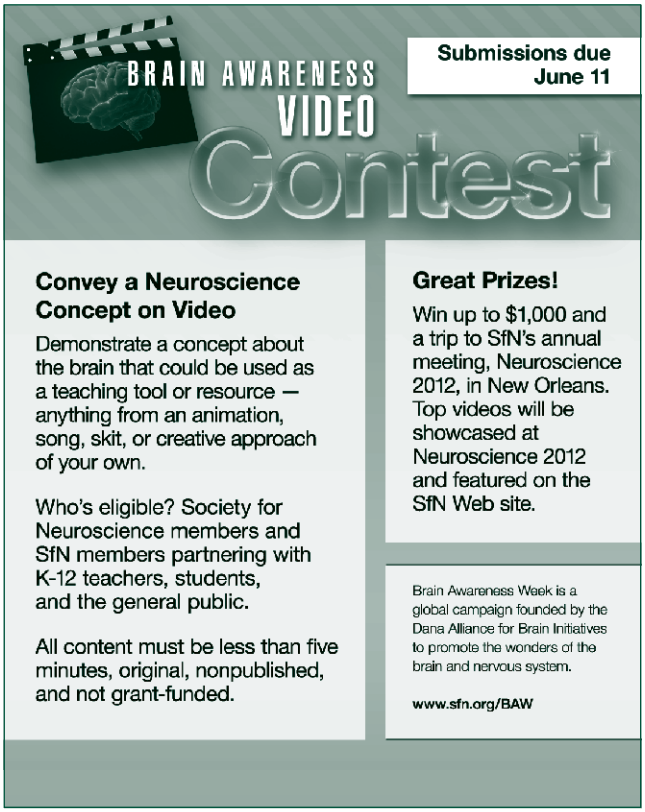
SfN's Houston chapter hosted the 11th annual Brain Night for Kids, which aimed to spark scientific interest at an early age. The event was packed with activity booths teaching about bike helmet safety, brain reflexes, hand-eye coordination, and animal brain comparisons. Children built their own nerve cells with pipe-cleaners and handled a human brain.

Make sure to share brain awareness outreach activities from your area by sending high-resolution photos and captions of your awareness activities to baw@sfn.org. ■

Learn how you can promote brain awareness year-round at www.sfn.org/baw.



Students examine a human brain at the University of Texas Houston Brain Awareness Week event. Credit: Anne Hart, University of Texas Health Science Center at Houston.



Looking Ahead to Neuroscience 2012

The Society for Neuroscience's 42nd Annual Meeting will be a landmark event for the neuroscience community, bringing together neuroscience investigators, physicians, and professionals, October 13–17 in New Orleans. As you plan to attend the premier neuroscience event of the year, consider available awards, travel requirements, and the rich history of the meeting's host city.

2012 Fellowships, Awards, and Prizes

Applications are open for fellowships, awards, and prizes being presented at Neuroscience 2012, many of which offer travel support to the annual meeting. Award opportunities are available for neuroscientists at every stage of their career and in every field. Review award details and deadlines at www.sfn.org/awards. *Learn more about the Young Investigator Award on page 5.*

Plan in Advance for Traveling to the Annual Meeting

Coming from outside of the United States? Neuroscience 2012 attendees from countries participating in the Visa Waiver Program should review guidelines well in advance of making travel arrangements. International attendees who require visas also may request a letter of invitation from SfN using the online form. Access the form and further information at www.sfn.org/visainfo.

Airfare discounts to New Orleans are available through Society-recommended airlines. The Neuroscience 2012 Web site provides details on the pre-negotiated discounts with major air carriers and rental car companies available to annual meeting attendees.

Once registered, student members and member Category I, II, and III registrants have access to a limited number of specially priced hotel rooms in New Orleans until September 4. Rooms will be assigned on a first-come, first-served basis and can be booked online.

Clinicians: Earn CME Credit

Neuroscience 2012 provides CME-designated programming, enabling physicians to learn about basic science underlying clinical medicine. CME-designated lectures, symposia, and minisymposia provide a broad overview of the field and detailed information about recent research. SfN is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. Visit www.sfn.org/cme.

Neuroscience2012PresidentialSpecialLecturers

Simon E. Fisher, DPhil
Max Planck Institute for Psycholinguistics
The Gift of Gab: How Your Genome Helps You Speak

James Rothman, PhD
Yale University School of Medicine
Molecular Mechanism of Synchronous Neurotransmitter Release

Carla Shatz, PhD
Stanford University
Circuit Tuning During Developmental Critical Periods

Janet F. Werker, PhD
The University of British Columbia
Prenatal Exposure Modulates Language Attunement in Infancy

Visiting New Orleans

Neuroscience 2012 is taking place in a city at the crossroads of culture and language. From the Caribbean and Africa, to France and Spain, various cultural influences define New Orleans. Before this historic location became part of the United States, it was under French and then Spanish control. The city has the feeling of a historic European city, with its French and Spanish architecture dating back to the 17th century.

Neuroscience 2012 will take place at the Ernest N. Morial Convention Center along the bank of the Mississippi River, walking distance from New Orleans' cultural center in the French Quarter. Enjoy great food, music, and culture! New Orleans also touts one of the oldest surviving streetcar systems in the United States, which is more than two centuries old. Enjoy a trip on the main streetcar line up St. Charles Avenue to check out New Orleans' great architectural heritage.

Follow Neuroscience 2012 Online

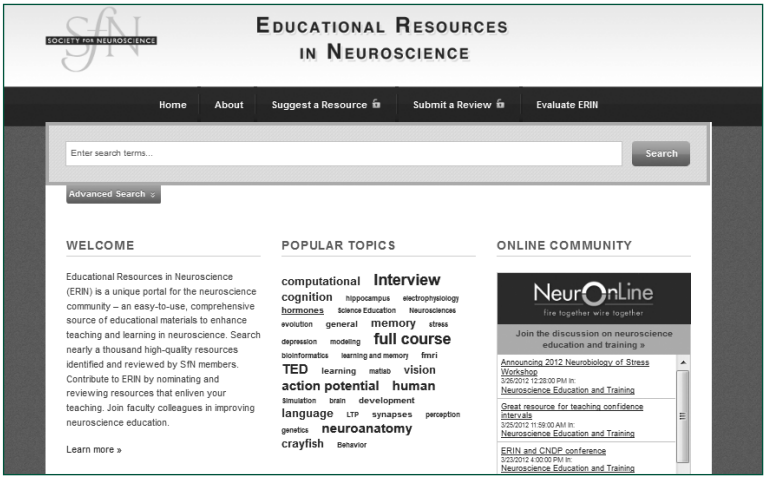
Follow the annual meeting on Twitter @Neurosci2012 for the latest updates on Neuroscience 2012 scientific sessions, workshops, exhibitors, and satellite events. Information about satellite event submissions is available at www.sfn.org/am2012. ■

NEUROSCIENCE QUARTERLY

Educational Resources in Neuroscience

The need for easily accessible neuroscience information beyond textbooks has increased in recent years. In response, SfN has launched Educational Resources in Neuroscience (ERIN), an online portal designed to enhance neuroscience teaching and learning through a searchable database of resources available to undergraduate and graduate faculty.

The ERIN Web portal, developed by SfN with funding from the National Science Foundation, provides easy access to nearly a thousand online educational resources. Peer-reviewed for scientific validity and educational merit, these resources are fully searchable by numerous criteria including topic and sub-topic, course level, resource format/media type, rating, and author.



The ERIN portal furthers SfN's ongoing commitment to supporting higher education in neuroscience and serving the needs of the more than 15,000 SfN members engaged in training new generations of neuroscientists. ERIN helps neuroscience faculty find high-quality materials, including books, software, lab exercises, and a wide range of online images, tutorials, animations, and videos. ERIN also facilitates a community where faculty can exchange syllabi, lab exercises, and ideas about innovative approaches to teaching and learning.

The project's Principal Investigator, Richard Olivo of Smith College, leads a board of seven ERIN editors. Editors were chosen for their expertise in various subdisciplines of neuroscience and their demonstrated commitment to exemplary teaching. The editors reviewed, tagged, and wrote descriptions for the initial set of more than 700 resources. "ERIN may be the most important step the Society has taken to support faculty who teach neuroscience," said Olivo, who first proposed the idea to Council in 2008.

The Faculty for Undergraduate Neuroscience (FUN), with a mission to support excellence in undergraduate education, serves as a strategic partner in promoting ERIN and seeking contributions from FUN's own members.

ERIN's success depends on SfN member contributions to make the site a useful and valuable resource for the neuroscience teaching community. Visit the Educational Resources in Neuroscience portal at erin.sfn.org. ■

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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:

43	trees
19,489	gallons of water
1,235	pounds of solid waste
4,322	pounds of hazardous effluent

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