

NEUROSCIENCE

FALL 2013

Q U A R T E R L Y

“The field of neuroscience is about more than physics, biology, and cognition — it’s about discovering who we are as human beings.”

— Larry W. Swanson,
SfN President

IN THIS ISSUE

Annual Meeting Preview: New Features at Neuroscience 2013	1
Message from the President	1
Faculty Share Effective Changes in Department Hiring Practices to Increase Diversity Among STEM Faculty	3
Q&A: NSF Leaders Discuss Opportunities in Brain Science Programs	4
Inside Neuroscience: Scientists Examine How Brain Structure and Function Change During Adolescence	6
SfN-Funded Workshop Provides Training for African Medical Faculty	8
Public Events at Neuroscience 2013	10

Annual Meeting Preview: New Features at Neuroscience 2013



With nearly 16,000 scientific presentations, 600 exhibitors, 34 professional development workshops and networking functions, and 28 sponsored socials, you’ll want to carefully plan your time at Neuroscience 2013, to take advantage of the new and expanded features at the meeting. They include:

Special Presentation on U.S. and European Neuroscience Initiatives

The great potential for development of new tools and applications across the field is key to the momentum behind the BRAIN Initiative in the U.S. and the European Commission’s Human Brain Project. Global leaders will discuss how the initiatives might affect the field. Panel members include Cora Marrett, acting director of the National Science Foundation; Tom Insel, director of the National Institute of Mental Health; Story Landis, director of the National Institute of Neurological Disorders and Stroke; Geoffrey Ling, deputy director of the Defense Sciences Office, Defense Advanced Research Projects Agency; and a representative from a European organization.

The Special Presentation will be held at 1:15-3 p.m. Monday, November 11.

Continued on page 11 ...

Message from the President

Annual Meeting: A Great Opportunity for Advancing Science and Careers



Larry W. Swanson,
SfN President

The annual meeting has been a source of inspiration for more than four decades, propelling me forward at every stage of my career. I attended the very first annual meeting of the Society for Neuroscience in Washington, DC, back in 1971, when I was third-year graduate student studying neurobiology at the Washington University School of Medicine in St. Louis. From the beginning, I was hooked. It was exhilarating but disorienting to explore a new field and figure out how to chart my own path. I made a point of talking with peers, experts, and potential mentors, building personal, professional, and intellectual relationships. I’ve attended every meeting since — 42 in total — and every year, I’ve walked away with a deeper understanding of the field.

It informed my research into neural mechanisms of the basic drives and emotions at the Salk Institute, where I worked for a decade, and at the University of Southern California, where I’ve been on faculty since 1990. The annual meeting has been the backbone of my career, providing the framework that has allowed me to make so many connections.

ENHANCED CAREER OPPORTUNITIES AT NEUROSCIENCE 2013 AND BEYOND

What I remember more than anything about my first SfN annual meeting was seeing the famous scientists of the day in action, forming a broad network of colleagues, and interviewing

Continued on page 2 ...



SOCIETY for
NEUROSCIENCE

... Message from the President, continued from page 1

for a postdoctoral position. So it gives me a great deal of pleasure to see that this year's annual meeting in San Diego includes unparalleled opportunities for neuroscientists to engage in professional training, career development, and networking. The wide range of career development offerings include the popular Meet-the-Expert Series, mentoring roundtables, and workshops on career paths and grant funding. For undergraduate students, the second annual Graduate School Fair provides an opportunity to meet face-to-face with neuroscience program directors.

Outside of the meeting, SfN also provides ever improving resources all year long to help scientists build professional networks and advance their careers. The online NeuroJobs Career Center gives members a way to learn about a vast range of topics at their own convenience, offering informational videos, career profiles, and tools to help learn about how to get papers published and find mentors. It also can help with job searches, providing updates on available positions, and tips on resume writing and social networking. Additional information about how to apply for prizes and fellowships in the U.S. and abroad is more important than ever in this uncertain funding environment.

IMPORTANT INVESTMENTS IN NEUROSCIENCE

It is never clearer than at the annual meeting that research is a global endeavor. I greatly benefit from partnerships I've created with scientists in Latin America, and have come to believe that these types of alliances are key to strengthening the field. For example, through sharing information and discussing science with colleagues around the world, I've seen advances in the systems neuroscience of motivated and emotional behavior that might otherwise not be possible because of narrower funding priorities in individual countries.

Of all our shared priorities, perhaps the most pressing is to secure adequate funding for the advancement of neuroscience research. Political and financial circumstances around the globe are making it more difficult to ensure sufficient funding. In San Diego, I encourage you to participate in the symposium "Enhancing Global Cooperation on Advocacy," which I will cohost with Sten Grillner, secretary-general of the International Brain Research Organization (IBRO). We will discuss the importance of biomedical research funding, and examine ways to raise public awareness and advocate for government support for neuroscience across the globe.

Sequestration cuts in the U.S. are having increasingly dramatic effects on neuroscientists whose research relies on federal funding. A disturbing number of SfN members report they've had to consider whether they can keep their labs open. Many of us are concerned that the cuts, if sustained, will have implications that affect fundamental understanding of the brain, as well as progress on a range of diseases and disorders. In

Europe, 17 national societies, led by the Federation of European Neuroscience Societies (FENS), and in partnership with SfN, are developing country-specific programs dedicated to advocating for neuroscience.

In regions around the globe, researchers are engaging in coalition activities along with clinicians and patient advocates to promote continued investment in the field. The American Brain Coalition plays a critical role in bringing together these constituencies in the U.S. The European Brain Council plays a similar role in advocating at the European Union, and Brain Canada has had enormous success in promoting public and private investment in brain-related research. Such efforts are essential for the future of global research and need to be expanded to other parts of the world.

LOOKING AHEAD

I am hopeful that President Obama's BRAIN Initiative (Brain Research through Advancing Innovative Neurotechnologies), and Europe's Human Brain Project represent commitments to neuroscience research that will provide great advancement for the field. I embrace the goals of accelerating discovery by developing and improving technologies that can lead to better treatment for those who suffer from nervous system diseases and disorders. At the same time, I am mindful of the tremendous challenges these initiatives present.

President Obama concluded his announcement of the BRAIN Initiative by saying, "I don't want our children or grandchildren to look back on this day and wish we had done more to keep America at the cutting edge. I want them to look back and be proud that we took some risks, that we seized this opportunity." If we want our field to keep flourishing, we must keep being our own best advocates through these tough economic times. SfN is key to helping us all, individually, get the tools we need to succeed. The new SfN website is teeming with information on public policy, neuroscience funding, and taking action, as well as resources for career growth and advancement. The facts we need are at our fingertips.

I would like to close by saying this past year has been an absolute privilege. My final days as president will be at the annual meeting, which over the last four decades, I've watched grow from a modest gathering of about 1,000 scientists to a bustling symposium of 30,000 professional researchers, doctors, technicians, and a host of others interested in the brain. It's been an honor to witness that growth, just as it's been an honor to serve as president. The field of neuroscience is about more than physics, biology, and cognition — it's about discovering who we are as human beings. After all I have witnessed, both as a scientist and as president, I am filled with more awe and wonder at the possibilities of our field than I was at 22. I would like to thank all of you for inspiring me along the way. ■

Faculty Share Effective Changes in Department Hiring Practices to Increase Diversity Among STEM Faculty

What are the barriers facing women who enter STEM fields? How can they effectively progress in their careers? These are questions SfN sought to answer in its three-year series of workshops called Department Chair Training to Increase Women in Neuroscience (IWiN). Now concluded, the workshops amassed a wealth of information and launched a set of new resources designed to help the field improve the way institutions hire and promote women in STEM fields.

Jill Becker, who is senior research scientist at the Molecular and Behavioral Neuroscience Institute at the University of Michigan, was co-principal investigator on the National Science Foundation grant that funded IWiN along with Anne Etgen of the Albert Einstein College of Medicine. Becker said in a video featured in the online IWiN material that Society for Neuroscience’s commitment to increasing women in neuroscience will continue.

SfN is excited to leverage the program’s resources “to continue professional development activities to make sure people know about implicit bias, how to recruit diverse faculty, and how to make the climate welcoming for diverse faculty,” Becker said in the video available at SfN.org.

Throughout the workshops, held in five locations across the United States, participants expressed surprise at how implicit bias, even from women themselves, contributes to a culture that discourages women faculty from pursuing tenure. Participants brainstormed ways to correct this bias and create best practices for recruitment, promotion, tenure, and climate.

The IWiN workshops were developed in 2010 as part of NSF’s ADVANCE program, aimed at “increasing the representation



Faculty members and hiring committee members from dozens of universities and institutions brought their ideas to the table at the five IWiN workshops held across the country.

and advancement of women in academic science and engineering careers.” The program funded five workshops, held in Washington, DC; Ann Arbor, Mich.; New York City; Tucson, Ariz.; and Irvine, Calif. Representatives of 43 institutions attended the workshops. They learned that 40-50 percent of women leave universities before making the transition to tenure-track faculty, and that women faculty who do make it to full professorship earn significantly less than their male peers.

Marci Levine, the ADVANCE grant manager at Lehigh University, leads a project to improve the number of women in STEM departments and address climate issues. When the project began, Lehigh had 40 STEM women faculty members out of 246 STEM tenured or tenure track faculty. After four years, the university has made modest gains and now has 44 STEM women faculty.

In 2011, Lehigh sent several faculty members to an IWiN workshop, and they came back inspired. Using an idea from the workshop, the Lehigh faculty brought in the Cornell Interactive Theatre Ensemble (CITE) to explain implicit bias to their colleagues in a way that takes the blame out of the equation. “With IWiN you get insight into what works and what doesn’t work, and the resources to explain it to other department chairs,” Levine said. “This coming year, we are bringing (CITE) back (to Lehigh) to do a performance, because the feedback we got was, ‘This is not just for the search committee members, but all faculty need to see this.’”

The Lehigh program also instituted a lunch group where women faculty members discuss scholarship and careers. Based on feedback from the group, it will be expanded to include men. “They all know a few colleagues who are the good guys, and the question is, how can you get that to spread?” Levine said. “The collegiality, the comradery issues are important for men and for women, and we’re going to be moving forward with resources and guidance for department chairs.” ■

SfN.ORG AND OTHER RESOURCES

Voices From Across the Field: www.sfn.org/careers-and-training/women-in-neuroscience.

Webinars and online courses on www.sfn.org/IWiN include:

- Recruiting a Diverse Faculty
- Improving Promotion and Tenure Practices
- Creating a Favorable Work Climate
- Confronting Implicit Gender Bias

Annual Meeting implicit bias workshop: “Tackling Bias: Best Practices for Recruiting and Retaining a Diverse Faculty,” 2:30-5 p.m., November 9. Organizers: Jill Becker, Ann Etgen, and Kathie Olsen.

Contact: profdev@sfn.org

NSF Leaders Discuss Opportunities in Brain Science Programs



John C. Wingfield
NSF Assistant Director
of Biological Sciences
Courtesy: National
Science Foundation

John C. Wingfield is the assistant director for the Directorate of Biological Sciences at the National Science Foundation (NSF). He serves as the NSF representative and ex-officio on the BRAIN Advisory Committee to the National Institutes of Health (NIH). Diane Witt is the cluster leader for the Programs in Neural Systems, Division of Integrative Organismal Systems in the Directorate for Biological Sciences.

Why do you think it is such an exciting time for scientists to focus on progress in brain science?

When scientists do ultimately figure out how the brain works, this accomplishment will probably be considered the greatest scientific achievement in all of human history. Many disciplines are making precedent-setting interdisciplinary collaborations that may hold the key to understanding the brain.

Neuroscience is being advanced by major new discoveries in biology, physics, chemistry, mathematics, and engineering. Also, expanding concepts in cognitive science are generating exciting new research lines. At the

same time, advances in computational neuroscience are providing us with new tools for handling the types of big data sets generated by neuroscience research and for integrating data across time and scales.

All of these fields are expanding at a rapid pace and generating unprecedented tools for brain research. Two examples of interdisciplinary technologies that have created entirely new research areas are optogenetics and CLARITY, which were invented with funding from NSF and others.

NSF has been actively expanding and better integrating its neuroscience programs for the last several years. Tell us more about those efforts.

NSF has long supported innovative neuroscience research through all of our Directorates. Recently, a series of events increased public interest in neuroscience, beginning with a National Academies report in 2010 that identified “understanding the brain” as one of the five grand challenges in life science today.

One year later, Congress — with strong support from Rep. Chaka Fattah (D-Pa.) — directed the White House Office of Science and Technology Policy to establish an Interagency Working Group on Neuroscience to help guide future investments in neuroscience research. Additionally, at NSF, the Directorates for Biological Sciences, Computer and Information Science, Engineering, and Social, Behavioral and Economics established a Cognitive Science/Neuroscience initiative in 2012/2013 with a specific request in the fiscal year 2014 budget. In March 2013, NSF issued a Dear Colleague Letter calling for cross-cutting proposals that could accelerate new research across disciplines.

Today, NSF is one of several federal agencies playing a key role in the president’s BRAIN Initiative, and we are directing a portion of our investments towards proposals that offer the potential to transform neuroscience and cognitive science. Our activities will build on NSF’s ongoing support of research in cognitive science/neuroscience. The first NSF BRAIN activity was a workshop sponsored by our Biological Sciences and Mathematics and Physical Sciences division to scientists together to identify basic principles of brain structure and function. Another NSF workshop was held to provide a forum for the discussion of challenges in mapping and engineering the brain.

NSF continues to invite participation from scientific leaders through opportunities such as the Biological Sciences sponsored workshop at HHMI’s Janelia Farm to be held in October.

What unique role does NSF seek to play in the BRAIN Initiative?

The BRAIN Initiative is a joint effort by federal agencies, specifically the NSF, the NIH, and the Defense Advanced Research Projects Agency (DARPA), and private partners, to support and coordinate research into how the human brain works. The role of NSF will be to lead a multidisciplinary effort by scientists and engineers to advance the research and neurotechnological development, and educate a competitive workforce needed for the BRAIN Initiative to succeed. NSF will contribute to foundational knowledge, invest in neurotechnology for high-resolution measurements, advance computational models, establish frameworks, and explore avenues for data storage, management, and analysis.

NSF’s scientific review of funding proposals ensures that many voices are heard and that only the best projects make it to the funding stage. In addition, basic research funded by NSF fuels technological innovations and is critical to

fostering the vitality of the U.S. science and technology enterprise and the growth of highly-skilled jobs.

How can SfN and its members support NSF's efforts to communicate with the public and policy-makers about the benefits of basic science, and the importance of interdisciplinary science?

There are many ways for SfN and NSF to work together to advance neuroscience, including many communications opportunities. Throughout the year, NSF works to incorporate outreach efforts into the "broader impacts" components of NSF awards, and encourages awardees to work with their public information officers to reach out to the media. Researchers funded through NSF are encouraged to let us know when studies are being published — we've set up a special email (understandingthebrain@nsf.gov) so please let us know!

We also encourage SfN members to learn more about all of NSF's programs. The annual meeting is a terrific place to start. NSF is hosting a booth at Neuroscience 2013, and we invite attendees to come and meet program directors involved in neuroscience activities. We will also provide an

informational session on funding opportunities, and will report on the NSF role in the BRAIN Initiative.

Are there other NSF programs, initiatives or events in which SfN members should get more involved?

One Directorate we have not mentioned is Education and Human Resources (EHR). In the future, we expect more developments in undergraduate and graduate education to train the work force that will move the BRAIN Initiative forward. EHR, the other Directorates and our Office of Legislative and Public Affairs will be highlighting NSF awards, workshops, public announcements, and other ways of communicating the achievements of our principle investigators.

Lastly, NSF is always looking for "rotating" program directors from various institutions to spend time at NSF, playing a vital role in the merit review system, setting standards for neuroscience, and influencing new directions in brain science. Directors retain ties to their institution and then return with a wealth of skills and knowledge on how NSF awards are allocated. ■

SfN.org is your key source for neuroscience news.

Check the redesigned SfN.org site for the latest about Neuroscience 2013, cutting-edge research in *The Journal of Neuroscience*, and peer-reviewed teaching resources in *BrainFacts.org*. SfN.org provides access to events across the field and SfN programs — all with science at the center.

Visit SfN.org to:

- Sign up for e-alerts for customized news and information.
- Connect with leaders and peers in the international neuroscience community on *NeurOnLine*.
- Learn how to advocate for science.
- Find out about career and advancement opportunities.
- Check the calendar for upcoming events.



Scientists Examine How Brain Structure and Function Change During Adolescence

As many neuroscientists know, adolescence is a dynamic time of change in the brain. Research is now revealing active growth of teenagers' social skills and decision-making processes during this period.

"Adolescence marks an important and dynamic time in brain development, both in terms of changes in connectivity and specialization," said Jay Giedd of the National Institute of Mental Health (NIMH), who moderated a press conference on adolescence at Neuroscience 2012. As a result, adolescents represent a fascinating subject for neuroscientists to study.

During the press event, scientists described emerging research revealing the ways brain structure and function change during adolescence, and how early life experience influences behavior during this period.

SOCIAL BRAIN CONTINUES TO DEVELOP DURING ADOLESCENCE

Social cognition equips people with the necessary skills to understand and interact with one another. While social skills continue to develop during adolescence, it was not previously well-understood how the regions of the brain related to social cognition develop during this time.

To examine these changes, press conference presenter Kathryn Mills and colleagues at the UCL Institute of Cognitive Neuroscience in London and the NIMH took multiple brain scans of nearly 300 individuals between ages 7 and 30. The researchers found decreases in gray matter volume and thickness in four regions of the "social brain" (medial prefrontal cortex, temporoparietal junction, posterior superior temporal sulcus, and anterior temporal cortex) between adolescence and adulthood.

"The ongoing development of the social brain during adolescence possibly helps adolescents navigate the new social demands they encounter after the onset of puberty," Mills said.

EMOTIONAL EXPERIENCES EARLY IN LIFE INFLUENCE RESPONSE TO REWARD IN LATE ADOLESCENCE

The brain's reward system undergoes significant changes during the transition from childhood to adulthood. This period presents enormous opportunity for the brain, but also marks a period of increased vulnerability, with the emergence of several psychiatric disorders including depression.

Press conference presenter Erika Forbes of the University of Pittsburgh described how she and her colleagues studied whether emotional experiences early in life alter the brain's response to reward in late-adolescence. As part of the Pitt Mother-Child project, Forbes and her colleague Daniel Shaw tracked the behavior of more than 100 young men over a 10-year period, beginning at age 10. They assessed mental health and observed the interactions between the young men and their mothers. At age 20, the men received an fMRI scan while performing a monetary reward task.

The researchers discovered that men who reported depression at any point in their lifetime had decreased activity in the ventral striatum and increased activity in the medial prefrontal cortex when performing the reward task compared with individuals with no history of depression. Additionally, men who displayed more positive emotions toward their mothers as children showed greater activity in the amygdala when performing the reward task.

"We're reporting a long-term association between behavior and brain function — in this case, up to 10 years," Forbes said. The findings suggest "positive family relationships and mental health could promote brain development."

COGNITIVE STIMULATION EARLY IN LIFE PREDICTS BRAIN STRUCTURE IN LATE ADOLESCENCE

Animal studies have shown that early environment can have long-term consequences for how the brain develops and functions. However, less is known about how early life experience affects the human brain. Press conference presenter Martha Farah described how she and others at the University of Pennsylvania examined whether early experience might influence brain structure later in life.

For the study, the researchers visited the homes of more than 60 children at age 4 and again at age 8. There, they assessed the level of cognitive stimulation (i.e., presence of toys that teach numbers and letters or 10 or more books). The researchers also evaluated the degree of nurturing displayed by the parent toward the child. At age 19, the study participants received an MRI.

Farah's group discovered that the degree of cognitive stimulation in the home environment at age 4 predicted the thickness of several regions of cortex in late adolescence. Neither the degree of cognitive stimulation at age 8 nor the

parental nurturance at either age predicted cortical thickness later in life.

Farah cautioned that while findings cannot speak to causality, “the value of this research is that it’s a first step at looking at how early life experience impacts structure later in life.”

EARLY DIET MAY INFLUENCE RISK OF DEPRESSION IN LATE ADOLESCENCE

Early diet also influences healthy brain development in adolescence, noted press conference presenter Christopher Butt of DSM Nutritional Products in Boulder, Colorado.

Although previous work suggests that diets rich in omega-3 fatty acids enhance mood in adults, it is unclear whether exposure to specific omega-3s during gestation alone is enough to produce these effects or whether it is required throughout the lifetime. Butt’s group fed pregnant rats and their offspring a diet that either contained the omega-3 fatty acid docosahexaenoic acid (DHA) or did not. Later, the researchers measured depressive-like behaviors in the offspring before and after puberty using the forced swim test.

While exposure to DHA had no bearing on behavior in the animals before puberty, after puberty, the animals on a

lifelong DHA diet displayed a lower amount of depressive-like symptoms than rats that had no DHA in their diets. Additionally, rats fed DHA-rich diets had higher levels of brain-derived neurotrophic factor (BDNF) and serotonin — biomarkers that are typically low in people with depression. According to Butt, the study points out the important roles that diet and DHA likely play in brain development and health throughout the lifetime.

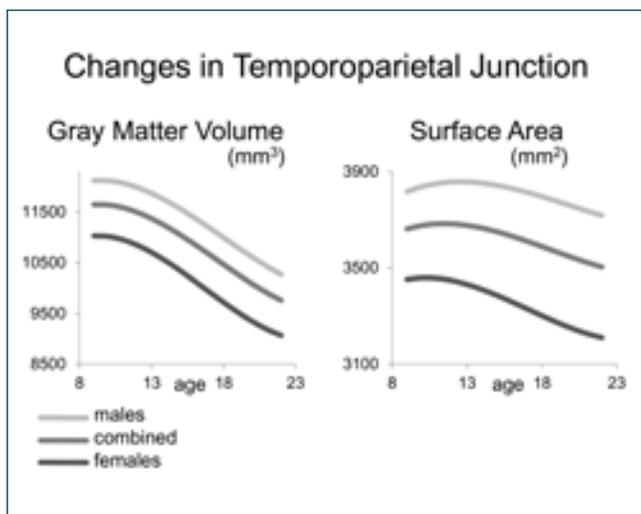
TEENS ARE WILLING TO WAIT FOR LARGER REWARD

While data presented during the press conference suggests that early diet and life experience can set the brain on a developmental trajectory during adolescence, press conference presenter BJ Casey of Weill Cornell Medical College described her interest in what goes on in the minds of teens when they are “in the heat of the moment,” and how their heightened sensitivity to reward drives them to act out in ways they might otherwise not.

Curious whether there might be a way to take advantage of teens’ sensitivity to reward to help guide them to better choices, Theresa Teslovich, Casey’s graduate student, and her colleagues asked teens and adults to perform a task in which they could earn a high or low number of points by correctly detecting the direction of dots moving on a screen. They found that teens spent more time deliberating before making a decision if greater point values were at stake. In contrast, adults made decisions faster as reward values increased. fMRI scans revealed the longer adolescents were willing to wait before making a decision, the greater the activity in the ventral striatum of the teens.

“What’s interesting is this same system, the reward system ... can drive behavior in an impulsive way and it can also drive behavior in a very motivated, decisive way. It depends on what brain regions it’s talking to,” Casey said. “We think that these findings have huge implications for interventions for teens.”

Studies examining the development of the adolescent brain are just beginning to offer new details about how early life experiences can set teens on the right developmental path and encourage them to be more thoughtful about the decisions they make. During the press event, panelists expressed optimism that future studies may one day help scientists better understand how genes and experience shape the brain, and offer more insights for teens, caregivers, and teachers. ■



Regions of the brain involved in social cognition continue to mature during adolescence. The above image displays structural changes in the temporoparietal junction over time, based on data collected from multiple brain scans of nearly 300 people between ages 7 and 30. Courtesy of Kathryn Mills.

SfN-Funded Workshop Provides Training for African Medical Faculty

Twenty-six junior medical faculty from 11 African countries took part in a teaching workshop this summer in Rabat, Morocco, aimed at improving the foundations of neuroscience knowledge and fostering leaders who will train students and advocate for neuroscience education across the continent.

“This workshop is a necessary recommendation for everybody in Africa teaching any aspect of neuroscience,” one participant wrote in a survey after the workshop, held June 7-12 in conjunction with the 11th Society of Neuroscientists of Africa International Conference. “It has empowered me in all ways to become a good teacher.”

The Africa Regional Committee of the International Brain Research Organization (IBRO) sponsors the workshop, which SfN has co-funded for the last six years. The Grass Foundation joined as a partner this year.

Organizer Sharon Juliano, professor at the Uniformed Services University of the Health Sciences in Bethesda, MD, reported that the workshops seem to be advancing neuroscience instruction in Africa. Past participants have been successful in presenting proposals to create neuroscience curricula in their institutions, and were able to implement lessons learned from the workshops.

As in previous years, IBRO updated and improved workshop content in order to help participants meet the challenges of teaching at African universities: overcrowded classes, limited access to technology, and problems getting consistent, reliable electrical power in the classrooms.

“We increased the number of sessions on ‘how to teach effectively’ and (the number of) discussion sessions,” Juliano noted. “We made our discussion sessions more structured by presenting the attendees with specific questions to address and an order of progression.”

Juliano noted that all of the workshop components provide time for discussion about how to teach effectively, as well as interactive activities and group labs.

Because of the diversity of students and courses, the workshop focused on training instructors how to teach students the basic elements of neuroscience: fundamentals of neurons and glia, principles of electrophysiology, selected aspects of sensory and motor processing and function, and



Neuroscience instructors participate in the 6th Teaching Tools Workshop in Rabat, Morocco, sponsored by SfN and African Regional Committee of IBRO. Photo provided by Janis Weeks.

limbic system function. Workshop attendees also took part in a special lecture by Michael Boivin of Michigan State University, who spoke on the issue of “Cognitive Rehabilitation After Severe Malaria,” sponsored by The Grass Foundation.

“One of the intents of the Teaching Tools Workshop is to provide tools to be used by these teachers to encourage more efficient, clear, and interactive teaching,” Juliano said. “The participants leave with all the tools they were exposed to during the workshop, including lectures, interactive laboratories, atlases, and other materials and software (e.g. *Neurons in Action*, to teach electrophysiology).”

The workshop curriculum was also tailored to the types of courses taught by faculty at African universities. Very few universities offer programs or even full courses in neuroscience, yet faculty teach courses that often include aspects of neuroscience, such as neuropharmacology. In addition, faculty train students who are pursuing a broad range of specialties. Most are medical students, but they may also be nursing, biomedical, physical therapy, or veterinary students, and in many cases, a combination of students from a variety of disciplines.

“It has increased my passion for neuroscience and definitely my approach to teaching neuroanatomy/neuroscience will greatly improve,” wrote one workshop participant. ■

“ There has never been a more exciting time to be an explorer of the brain and SfN programs played a catalytic role in supporting advances in the field. ”

—Larry Swanson
President, 2012–13



Insight into YOUR Professional Society — SfN 2013 Annual Report:

- Nearly 30,000 attendees, 900 scientific sessions at Neuroscience 2012, and debut of dynamic posters.
- New mobile app for the annual meeting and *The Journal of Neuroscience*.
- News coverage of *The Journal of Neuroscience* content exceeds 10,000 articles world wide.
- SfN in more than 100 countries, with non-U.S. membership at 39 percent.
- Celebrating 30 year anniversary of Neuroscience Scholars Program, and achievements in advancing women in neuroscience.
- SfN members advocate for neuroscience research as budgets tighten worldwide.
- *BrainFacts.org* reaches 1 million pageviews, with more than 1,000 visitors each day, 50 percent outside the U.S.
- SfN maintains solid financial position leveraging prudent stewardship of funds.

Special Feature Series: Science in Progress

Three science-focused articles explore the potential of neuroscience research and its impact on the world around us.

Public Events

Public sessions at Neuroscience 2013 highlight the intersection of science and society. These sessions are free and open to the public for those with valid ID. All public events will be held in the San Diego Convention Center.

DIALOGUES BETWEEN NEUROSCIENCE AND SOCIETY: THE CREATIVE CULTURE

Speaker: Ed Catmull, PhD, president of Walt Disney Animation Studios and Pixar Animation Studios

Support contributed by: Elsevier

Date & Time: 11 a.m.-1 p.m., Saturday, November 9

Location: Ballroom 20

Ed Catmull, president of Walt Disney and Pixar Animation Studios, will speak on creativity. Catmull has been at the center of fostering collaborations across artistic and technological disciplines, and has overseen innovative endeavors for more than three decades. Catmull will speak about the issues central to uncovering genius, including removing hidden barriers to creativity and candor.

FRED KAVLI PUBLIC SYMPOSIUM: CREATIVITY

Chair: Antonio Damasio, PhD, University of Southern California

Support contributed by: The Kavli Foundation

Date & Time: 1:30 p.m.-4 p.m., Saturday, November 9

Location: Room 6A

Creativity is one of the defining traits of humanity. It manifests itself in the organization of social systems (e.g. moral, political, and economic), in the arts (from music, painting, and theater to literature and film), and in all manner of inventions (from scientific explanations and technical instruments to complex engineered systems). How does the brain work to produce such extraordinary results? Two neuroscientists, a composer (and a piano), a visual artist, and an inventor/scientist/engineer will discuss the neuroscience of creativity.

PUBLIC ADVOCACY FORUM: POLICY IMPLICATIONS FOR THE SCIENCE OF AGING AND END OF LIFE

Organizer/Moderator: Anne Young, MD, PhD

Date & Time: 3 p.m.-5 p.m., Tuesday, November 12

Location: Room 10

As the global population is living longer, the proportion of older people in the population is increasing. With aging comes a host of unique issues with profound implications, including the toll of chronic conditions such as Alzheimer's disease, Parkinson's disease, and more. How can scientific research inform policies and how can the scientific community develop advocacy strategies that highlight these challenges? Contact: advocacy@sfn.org

SPECIAL PRESENTATION: UNDERSTANDING NEW BRAIN INITIATIVES IN THE U.S. AND EUROPE

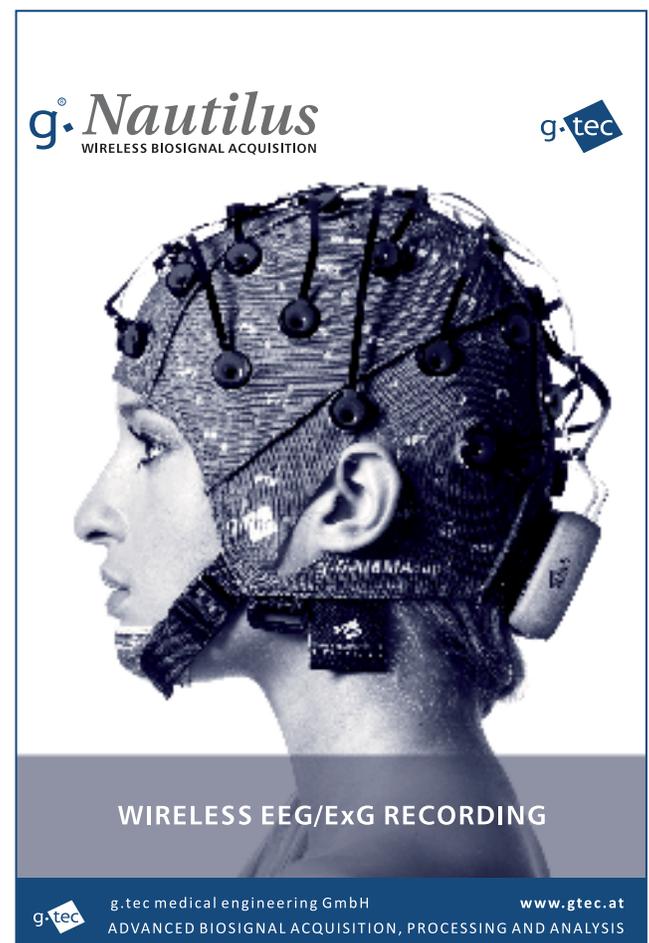
Organizer/Moderator: SfN President Larry Swanson

Date & Time: 1:15-3 p.m., Monday, November 11

Location: Ballroom 20

The great potential for development of new tools and applications across the field exist with the BRAIN Initiative in the U.S. and the European Commission's Human Brain Project.

Global leaders at Neuroscience 2013 will discuss how the initiatives are progressing and how they might affect the future of the field. ■



g.tec
WIRELESS BIOSIGNAL ACQUISITION

g.tec

WIRELESS EEG/ExG RECORDING

g.tec medical engineering GmbH www.gtec.at
ADVANCED BIOSIGNAL ACQUISITION, PROCESSING AND ANALYSIS

... Annual Meeting, continued from page 1

Gender Bias in Science Symposium

Empirical Approaches to Neuroscience and Society is a new symposium. Jennifer Raymond, a professor at the Stanford University School of Medicine, will lead discussion among researchers on gender bias. In March, Raymond published a commentary in *Nature* entitled "Sexist attitudes: Most of us are biased."

Raymond has gathered four experts in the field to discuss their research and action items on how to increase STEM positions for women. The symposium will take place 8:30-11 a.m. Sunday, November 10.

This year's symposium is the first in a three-year pilot program that will apply hard science to an important issue in the neuroscience community.

Global Advocacy Symposium

Recognizing the challenging global funding environment, The Global Advocacy Committee of the International Brain Research Organization (IBRO) and SfN are hosting a panel on advocating for biomedical research funding. The featured guests will share information about their efforts to raise public awareness and encourage government support for neuroscience.

The panel will be introduced by SfN President Larry Swanson and Secretary-General of IBRO Sten Grillner, and moderated by David Kaplan, a member of the Advocacy Office for the Canadian Association for Neuroscience. "Enhancing Global Cooperation on Advocacy" will be held 3-5 p.m. on Monday, November 11. Limited seating is available. Please RSVP on the Events and Meetings page of the annual meeting section of SfN.org.

ENHANCED PLANNING RESOURCES

Meeting Planner and Curated Itineraries

The Neuroscience Meeting Planner (NMP), an online tool for navigating

annual meeting sessions and events and searching abstracts available at SfN.org, can help attendees build a meeting itinerary. New are curated itineraries that include specific tracks chosen by the SfN program committee. The itineraries are designed to help attendees focus on selected topics and navigate sessions. The topical tracks for this year's curated itineraries are: advanced methods focused on the cortex, epilepsy, and plasticity.

EXPANDED FEATURES

Dynamic Posters

Dynamic posters debuted at Neuroscience 2012, and the poster session will expand this year to include 10 dynamic poster presentations per half day for a total of 90 presentations at the meeting. These multimedia presentations allow presenters to display on a flat screen with animation, sound, video, and digital images. They will be available during normal poster floor hours in Halls B-H of the San Diego Convention Center.

A list of dynamic poster presentations is available at SfN.org.

Graduate School Fair

The graduate school fair has expanded to two days, featuring face-to-face meetings with student advisors, program faculty, and graduate school representatives. It will be held from 12-2 p.m., Sunday, November 10, and Monday, November 11, in the Sails Pavilion. For more information, contact profdev@sfn.org.

Art of Neuroscience

Showcasing artists who create brain- or neurological-inspired pieces was popular at last year's meeting, and SfN is expanding the Art of Neuroscience exhibit for 2013. As many as eight artists will be displaying and selling their art and jewelry, all related to the field. Stop by the lobby of Ballroom 20 to visit the exhibit. ■

Published quarterly by the Society for Neuroscience

Circulation: 44,300

© 2013 Society for Neuroscience

Opinions and advertisements expressed in *Neuroscience Quarterly* do not necessarily reflect those of the Society or its officers and councilors or imply endorsement of a product or service.

Officers, Councilors, and Staff

President: Larry W. Swanson

President-Elect: Carol Ann Mason

Past President: Moses V. Chao

Secretary and NQ Editorial Advisor: Hollis T. Cline

Secretary-Elect: Tatiana Pasternak

Treasurer: Brenda J. Claiborne

Treasurer-Elect: Stephen G. Lisberger

Past Treasurer: Darwin K. Berg

Councilors: M. Catherine Bushnell, Michael E. Greenberg, Nancy Y. Ip, John H. Morrison, Edvard I. Moser, Sacha B. Nelson, Marina R. Picciotto, Li-Huei Tsai

Executive Director: Marty Saggese

Deputy Executive Director (Operations): Kate Hawker

Deputy Executive Director (Programs and Finance): Mona Miller

Executive Editor: Mona Miller

Managing Editor: Anne Nicholas

Editorial Staff: Charlotte Hancock, Merrie Leininger, Jessica Johnson

Production Staff: Amit Kumar, Amanda Scanlon, Naomi Taylor

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

COMING SOON

Designing your own calendar is easier with the improved mobile app for iPhone, iPad, or Android. The app includes an improved search function of:

- » nearly 16,000 abstracts;
- » a list of what's new;
- » a way to connect with other attendees;
- » and easier direction and mapping of posters.

Free and available for download in iTunes and the Google Play App Store in mid-October.





**SOCIETY *for*
NEUROSCIENCE**

1121 14th Street NW, Suite 1010
Washington, DC 20005

Nonprofit Org.
U.S. Postage Paid
Permit No. 87
Dulles, VA

ISCAN EYE MOVEMENT MONITORING SYSTEMS

WHEN YOUR RESEARCH IS BREAKING NEW GROUND
WHEN YOU WANT THE BEST PRODUCT SUPPORT
WHEN YOU NEED THE HIGHEST QUALITY
WHEN RESULTS *REALLY* COUNT

Since 1980 ISCAN® has provided the finest instrumentation for non-invasive, real-time measurement of pupil position, size and eye point of regard. Standard systems include head or remote mounted eye imaging, data collection and processing components for human and other animal subjects. High speed, MRI compatible and mobile/portable options are available. Customized systems can be built for any application or operating environment.

www.iscaninc.com
Tel: 781-932-1199 email: info@iscaninc.com