

NEUROSCIENCE

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Q U A R T E R L Y

“The importance of mentoring reflects the fact that success is never a solo effort; in the lab, in our daily lives, and in our careers we rely on a network of people to share ideas, knowledge, experience, or to bolster confidence and open our minds to new possibilities.”

— Susan Amara,
SfN President

IN THIS ISSUE

NDP Survey Highlights Changes and Challenges in Neuroscience Programs	1
Message from the President	1
Spring U.S. Advocacy Push: Visit Locally with Legislators	3
Q&A: Sten Grillner: Advancing Research in the European Community	4
Inside Science: Sensory Overlap in the Brain	6
Showcasing the Power of Public Education	10
Inspiring Speakers, Cutting-Edge Science.....	12

NDP Survey Highlights Changes and Challenges in Neuroscience Programs

Neuroscience departments and programs are plentiful, diverse in organization and goals, and still evolving, according to the most recent survey of Neuroscience Departments and Programs. The biennial survey, commissioned by SfN, monitors that evolution by identifying common trends, challenges, and opportunities among the diverse departments and programs. The findings of the latest survey offer insight and useful data to inform colleagues, deans, students, and federal agencies that support predoctoral and postdoctoral training programs.

SURVEY BACKGROUND

The first survey of such training was conducted in 1986, and in recent years they have been conducted biennially. With the consolidation of ANDP with SfN in July 2009, SfN's new Committee on Neuroscience Departments and Programs (CNDP) assumed responsibility for the surveys. The latest survey focused on academic year 2009-2010, and responses were obtained from 114 of the 134 graduate training programs that were Institutional Program (IP) members of SfN, almost all of which were located in the United States. A broad cross-section of programs was represented. Responses were

Continued on page 8...

Message from the President

Building the Field of Neuroscience Through Mentoring



Susan Amara,
SfN President

I am sure each of us can think of individuals whose advice and inspiration made a difference in our careers. For me, it was my thesis advisor with his passion for cutting-edge science and later, my first department chair who was a great listener, advising and encouraging in an easy, understated way. There are undoubtedly many other individuals whom you have counseled or advised, or for whom you've simply served as an extra set of ears. How gratifying it is to mentor others, to feel you've contributed, even in a small way, to the professional growth of a colleague or young neuroscientist!

The importance of mentoring reflects the fact that success is never a solo effort; in the lab, in our daily lives, and in our careers we rely on a network of people to share ideas, knowledge, experience, or to bolster confidence and open our minds to new possibilities. And no matter where you are in your career — in training, early-career, established researcher, or emeritus — you have something valuable to share with others going through a stage you've already passed through.

Continued on page 2...

Throughout the years, by conscious effort or plain good luck, we are fortunate enough to meet people who fulfill these roles and help define our career paths. Sometimes, it's a person who provides timely advice, other times it's someone who acts as a sounding board or the calm voice of reason in a moment of confusion. These individuals have many names: family, friends, students, advisors, role models, coworkers ... and mentors.

“A mentor–mentee relationship can be a life-long connection or a one-time conversation seeking guidance on a specific topic or concern. No matter how enduring or brief, a little input can have a great impact.”

NEW SfN MENTORING COMMUNITY

Recognizing the importance of mentoring to all our professional lives, SfN has launched a broad new initiative aimed at helping members around the world find and connect with a mentor. I urge you to join, as either a mentor, a mentee, or both. Many of you have said you want to participate more fully in and contribute to your professional society year-round. Now is your chance to do so as part of this new program featuring mentor-matching, discussion forums and information resources on topics such as work-life balance and finding jobs outside of academia — all in a unique, easily accessible online community. The goal is to make connecting fast, simple, and interactive. Once you have enrolled, you can search the database of SfN members to find people you can connect with online, by phone, or face-to-face at the SfN annual meeting or elsewhere. You can learn more at www.sfn.org/mentoring.

MENTORING: MANY FORMS AND MANY WAYS

The National Academies define a good mentoring relationship as “characterized by mutual respect, trust, understanding, and empathy. Good mentors are able to share life experiences and wisdom, as well as technical expertise. They are good listeners, good observers, and good problem-solvers. They make an effort to know, accept, and respect the goals and interests of a student.”

Anyone can be or have a mentor. At every career level, from student to professor, we need someone to listen, to provide advice, or simply to say “I’ve been there.” In fact, many people don’t realize they can be mentors at many stages in their lives. For instance, getting through coursework and finding the right laboratory for a dissertation can be challenging, and students who have just recently succeeded in those efforts can be great mentors.

Still, some may shy away from the term “mentor” as outmoded or time-consuming, neither of which is true. By any name — mentoring, coaching, or networking — may be a deeper long-term commitment or it may be as straightforward as a periodic e-mail, a status update on Facebook, a phone call, or meeting for coffee at the SfN annual meeting.

A mentor–mentee relationship can be a life-long connection or a one-time conversation seeking guidance on a specific topic or concern. No matter how enduring or brief, a little input can have a great impact.

“Developing a broad network of mentoring relationships is important as no single person can know everything needed for success.”

During stressful times, as in the present economy, a support system is even more valuable. Few are untouched by challenges of flat funding and the concern it generates. I often hear from junior faculty and young neuroscientists who, at a time when they are most passionate about the promise of science, are simultaneously worried about the viability of their chosen career. At such a time, good advice is never passé and, in fact, more critical than ever.

Occasionally, mentoring may blossom into career opportunities or foster collaboration. In the experience of one SfN mentee matched with a mentor: “I had a long talk with my mentor about my current project and my career aspirations. As a result, she and I are collaborating on a project, she is going to recommend me for a position at her institution, and she may include me on an Alzheimer’s disease grant. What could be better than that?”

Developing a broad network of mentoring relationships is important as no single person can know everything needed for success. Everyone benefits from multiple mentors of diverse talents, ages, personalities, and perspectives. As a former participant in SfN's Neuroscience Scholars Program commented, "My mentor advised me well on lab dynamics and career goals, talking freely about his students' experiences as well as his own. I appreciated such feedback coming from an experienced, objective mentor outside my own lab/institution."

GIVING AND RECEIVING

Mentoring is a great way to "give back" to your profession, no matter what stage of your career you're in. As one of SfN's young neurobloggers wrote in the lead-up to the annual

meeting, "This year — besides presenting my own work — I am eagerly anticipating the mentoring event. Two years ago, I was one of the mentees, and it is time to give back."

Success is never a solo effort. It takes a network. As SfN does in other facets of our work as neuroscientists, from the annual meeting to *The Journal of Neuroscience*, it is providing a means to connect and reinforce the network of neuroscientists. But as with these other SfN activities, it is you — the SfN members — who will bring it to life. Just as your science and your feedback provides the rich grist for annual meeting symposia and discussions within *The Journal*, you also can animate and enrich SfN's mentoring program by providing your experiences and sharing your time in support of career-long professional development. ■

Spring U.S. Advocacy Push: Visit Locally with Legislators

During spring 2011, SfN is focusing U.S. advocacy efforts on local impact. It is critical for incoming and returning members of Congress to hear from SfN members that science must be a priority in FY2011 and FY2012 budgets, and the strong case for the health and economic benefits of biomedical research. Local events are a convenient and effective way to communicate with legislators and SfN makes it easier with ready-made resources and by connecting members with other experienced members who have hosted events.

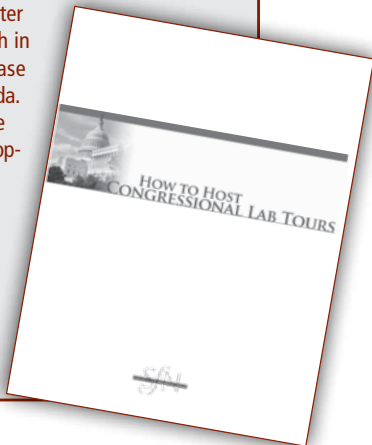
For example, inviting members of Congress for a lab tour will jump-start the process of building a relationship with legislators and their staff on science related issues. By showcasing neuroscience research in a lab setting, members of Congress will see firsthand the cutting-edge discoveries being conducted in their congressional district, along with the economic benefits of basic research.

District meetings also are an effective way to engage with elected officials. A district meeting, normally lasting up to an hour in the legislator's local office, provides an opportunity for SfN members to discuss their research one-on-one with their member of Congress and the need for a strong and sustainable funding platform to continue scientific innovation, job creation, and improving the local and national economies.

Make an appointment to meet with your member of Congress or a staff member in their local congressional district office, or invite them to a lab tour. The new Congress plans more local work time, with one week a month back in home communities. For more information, check out the *SfN Guide to Public Advocacy* or download the new resource kit, **How to Host Congressional Lab Tours**. These resources — along with state fact sheets, talking points, and other easy-to-use tools — are available at www.sfn.org/advocacy. Have questions and want to learn more? SfN staff can help; contact advocacy@sfn.org. ■



This summer, SfN member Nick Spitzer (right) and colleagues at the University of California, San Diego (UCSD), hosted a lab tour for Rep. Susan Davis (D-CA) (left) highlighting cutting-edge UCSD neuroscience research and the importance of federal funding for basic science research. Last year, Todd Golde also hosted Rep. Cliff Stearns (R-FL) at the Center for Translational Research in Neurodegenerative Disease at the University of Florida. Rep. Stearns witnessed the newest research on developing treatments and diagnostics for Alzheimer's disease and other neurodegenerative diseases, which will affect many of the Congressman's aging constituents.



Sten Grillner: Advancing Research in the European Community



Sten Grillner,
FENS President

Sten Grillner is current president of the Federation of European Neuroscience Societies (FENS). He is professor and director of the Nobel Institute for Neurophysiology at the Karolinska Institute in Stockholm. Grillner also serves as chair of the International Neuroinformatics Coordinating Facility and was the corecipient of the 2005 SfN Ralph Gerard Prize, which recognizes outstanding contributions to neuroscience.

NQ: What are your key goals for the European neuroscience community during your tenure as FENS president?

My goals are to (a) develop the 2012 FENS Forum meeting in Barcelona, which promises to be a scientific “feast” with a local socio-scientific flavor; (b) work for a return to a more thorough and analytical way of evaluating science and the achievements of both young and senior investigators — rather than relying on more simplistic measures like journal impact factors; and (c) serve the community of 17,000 European neuroscientists well and promote the work of the 31 member European neuroscience societies, both small and large. As one way to better serve our members, FENS will open in January 2011 its new main office in Brussels, which will be used to further promote neuroscience in Europe and worldwide. In September 2011, FENS will hold its regional meeting in the old city of Ljubljana, the ancient capital of Slovenia, organized by the Slovenian Neuroscience Society. Finally, during my tenure as president, I will be working to promote the *European Journal of Neuroscience*, the official journal of FENS.

NQ: The FENS Forum has grown into a dynamic venue for scientific exchange, attracting increasing numbers of participants. What are your observations about how far it has come and what innovations do you have in mind for the Barcelona meeting in 2012?

The FENS Forum has grown steadily over the last decade, and we hope it will continue to do so for a while, but perhaps not all the way to the current size of the SfN meetings. We have just elected the European members of the program committee, led by Ole Kiehn. The committee has one representative elected from SfN and one from the Asia-Pacific region, this time from the Japanese Neuroscience Society. Another important aspect of the next Forum is the local flavor of

Barcelona and Spain created through Mara Dierssen, chair of the local committee, and her colleagues. One could argue that modern neuroscience was born in Spain more than one hundred years ago through Ramon y Cajal. Since then a very strong tradition has emerged — the Cajal heritage will no doubt figure at the meeting in different ways. The exceptional world-renowned chef of El Bulli will contribute with a talk on the molecular bases of cooking. Young investigators, postdocs and graduate students will, in addition to attending the meeting, have the possibility to visit laboratories in Spain for one or two weeks — financed partially through travel fellowships.

NQ: FENS and the International Brain Research Organization have been supporting the professional development of neuroscience trainees through the popular European Neuroscience Schools Programme (ENSP), an effort that SfN recently joined in collaboration. What do you see as the key professional development challenges facing neuroscientists in Europe, particularly those in their early careers?

Although the interaction between laboratories in different parts of Europe has increased markedly since “glasnost,” there is still a marked difference between the level of research funding in different European countries and even more so worldwide. The ENSP courses serve to transmit knowledge in an efficient way, and equally as important, to form lasting networks of young researchers. For these young investigators, when they get their first position at the assistant professor level, it is important to provide good start-up grants — something that needs to be better developed in Europe.

NQ: The European Union Directive on animal research was recently implemented across Europe. What impact do you think this may have on European neuroscience?

The recent EU directive will now have to be transferred into national law by the individual countries over the next two years. From what I understand, it should, most likely, not have a major negative impact on neuroscience.

NQ: What is the funding outlook for science in Europe?

Funding in Europe is fragmented — the national research councils in 31-odd countries have different priorities, and in some the financial crisis has had a significant impact

while in others, only marginally. In addition, there is funding through the different EU framework programs that issue open calls in specific limited areas of research (top-down strategy) and that require collaboration between a number of laboratories located in different European countries and also, for instance, in the United States. These grants are quite competitive and provide good levels of funding for 3 to 4 years. A major drawback is they cannot be renewed. The most important development over the last few years is the formation of the European Research Council. It accepts grant proposals from individual researchers (one program for younger researchers and another for established researchers).

One major reason for the success of the U.S. research efforts in the postwar period is, I believe, not only the levels of funding, but also the organization of the funding system itself (such as NIH and NSF), in which grant proposals have been rigorously evaluated by specialized review committees, each with a high level of expertise in the particular area being evaluated. The smaller European countries tend to have review committees that are much broader (e.g., organismal biology), which by necessity will have difficulties judging many of the applications. They therefore tend to rely on

indirect criteria rather than to evaluate the science itself, which, in the long-term, is problematic.

MQ: FENS and SfN have recently agreed to launch a new effort to promote the development of advocacy strategies by European national societies. What do you hope this new grant program will achieve?

One major role for the different national neuroscience societies is to inform the public, politicians, and different funding organizations why brain research is of critical importance, not least considering the many devastating diseases of the brain in psychiatry, neurology, and geriatrics. In the United States, SfN has developed a very impressive advocacy strategy with many different facets. FENS and SfN, which have many European members, have agreed to form an alliance to transfer much of the advocacy experience gained in the United States to FENS and the national societies in Europe. The first step will be a joint workshop held in Brussels in the summer of 2011 for FENS member societies, aimed at sharing best practices and launching an eventual FENS-SfN advocacy small grants program. ■

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Sensory Overlap in the Brain

For about 2 percent of the population, distinct sensations such as color and sound are experienced at once. This unusual combination of the senses is called synesthesia. The condition runs in families and researchers estimate that it is seven to eight times more common in poets, artists, novelists, and others in the creative arts. People with synesthesia report a variety of experiences, meaning letters and numbers may correspond to different colors from one person to the next.

During Neuroscience 2010, several researchers discussed synesthesia in a press conference moderated by Vilayanur Ramachandran of the University of California, San Diego. Their findings suggest that how the brain processes outside information is complex and that sensory overlap may not be as uncommon as previously thought.

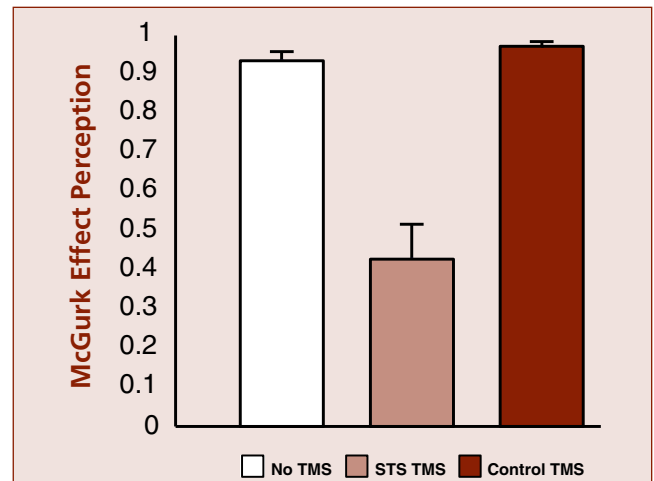
SYNESTHESIA ENGAGES THROUGH DIRECT COMMUNICATION OF THE SENSES

David Brang of the University of California, San Diego, discussed theories about the neurobiological differences in those with synesthesia. The cross-activation theory proposes that synesthesia occurs because of increased connectivity in the brain. Another theory postulates that synesthetes' brains possess a form of neural disinhibition that is not present in non-synesthetes. The research by Brang and his colleagues suggests that synesthesia in fact occurs through quick, direct communication between the senses.

Several forms of synesthesia exist, each blending two or more senses. One form is grapheme-color synesthesia, in which a particular letter or number evokes a certain color. Using magnetoencephalography to compare the brains of grapheme-color synesthetes with controls, the researchers showed that in synesthetes a neural connection is made between the brain's visual processing and color areas in a mere 5 to 10 milliseconds. This observation suggests that synesthesia may arise from direct communication in the brain between sensory areas.

THE NEURAL BASIS OF SYNESTHETIC EXPERIENCES

Romke Rouw of the University of Amsterdam studies the differences between the brains of people with two types of grapheme-color synesthesia: associator synesthetes, for whom a color appears "in the mind," and projector synesthetes, who report that the color is "in the outside world." Using



People who see a person's lips moving out of sync with words they hear often experience the McGurk Effect. However, in a recent study, people were less likely to report experiencing the phenomenon when they received transcranial magnetic stimulation to the superior temporal sulcus (middle bar). Credit: Courtesy, with permission: Michael S. Beauchamp, et al; *The Journal of Neuroscience* 2010 30(7): 2414–2417.

brain imaging techniques, the researchers revealed regional brain differences between these two types of synesthetes that could provide insight into neural crosstalk mechanisms.

A common feature is that their brains contained more white matter than the control participants. One area with increased white matter is the fusiform gyrus — known to be involved in color and language-symbol processing — which could explain the crossover sensory activation that characterizes synesthesia. Rouw reported that increased connectivity was greatest in projector synesthetes.

The researchers also used brain imaging studies to compare the quantities of gray matter to potentially explain the differences between types of synesthetes. They hypothesized that greater brain activity in the synesthetes would be represented by higher brain volume. Their research showed that projector synesthetes had greater activity in brain regions involved in the perception of and interaction with the outside world (i.e., the visual, auditory, and motor cortices, and the frontal brain areas), while associator synesthetes had greater gray matter activity related to brain regions involved in memory (i.e., the hippocampus). These findings suggest that differences in the types of synesthesia are related to the brain areas mediating the experiences.

To view the video of the press conference and related slides, go to www.sfn.org/amhighlights.

BRAIN REGION PLAYS CRITICAL ROLE IN THE MCGURK EFFECT

New research indicates that people with synesthesia are not the only ones who experience sensory overlap. Michael Beauchamp of the University of Texas Medical School gave an example from his work on the McGurk Effect, an auditory phenomenon in which viewing lips moving out of sync with words creates the perception of a different word. For example, a person watching a video of lips saying “ka” while listening to a voiceover of the syllable “pa” believes they are hearing a third word that is never actually said: “ba.”

Beauchamp and his colleagues used fMRI to study volunteers experiencing the McGurk Effect to pinpoint the source of this crisscross of auditory and visual input. The researchers found the illusion disappeared when they used transcranial magnetic stimulation to disrupt activity in the superior temporal sulcus (STS). Previous studies have shown STS plays a role in language and eye gaze processing.

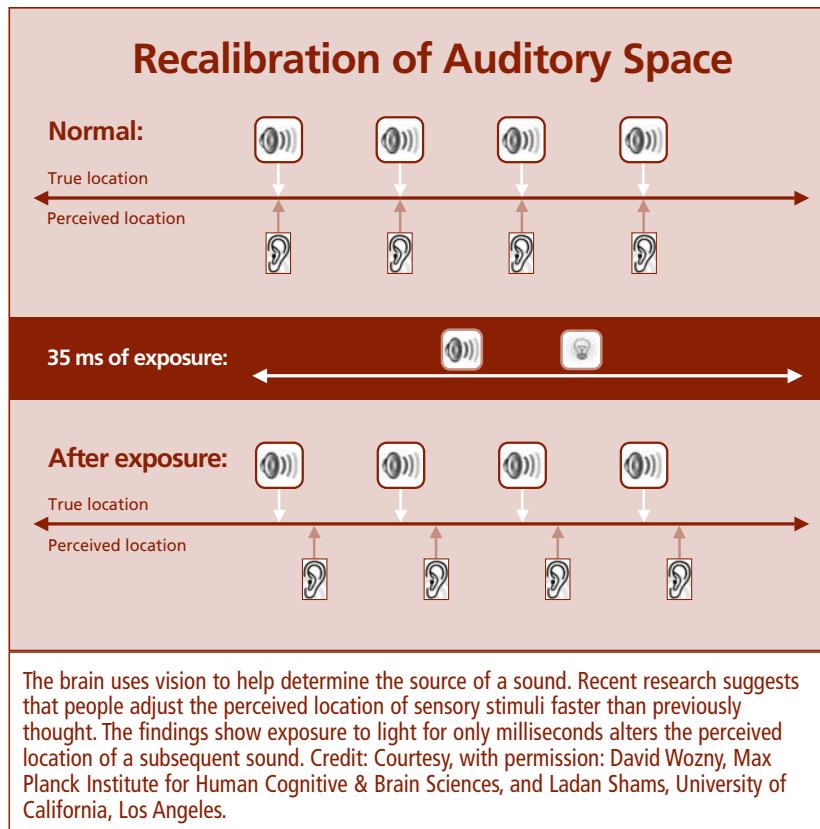
MILLISECOND LIGHT EXPOSURE ALTERS SOUND PERCEPTION

Ladan Shams of the University of California, Los Angeles, presented findings suggesting the brain uses vision to determine the source of a sound. The results provide insight into how the brain’s auditory map recalibrates based on visual input. This sensory recalibration is important for survival in environments where the perception of sounds is frequently altered, due to both everyday activities such as putting on a hat, and for more complex reasons, such as the effects of aging.

Correcting the sensory map requires a baseline to which new experiences can be compared, Shams explained. The researchers demonstrated that vision acts as this baseline. In their study, they exposed participants to short bursts of noise and flashes of light spaced at close but varied intervals. They found the perceived location of a sound was influenced by the direction of the flash in the previous experiment. The recalibration of auditory space appeared to occur after only milliseconds of exposure to a discrepancy in sensations. The researchers concluded that the brain’s auditory map can change from moment to moment, and depends in part on prior sights and sounds.

SENSATIONS DIFFER BETWEEN PEOPLE WITH SAME TYPE OF SYNESTHESIA

Avinash Vaidya of McGill University described his studies focused on two sub-types of people with associator



grapheme-color synesthesia — individuals for whom letters or numbers produce colors “in the mind.” One sub-type includes “see associators,” in which the association with colors is automatic, while the other consists of “know associators,” in which the association with color takes thought.

Vaidya and his colleagues studied the recall of symbol-color pairings by observing participants who were asked to demonstrate their recall of the colors of letters or numbers by selecting one of two color swatches that were either similar to or different from the original. As the researchers expected, the “see associators” did better. Also as expected, when the researchers compared electroencephalographic activity in people with synesthesia to control participants looking at letters, the synesthetes showed faster activation originating from the temporal lobes.

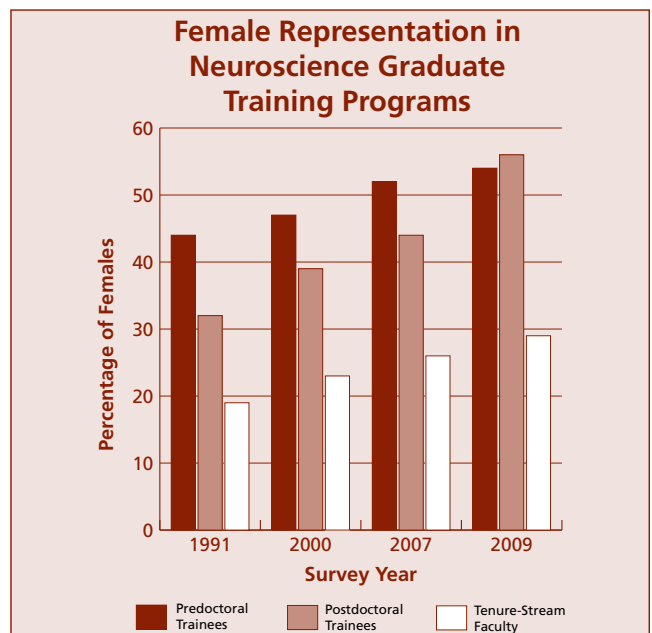
These studies show the senses are collaborative, even in people without synesthesia. New findings in research on the senses and perception may lead to new therapies for vision, hearing, language, and learning disorders. Although synesthesia is an extreme example of sensory overlap, researchers studying individuals with the condition have the opportunity to gain a new perspective on how the brain perceives and navigates the world. ■

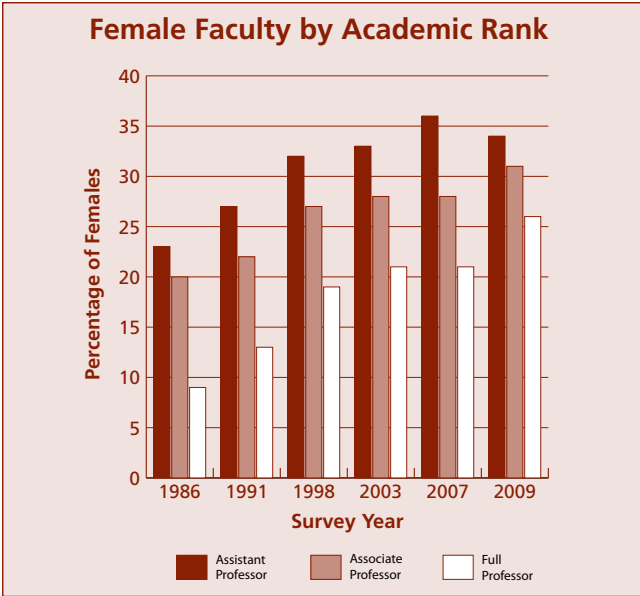
obtained from older programs and relatively new programs, from programs with many students and those with few students, and from programs located in medical schools and those located in colleges of arts and sciences. Together with past surveys, these results offer valuable opportunities for longitudinal comparisons of data.

KEY FINDINGS SHOW EVOLUTION OF THE FIELD

- Graduate training programs in the neural sciences used to be located predominantly in Schools of Medicine or Schools of Arts and Sciences. During the past decade, these graduate programs have evolved toward larger university-wide programs that link neuroscientists in multiple schools on campus.
- Although the administrative structure of graduate programs in the neural sciences is quite varied, most training is conducted in interdisciplinary programs rather than in departments offering degrees in neuroscience or in other disciplines. Graduate students trained in the neural sciences are much more likely to be awarded a PhD degree in neuroscience or neurobiology than in another discipline.
- Graduate faculty members in the neural sciences play a substantial role in undergraduate education, both by teaching undergraduate courses and by providing opportunities for undergraduate students to become involved in their research projects.
- There are 50 faculty members per program, on average, in the graduate programs surveyed. Forty-five (89 percent) have tenure-stream positions. The annual turnover in these positions is small (3 percent leaving, 6 percent arriving). Approximately half of the tenure-stream faculty members are full professors while one-fourth each are assistant professors or associate professors.
- The annual number of applications for graduate training in the neural sciences has quadrupled during the past 23 years and averages 96 per program. The number of new matriculates has doubled and is now eight students per program. The academic quality of incoming graduate students has remained high, as indicated by their undergraduate GPA (average = 3.51), scores on the GRE (70th percentile in Quantitative section, 82nd percentile in Verbal), and research experience.
- Only 22 percent of the incoming graduate students had an undergraduate major in neuroscience or behavioral neuroscience. Other common majors were biology (23 percent), psychology (18 percent), and chemistry (7 percent); an additional 12 percent had dual majors that included one or more of these disciplines.

- The mean number of graduate students per program has increased steadily in the past 23 years, from 12 in 1986 to 38 in 2009 (median = 30). The mean number of PhD degrees in neuroscience awarded annually per program was 5.0 in 2009, while the mean time to degree was 5.6 years. Only 2 percent of predoctoral trainees (0.7 per program) leave the programs annually without obtaining a PhD degree. Most new graduates pursue additional research training in postdoctoral positions (70 percent), while many others go to medical school (13 percent).
- Ninety-five percent of postdoctoral trainees in the neural sciences have a PhD degree. Postdoctoral trainees usually leave their position either to accept a faculty position or to pursue additional training; few become employed outside the field or are not employed at all.
- Predoctoral students who are female, U.S. racial and ethnic minorities, or non-U.S. citizens are equally likely to obtain their PhD degree, and obtain their degree in the same timeframe, as one another and as the American Caucasian male majority.
- Females represent 50 percent of undergraduate neuroscience majors, 54 percent of predoctoral trainees, 37 percent of postdoctoral trainees, and 44 percent of non-tenure-stream faculty members. In contrast, females represent only 29 percent of tenure-stream faculty members and 26 percent of full professors.
- Among U.S. citizens in U.S. institutions, members of U.S. racial and ethnic minorities represent 23 percent of predoctoral trainees and 18 percent of postdoctoral





trainees, but only 13 percent of tenure-stream faculty members and 14 percent of non-tenure-stream faculty members. Most of these trainees and faculty members are Asian-American. When Asian-Americans are excluded and only under-represented U.S. racial and ethnic minorities are considered, the numbers shrink to 14 percent, 10 percent, 5 percent, and 5 percent, respectively.

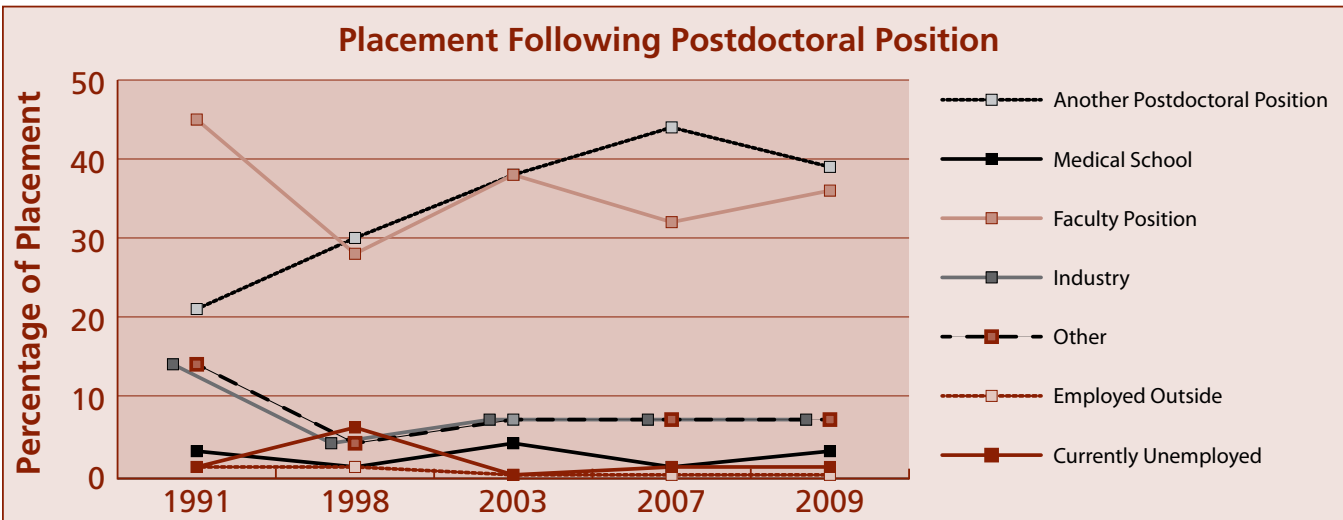
- Predoctoral trainees who are not U.S. citizens come predominantly from Asia and Europe. They represent 18 percent of predoctoral trainees, a percentage that has changed little during the past 18 years.
- The percentage of postdoctoral trainees who are not U.S. citizens increased progressively from 40 percent in 1991 to 60 percent in the 2000/2001 survey, and it has remained at approximately that level subsequently. Nonetheless, less than 10 percent of all individuals in tenure-stream graduate

faculty positions in the neural sciences at U.S. research universities are not U.S. citizens.

- Almost all predoctoral students receive stipend support, primarily from university funds (first-year students) and from research grants (more advanced students). Research grants are the major source of support for postdoctoral trainees, particularly those who are not U.S. citizens.
- Although much less information was available from undergraduate programs in the neural sciences, most programs appear to be interdepartmental in administrative structure. Most tenure-stream faculty members in undergraduate programs in U.S. institutions are Caucasian (92 percent), male (71 percent) and American citizens (96 percent). The median number of tenure-stream faculty positions is 8 per program, and the median number of undergraduate students with majors in neuroscience is 110 per program.

Despite the many indications that neuroscience is a thriving discipline, its research and training programs face several significant challenges. Some are not unique to neuroscience but are common across the biomedical sciences. For example, the recent economic recession and constraints in federal funding for research and training (relative to the increased number of applicants) should ultimately affect three interrelated, dependent variables: the size of graduate programs, the number of tenure-stream faculty positions, and the influx of foreign postdoctoral fellows. Although conspicuous decreases in these variables have not yet occurred, increases have not continued; instead, their numbers have stabilized.

Details of these and other findings, and a more extended discussion of the implications of these findings, can be found in the full report at www.sfn.org/ndp. For questions about the survey, contact ndp@sfn.org or the report's author, Edward M. Stricker, University Professor of Neuroscience, University of Pittsburgh, edstrick@pitt.edu. ■



Showcasing the Power of Public Education – Chapter BAW Outreach

With 148 SfN chapters spanning the globe in 21 countries and 47 states, Brain Awareness Week (BAW) 2011 outreach is sure to peak as chapters actively engage in neuroscience education at the local level. To celebrate the 16th annual BAW Campaign, March 14-20, chapters will host events that raise public knowledge, improve health, and excite minds about the wonders of the brain.

Getting involved is as easy as finding an existing Brain Awareness Week activity in your city or region, including those organized by SfN chapters. Brain Awareness Week 2010 was highly successful for SfN local chapters. Keep reading to find out about local chapter success and get ideas for your BAW 2011 outreach.

GET INSPIRED – SEE WHAT CHAPTERS HAVE PLANNED FOR BAW

Tempe, Arizona Chapter

The newly reactivated Tempe, Arizona chapter hosted its annual Brain Awareness Week in collaboration with Arizona State University. The chapter reached out to local and underprivileged schools in an effort to fill curriculums with brain science through classroom visits. In 2010, the chapter partnered with The Phoenix Children’s Museum in a special effort to educate a group of homeless second graders about the brain, science, and college.

The chapter also participated in the Arizona State University Brain Fair by organizing brain stations for students, teachers, and parents in the local area. Stations included: “Be-a-Scientist – Go-to-College” where participants used watercolors to stain paper brain slices and talk about the importance of continued education; a “Brain Station”



Students explore the different parts of the brain during the Montreal Chapter BAW outreach event.

where students observed a sheep brain dissection, held brains, and learned about brain lobes by making brain hats; a “Neuron Station” where students discovered neuron parts and function by building neurons with pipe-cleaners; and the “Discovery Station” had slide viewing with microscopes and Play-Doh for making brain models.

As the Tempe chapter begins planning for BAW 2011, chapter members and volunteers meet regularly to discuss event location, activity stations, budget, and funding sources.

Montreal Chapter

The Montreal chapter of SfN planned a wide range of 2010 BAW activities including one-hour workshops on the brain for elementary and high school classrooms in the greater Montreal area. The elementary school workshops taught kids about the five senses and how the brain allows us to see, hear, touch, taste, and smell while the high school workshops demonstrated how the brain responds to different types of drugs. The Montreal chapter also hosted “Science Cafés” that were open to the public. The cafes provided attendees with an opportunity to meet and discuss various neuroscience topics with guest expert panelists in an informal setting. Featured topics included memory, aging and Alzheimer’s disease; mind tricks: hypnosis, placebo and optical illusions; and early childhood development and autism.

The Montreal chapter recently received the 2010 Synapse Mentorship Award from the Canadian Institutes of Health Research for their Brain Awareness Week activities.

Kiev, Ukraine Chapter

The Kiev, Ukraine chapter hosted their first ever BAW in 2010. The week was devoted to introduce schoolchildren,

BRAIN AWARENESS RESOURCES

Find the following resources at www.sfn.org:

Brain Facts — a primer on the brain available as a PDF or as audio downloads.

Neuroscience Core Concepts — a guide to the essential principles of neuroscience.

Neuroscience Education Resources Virtual Encycloportal (NERVE) — a Web site with hundreds of lesson plans, games, flash animation movies, and presentations.

Neuromyth Busters — a flyer highlighting the eight most common myths about the brain and the science that dispels them.



Membership and Chapters Committee member Byron Ford (left) presented the second annual Chapter-of-the-Year Award to Evan Stubbs, chapter representative of the Chicago chapter.

ages 8-10, to neuroscience. The children had an opportunity to listen to mini-lectures and practical seminars organized by staff of The Bogomoletz Institute of Physiology. They learned about brain development in evolution from invertebrates to humans, the structure of neuronal cells, the main principles of organization and functioning neuronal networks, and about how the five senses occur. The chapter used schematic, painted illustrations and video animations during the lectures. During the practical seminars, schoolchildren painted neurons and viewed samples of different tissues using a binocular and microscope.

Chicago Chapter: 2010 Chapter-of-the-Year

The Chicago chapter of SfN was recognized with the second annual Chapter-of-the-Year Award at Neuroscience 2010 for their continued success in developing and organizing chapter initiatives and activities. The award was presented to chapter representative Evan Stubbs at the 2010 Chapters Workshop. Following the presentation, Stubbs spoke about organizing chapter events, symposia development and speaker recruitment, and education outreach. He stressed the importance of meeting with chapter members regularly and organizing a chapter council to assist with planning activities such as Brain Awareness Week.

As an active BAW participant, the Chicago chapter hosts booths to give both elementary level students and parents a hands-on opportunity to see and learn about animal and human brain anatomy. The Chicago chapter also hosts an

TIPS FOR PLANNING YOUR PUBLIC BAW PROGRAM

- Determine audience to prepare age appropriate activities.
- Consider interactive brain stations with coloring and puzzles, neuron building, brain fitness tips, or hands-on brain anatomy activities to engage elementary students. For high school students, offer to host neuroscience lab tours showing how research is conducted and what careers are in and outside academia.
- Interest the public by organizing lay-language lectures about the brain, brain health, and diseases affecting the brain.
- Budget for activities and plan accordingly. Consider applying for a SfN Chapter Grant, which awards \$500 to \$2,000 to individual chapters for activities such as BAW. Solicit matching funds from local businesses and universities.
- Organize volunteers and decide if you have the necessary staff to run a successful event. Identify volunteers to assist with set-up, promotion, signage, hand-outs and materials, and audio visual needs. Invite graduate students and local neuroscience labs to participate.
- Advertise your BAW activities by developing a media plan and reaching out to local schools. Alert schools about upcoming BAW events and encourage science teachers to make your event a field trip. Consider crafting and disseminating a press release, creating a fact sheet, or hanging posters and flyers throughout the community.

For more Brain Awareness Week planning tips and resources, visit www.sfn.org/baw.

annual brain bee competition for high school students that tests neuroscience knowledge and topics including intelligence, memory, emotion, stress, aging, sleep, and neurological diseases. Widely popular, the Chicago chapter Brain Bee helps to motivate students to learn about the brain, captures their imagination, and inspires them to pursue careers in biomedical brain research. Students are encouraged to use *Brain Facts*, SfN's primer on the brain and nervous system to prepare for the competition. For examples on how to host a Brain Bee competition, visit the Chicago chapter Web site at www.chicagosfn.org or www.sfn.org/baw.

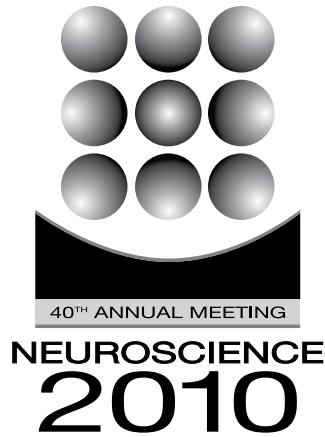
To find a SfN chapter in your local area, browse the interactive online chapter map, which lists chapter locations, contact information, and chapter Web sites at www.sfn.org/chapters. ■

Brain Awareness Week is March 14-20

To find out more about Brain Awareness week, visit www.sfn.org/baw.

Inspiring Speakers, Cutting-Edge Science

12



For the 40th consecutive year, scientists convened for the Society for Neuroscience's annual meeting, this year in San Diego. During the week of November 13-17, the San Diego Convention Center, restaurants, hotels, and the neighboring Gaslamp Quarter teemed with more than 31,500 attendees from all corners of the world who came to the meeting eager to exchange research, network with colleagues, and take advantage of valuable professional development resources.

GLENN CLOSE – BRINGING CHANGE TO MIND

Award-winning actress Glenn Close opened the meeting with a presentation highlighting her family's struggle with mental illness and her personal campaign to "bring change to mind" by seeking to reduce the stigma of mental illness. The presentation began with a humorous and entertaining anecdote that included video clips highlighting Close's acting career. She then launched into a compelling speech outlining her family's personal struggles with mental illness and what her organization, BringChange2Mind.org, is doing to change this — most notably, an Internet and television campaign

designed to spark open conversations in society about mental illness, what it means for millions of people around the world, and what can be done on a regular basis to fight against the stigma. Her sister Jessie Close and her nephew Calen Pick followed her speech with remarks of their own, sharing their stories of what it means to live with a mental illness. The presentation concluded with a question and answer session with the audience and a call to action by the Close family.

REPRESENTATIVE PATRICK KENNEDY'S MOONSHOT

In a special presentation, then Congressman Patrick J. Kennedy (D-RI) delivered an impassioned plea to the neuroscience community for unprecedented research advancements over the course of the next 10 years. Rep. Kennedy identified this ambitious endeavor as a "moonshot," in the spirit of his uncle, President John F. Kennedy, who catalyzed the scientific community in the 1960s in a race to outer space, as part of "The New Frontier." Kennedy petitioned neuroscientists and advocates in the audience to aggressively pursue



During a special presentation, Rep. Patrick Kennedy emphasized the importance of advances in basic research as well as advocacy for science funding to combat today's prevalent neurological disorders.

knowledge of the "inner frontier," the human brain, and to conduct the types of research necessary to determine cures and treatments for the diseases of the brain plaguing millions of people in the United States and beyond.

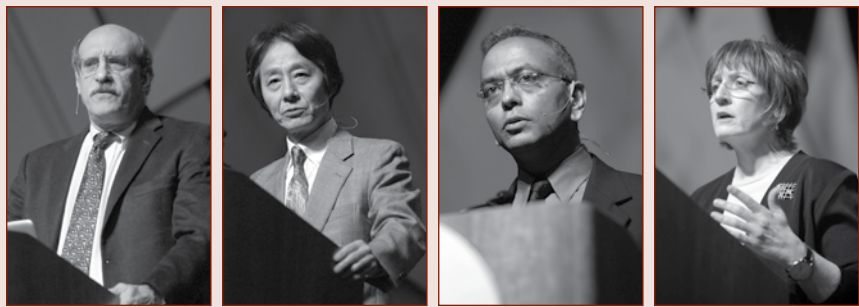
RICH SCIENTIFIC PROGRAM

SfN's Past President Michael E. Goldberg's theme for the annual meeting, "Neuroscience from Molecules to Mind" was highlighted



Actress and advocate Glenn Close inspired the audience to "Bring Change to Mind" about mental illness during the Dialogues Between Neuroscience and Society Lecture. From left to right: Michael E. Goldberg, Tom Insel, Glenn Close, and Jessie Close.

View videos of Glenn Close and Rep. Patrick Kennedy at Neuroscience 2010 at www.sfn.org/amhighlights.



Presidential Special Lecturers presented cutting-edge research developments and advancements to thousands of students, researchers, and physicians at Neuroscience 2010. From left to right: Martin Chalfie, Okihide Hikosaka, Pawan Sinha, and Helen S. Mayberg.

through the Presidential Special Lectures. Martin Chalfie discussed *c. elegans* and explained the critical function of proteins that interact with them as transducers of touch. Okihide Hikosaka discussed how animals use neuronal signals to construct “road maps” that help them make optimal behavioral choices. Pawan Sinha shared the scope of a scientific initiative he recently launched called “Project Prakash,” designed to study visual development and thereby use these research results to provide sight to congenitally blind children. Helen Mayberg explained how advances in neuroimaging have given way to a more anatomically-based understanding of depression. She highlighted a network model involving deep brain stimulation, and presented the foundation of this new procedure and its clinical results from ongoing studies.

Other Featured Lectures included the Fred Kavli Distinguished International Scientist Lecture by Christine Petit; the Peter and Patricia Gruber Lecture by Robert H. Wurtz; the David Kopf Lecture on Neuroethics by Henry Greely; the Albert and Ellen Grass Lecture by Lily Jan and Yuh Nung Jan; and the History of Neuroscience Lecture by Victor Whittaker. In addition to these Featured Lectures and 13 Special Lectures, 46 symposia and

minisymposia revealed cutting-edge research developments, including those in the areas of Alzheimer’s disease, addiction, autism, and new findings about the brain’s mechanics and development.

GROWING PRESS COVERAGE

New research findings were presented to the media in 11 press conferences on a range of topics, including brain-machine interfaces, the vulnerability of adolescent brains, and new methods of detection for Alzheimer’s disease. For the first time, press conferences were webcast live and made available remotely to credentialed reporters.



Martha Caffrey, Northeastern University graduate student, speaks to media during a press conference on the role of oxytocin beyond its status as the “cuddle hormone.” Caffrey’s research suggests that maternal bonds influence brain activity and behavior, particularly for drug-addicted mothers.

Neuroscience 2011 Abstract Submission Opens in April

Nov. 12 – 16, 2011
Washington, DC

Submit an abstract for
a poster session or
nanosymposium.

Opening of Abstract
Submission:

Thursday, April 21

Abstract Submission
Deadline:

Thursday, May 12
5 p.m. EDT

www.sfn.org/am2011

More than 115 reporters from consumer and trade publications attended in person this year, a 53 percent increase over last year.

SfN INTERACTIVE ENHANCES MEETING EXPERIENCE

For the second year, SfN recruited official Neurobloggers to record their personal experiences at the annual meeting. Fourteen Neurobloggers were chosen from the applications received, with at least one individual covering each theme of the meeting. While not the only voices recording the meeting, SfN highlighted these Neurobloggers on the annual meeting Web site, offering an alternative resource for attendees to locate news, events and must-see presentations at the meeting. All members and attendees were encouraged

Continued on page 14...

... Neuroscience 2010, continued from page 13

14

to highlight their experiences while at Neuroscience 2010 online, and many chose to do so, particularly via Twitter. SfN launched the Twitter stream Neurosci2010, and used it as another tool to enhance the annual meeting experience for attendees.

PROFESSIONAL DEVELOPMENT EXPANDS

SfN is committed to neuroscientists at every stage of their career. This year's annual meeting offered an expanded set of training, activities, mentoring events, and other resources to attendees in San Diego.

While mentoring occurred at many levels and venues throughout Neuroscience 2010, nearly 200 attendees sought advice on topics such as work-life balance, securing grants, pursuing non-academic careers, and choosing graduate schools at "Career Development Topics: A Mentoring and Networking Event." This year's new mentoring event format allowed mentees the ability to connect with multiple mentors on a range of topics, and drew young trainees from the neighboring poster sessions who were able to drop in for additional networking and guidance.



The new SfN travel award poster sessions fostered learning and networking among young investigators.

The annual poster sessions highlighting the research of diversity fellows and international fellows were expanded this year to include a new poster session for SfN travel award recipients. The close proximity of the three sessions allowed the several hundred attendees to flow from one session to another, learning, networking, and supporting the work of the featured young investigators.

SfN also offered a new slate of professional development workshops that included topics such as conveying a professional image, tips for navigating the SfN meeting, effective mentoring, and becoming an engaged member of SfN.

SfN's Continuing Commitment — Fostering Professional Development at Every Career Stage

- The **Neurobiology of Disease Workshop (NDW)** and three Short Courses offered full-day training opportunities. In its 30th year, the NDW focused on the neurobiological basis of obesity pathogenesis, drawing 275 participants. View this year's workshop highlights at www.sfn.org/ndw. Roughly 700 attendees registered for three Short Courses to get an



Jill Becker, Carol A. Barnes, and Joanne Berger-Sweeney attended the annual Celebration of Women in Neuroscience Luncheon. Barnes received the Mika Salpeter Lifetime Achievement Award.

in-depth look at topics and techniques in neuroscience research, including "Genes, Photons, and Electrons: New Solutions for Problems in Systems Neuroscience," "Posttranscriptional Regulation in Nervous System Development and Plasticity," and "Analysis and Function of Large-Scale Brain Networks."



John G. Nicholls (right) was presented with the 2010 Award for Education in Neuroscience, which recognizes outstanding contributions to education and training in neuroscience, by CNDP Chair David Riddle (left).

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27	trees
12163	gallons of water
738	pounds of solid waste
2525	pounds of hazardous effluent



The popular *Careers Beyond Academia Workshop*, one of many new workshops in an expanded professional development program, had more than 300 attendees. The workshop detailed multiple career choices in neuroscience, and offered guidance on how to transition into nonprofit, government, industry, and advocacy positions.

- The **Neuroscience Departments and Programs (NDP) Reception** drew more than 80 representatives of SfN's Institutional Program (IP) members who gathered to honor John Nicholls, winner of the Award for Education in Neuroscience. The NDP booth on the exhibit floor allowed IP members to advertise their programs and for students to gather information.
- The **Meet-the-Expert Series** provided young investigators with the opportunity to engage experts and network at one of nine concurrent sessions featuring researchers who described personal techniques and accomplishments. Topics, included the homologies of brain structures across species and using transcription factors to induce cell fate changes.
- The annual **Celebration of Women in Neuroscience Luncheon** featured Barbara Sahakian, who spoke about "Women in Neuroscience: A Holistic Approach to Career Development." This year's event recognized women leaders in neuroscience with award presentations and a slide show, while informal roundtable discussions explored, "What makes a work environment inclusive or not inclusive?"
- Neuroscience 2010 offered 11 **professional development workshops**, including overwhelmingly popular topics such as writing a manuscript as a non-native English speaker, career options outside academia, and securing funding to assist early-career scientists in the transition to independent investigators.
- The **NeuroJobs Career Center** at Neuroscience 2010 attracted more than 1,000 job seekers and 200 employers. Nearly 300 on-site interviews were scheduled, fostering new relationships and opportunities for employers and job seekers alike. ■

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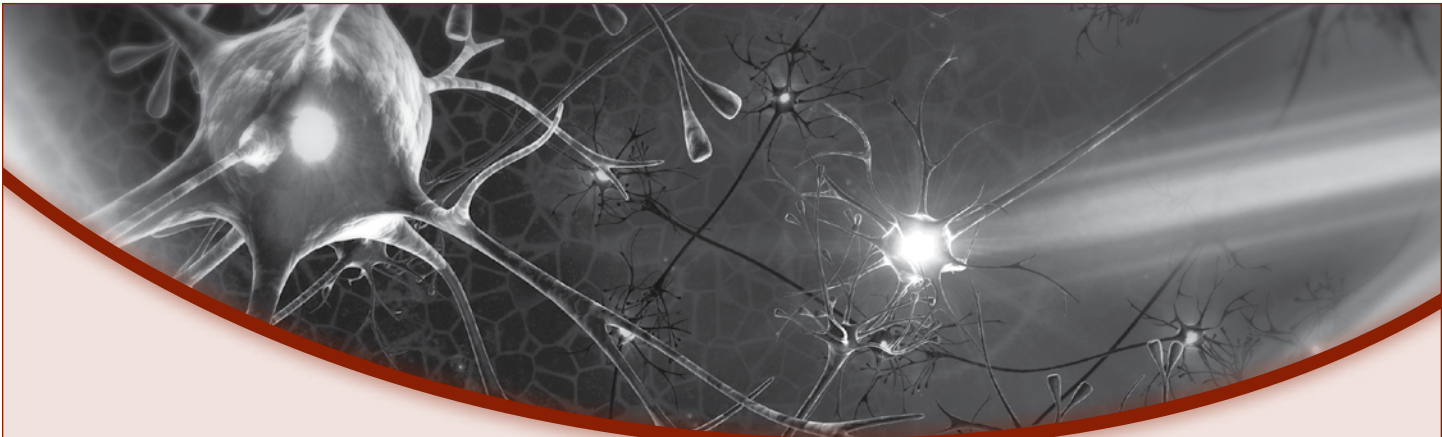
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For Neuroscience 2010 highlights, visit www.sfn.org/amhighlights.



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