

FRIDAY, NOV. 14

Society for Neuroscience Short Course #1

Optical Control of Neural Excitability

7:30 a.m. – 5:30 p.m.

The Optical Control of Neural Excitability short course will examine several technologies for using light to remotely control the activity of neurons. Light-regulated molecular tools can be used to rapidly and specifically excite or inhibit cells in the intact nervous system. The methods include the optical control of membrane excitability, synaptic transmission, and/or the activity of second messenger molecules. Neurons can be experimentally excited or inhibited in complex cellular and temporal patterns, far beyond what is possible with conventional electrophysiological methods.

The speakers include experts in the fabrication of optically activated molecules, the application of caged compounds, as well as developers of novel and exotic light gated molecular switches. The course will also examine genetic approaches for optical control using light-regulated channels and proteins. Collectively the faculty will provide a sophisticated and cutting edge examination of the field from various perspectives, giving students a balanced and comprehensive overview of optical control methods in neuroscience. This daylong course consists of a series of lectures by the faculty, followed by informal breakout sessions, and includes a syllabus book.

Lecturers:

Haig Keshishian, PhD (organizer), *Yale University*; Ehud Y. Isacoff, *University of California, Berkeley*; Joseph P. Y. Kao, PhD, *University of Maryland Biotechnology Institute*; Richard H. Kramer, PhD, *University of California, Berkeley*; Bernardo L. Sabatini, MD, PhD, *Harvard Medical School*; Ernst Bamberg, PhD, *Max Planck Institute of Biophysics*; Phil Haydon, PhD, *Tufts University*; Gero Miesenböck, MD, *University of Oxford*

Society for Neuroscience Short Course #2

Seeing Is Believing: Antibodies and How To Use Them

8 a.m. – 6 p.m.

When using immunocytochemistry, investigators may not know how to select the best method, optimize staining, or troubleshoot the methods when staining fails. Lacking are guides for comparing techniques and applying information derived from one staining method to another. Newer methods that employ tyramine signal amplification or quantum dot technology increase signal detection and allow double labeling even with two antisera generated in the same species. A twist to immunocytochemistry is non-radioactive *in situ* hybridization. An understanding of how immunocytochemistry is best applied facilitates non-radioactive based approaches for *in situ* hybridization analysis. The precision of product generation of antibody visualization even makes certain of the non-isotopic methods quantitative. This workshop provides a practical approach to methods of immunocytochemistry and non-radioactive *in situ* hybridization to appraise the neuroscience community of advances in antibody-based staining techniques. This daylong course consists of a series of lectures by the faculty, followed by informal breakout sessions, and includes a syllabus book.

SHORT COURSE FEES:

(Fee includes breakfast, lunch, and syllabus book)

Student Member	\$90
Student Nonmember	\$120
Postdoctoral Member	\$160
Postdoctoral Nonmember	\$200
Faculty Member	\$205
Faculty Nonmember	\$255

NEUROBIOLOGY OF DISEASE WORKSHOP FEE: . . . \$35
(includes breakfast, lunch, and reception)

PLEASE NOTE: There is no on-site registration for Short Courses and the Neurobiology of Disease Workshop. Registration must be completed online and can be done at the same time as the annual meeting registration. Space is limited. Please visit www.sfn.org/registration.

PROFESSIONAL SKILLS WORKSHOP FEE:

Cost: Day one, \$35 in advance, \$45 at the door (includes meals, coffee breaks, and handouts); Day two, no cost for sessions, lunch available for \$20. Day two handouts and lunch option guaranteed only for individuals who pre-register.

Lecturers:

Gloria Hoffman, PhD (organizer), *University of Maryland School of Medicine*; Eva Mezey, PhD, *National Institutes of Health*; Kevin Roth, MD, PhD, *University of Alabama at Birmingham*; Denis Baskin, PhD, *VA Puget Sound Health Care/University of Washington*

Society for Neuroscience Short Course #3

Neural Signal Processing: Quantitative Analysis of Neural Activity

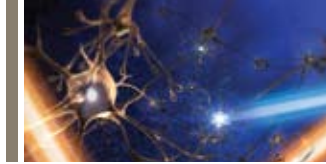
8:30 a.m. – 6:30 p.m.

The dynamical patterns of electrical activity of neurons provide a crucial bridge between cellular and psychological/behavioral levels of analysis in neuroscience. Over the last decade or so, a significant amount of research has gone into the development of signal processing tools to quantify neuronal dynamics. These methods have been applied to a wide variety of neural signals, including EEG/MEG and single electrode recordings, as well as more contemporary multielectrode recordings or imaging techniques. These quantitative methods have now reached a certain level of maturity, indicated by common measures and signal processing algorithms used in research papers, shared analysis software (such as Chronux), and pedagogical material in courses. Apart from bridging cellular and systems levels of analysis, these methods also provide a critical link between experimental data and theoretical models.

This short course will provide a survey of topics from this field, including methods for analyzing point process signals (spike trains) and continuous process signals (LFP, EEG, behavioral recordings). Nonparametric smoothing and spectral estimation techniques will be complemented by parametric stochastic process models.

KEY

📅 Pre-Registration Required \$ Course Fee 📖 Professional Development 🤝 Networking 🗣️ Public Outreach



Pedagogical lectures in the morning will be followed by tutorial exercises which the participants can carry out on their own laptop computers using data sets and analysis software which will be provided. This daylong course consists of a series of lectures by the faculty, followed by informal breakout sessions, and includes a syllabus book.

Lecturers:

Partha Mitra, PhD (organizer), *Cold Spring Harbor Laboratory*; Hemant Bokil, PhD; *Cold Spring Harbor Laboratory*; Uri Eden, PhD, *Boston University*; Robert Kass, PhD, *Carnegie Mellon University*; David Kleinfeld, PhD, *University of California, San Diego*; Bijan Pesaran, PhD, *New York University*; Sridevi Sarma, PhD, *Massachusetts Institute of Technology*; Andrew Sornborger, PhD, *University of Georgia*; Keith Purpura, PhD, *Weill Cornell Medical College*; Ofer Tchernichovski, PhD, *City College of New York*

Neurobiology of Disease Workshop 📅 \$ 📖

The Neurobiology of Traumatic Brain Injury

8 a.m. – 5 p.m.

Traumatic brain injury (TBI) is a major public health issue with more than 1.4 million people in the U.S. sustaining civilian brain injuries each year, including 50,000 who die from their injuries and 235,000 who are hospitalized. In addition, many other individuals sustain more “mild” injuries, such as concussions. Furthermore, TBI is one of the two signature injuries sustained by soldiers in the Gulf Wars. TBI can occur in many forms, including concussions, contu-

injuries. The effects of traumatic brain injury may be immediate, progressive well after the initial trauma, or may appear at a time significantly later than the injury itself. These effects may include cognitive, behavioral, motor, sensory, and language dysfunction, and may also be manifest as epileptic events. This workshop will focus on the mechanisms underlying different forms of TBI, and the mechanisms underlying progressive lesions developing after TBI, acute and subacute neuroprotective strategies for TBI, mechanisms of endogenous brain repair after injury, and other forms of neurorehabilitation strategies, including brain stimulation and cell transplantation. The morning lectures will start with a description of the problem and the presentation of a patient who has survived TBI. They will proceed to focus on neurobiological issues important in TBI research. The afternoon breakout workshops will focus on specific research approaches to the problem of TBI and will permit close interactions between selected research faculty and participants in the workshop.

A reception at the close of the day affords students and faculty the opportunity to interact and explore remaining questions informally.

Target audience: graduate, postdoctoral students, and assistant professors.

Registration is limited.

Morning Lecturers:

Michael Yochelson, MD, *National Rehabilitation Hospital*; Kathryn E. Saatman, PhD, *University of Kentucky*; Pat Kochanek, MD, *University of Pittsburgh*; Ross Zafonte, DO, *Harvard Medical School*; Randolph Nudo, PhD, *University of Kansas*; Steve Flanagan, MD, *New York University School of Medicine*

Afternoon Discussion Group Leaders:

Ron Hayes, PhD, *Banyan Biomarkers, Inc*; Pat Kochanek, MD, *University of Pittsburgh*; Alvaro Pascual-Leone, MD, PhD, *Beth Israel Deaconess Medical Center*; Leonardo Cohen, MD, *NIH*; Doug Smith, MD, *University of Pennsylvania*; Kathy Saatman, PhD, *University of Kentucky*; Marc Dichter, MD, PhD (*co-organizer*), *University of Pennsylvania*; Raimondo D'Ambrosio, PhD, *University of Washington*; CE (Ed) Dixon, PhD, *University of Pittsburgh*; Ross Bullock, MD, PhD, *University of Miami*; Mickey Selzer, MD, PhD (*co-organizer*), *DVA and University of Pennsylvania*; Mary Bunge, PhD, *University of Miami*; Jeff Maklis, MD, *DHST, Harvard University*; Deborah Watson, PhD, *University of Pennsylvania*; Ibolja Cernak, MD, ME, PhD, *Johns Hopkins University*

Professional Skills Workshop 📅 \$ 📖

9 a.m. – 8:30 p.m.

These workshops will provide participants with instruction in a range of professional skills that are necessary for a successful career. Days one and two are designed to be independent of each other, thus participants may choose to attend either or both days. Different sessions will address the specific needs of faculty, postdoctoral students, graduate students, and undergraduates.

Day 1 will assist participants in career development. Sessions will focus on selecting careers, finding and maintaining employment, getting into graduate school, picking the right postdoctoral position, and how to succeed as a new faculty member at a primarily undergraduate institution. The process of looking for a job will be detailed, including information on networking and developing an effective “package” (i.e., CV or resume, cover letter, statement of interests). Individuals from colleges, industry, publishing, and research administration will participate in a panel discussion of

NeuroJobs



SfN NeuroJobs Career Center

Walter E. Washington
Convention Center

Friday, Nov. 14
2 – 5 p.m.

Saturday, Nov. 15
9 a.m. – 5 p.m.

Sunday, Nov. 16 – Tuesday, Nov. 18
8 a.m. – 5 p.m.

Wednesday, Nov. 19
8 a.m. – 3 p.m.



Annual meeting attendees and exhibitors will have the opportunity to access job listings and schedule interviews at the on-site career center. Visit www.neurojobs.sfn.org for more details.

PLEASE NOTE: SfN members may post their resumes and view job listings for free. To become an SfN member before Neuroscience 2008, applications must be received by the SfN membership office no later than Friday, Oct. 12. Please visit www.sfn.org/joinnow to apply online.



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Resource!”

www.neurojobs.sfn.org



career options. Panelists will then join participants in a networking reception designed to facilitate further discussion, which will be followed by dinner and a keynote address.

Day 2 will provide extensive information on grant writing. NIH and NSF program officers will discuss specific funding opportunities and general tips for successful grant-writing, and the Survival Skills and Ethics Program will provide strategies for writing a strong proposal and avoiding common pitfalls. Lunchtime will provide an opportunity for participants to talk informally with program officers from NIH and NSF. At that time you can get answers to your general or personal questions related to obtaining funding.

The complete workshop schedule and registration forms are available online (www.survival.pitt.edu), or by contacting the Survival Skills and Ethics Program at survival@pitt.edu or (412) 578-3716.

SATURDAY, NOV. 15

Discover FP7: EU Funding Opportunities in Brain Research

9 a.m. – noon

You know that the EU is giving out some money for research but do not know where to look? Then this workshop should definitely be on your agenda. FP7, the 7th EU Framework programme for Research and Development (FP7), provides funding opportunities for scientists of all nationalities and at all stages of career development. You do not know which types of funding are available, or which better suits your needs? Come and listen to us! You will get a detailed overview of different types of EU funding: collaborative grants, individual grants, and post-doctoral fellowships. Talks will be tailored specifically to the needs of the neuroscience community. Our speakers come from a scientific background and will take your questions. You'll also hear first-hand information on the review process, and tips to navigate the complexity of EU grant writing. Come and discuss with European Commission staff working in the area of "Brain and related diseases," and Marie Curie Actions. Meet Oscar Marin, member of the ERC Scientific Council and successful neuroscientist. You still want more? Come visit the European Commission booth featuring relevant publications, and program officers available for extended conversation.

Professional Skills Workshop

9 a.m. – 1 p.m.

See page 17 for course description.

Meet-the-Expert Series

9 – 10:30 a.m.

In a series of six concurrent sessions, experts will describe their research techniques and accomplishments in a personal context that offers participants a behind-the-scenes look at factors influencing the expert's work. Each 90-minute session offers an opportunity for students and postdoctoral researchers to engage the expert in an informal dialogue over breakfast. No registration is required, but seating is limited.

Theme A Expert: Marla Feller, PhD, *University of California-Berkeley*
Monitoring the Assembly of Neural Circuits Using Synaptic Physiology and Imaging

Theme B Expert: Tom Blanpied, PhD, *University of Maryland*
Smaller, Faster, Longer, Deeper: Cellular Imaging in the Translational Era

Theme C Expert: John Cirrito, PhD, *Washington University in St. Louis*
Simultaneously Measuring Neuronal Activity and Extracellular Peptides *In Vivo*

Theme D Expert: Karl Deisseroth, MD, PhD, *Stanford University*
Optogenetics: Development, Techniques, and Application

Theme E Expert: Margaret McCarthy, PhD, *University of Maryland*
Exploring the "Neuro" in Behavioral Neuroendocrinology

Theme F Expert: Randy L Buckner, PhD, *Harvard University*
Imaging the Mind – Where We Are, Where We Need To Go

Dance Classes for People with Parkinson's Disease

10 – 11:30 a.m.

In this event, dancer David Leventhal of the Mark Morris Dance Group will join Mark Morris to describe the experience of teaching customized dance workshops for individuals with Parkinson's disease and their caregivers. A video presentation is included. Registration must be processed at the time of annual meeting registration.

Brain Awareness: The Next Generation

Annual Brain Awareness Campaign Event

3 – 4:30 p.m.

Organized by the Society for Neuroscience in collaboration with the Dana Alliance for Brain Initiatives

This annual event brings together new and experienced advocates who work to improve public knowledge about the brain and the progress of brain research. The future of the Brain Awareness campaign will be examined as we approach its 15th anniversary. Speakers will include SfN President-Elect Tom Carew.

A networking reception and poster session highlighting recent Brain Awareness events and ideas will follow the short formal program. Attendees will have the opportunity to share experiences and insights about all types of neuroscience education programs. Contact Corinne Dreskin at corinne@sfn.org to present a poster at this event.

SUNDAY, NOV. 16

Teaching Neuroscience for Long-Term Learning

9 a.m. – noon

When we think about teaching, many of us think first about presentation, what we will say and do as teachers. But we also need to think about learning, what our students will absorb and how we can help them be more effective. This year's teaching workshop focuses on structuring neuroscience courses to promote deep learning. It begins with a video about a physics course that changed its approach from "telling" to "asking," with students working in class to solidify concepts (Eric Mazur, Harvard). This will be followed by a panel describing ways of fostering active learning in neuroscience courses: organizing a graduate core course for long-term retention (Karen Gale, Georgetown), holding video conferences with researchers (Michael Barresi, Smith), using blogs to encourage writing (Christina Williams, Duke), creating a wiki for student-authored lecture notes (Richard Olivo, Smith), and finally, using and misusing PowerPoint (Ron Hoy, Cornell). The session will end with breakout groups and informal conversations among faculty teaching similar courses.

The workshop is open to graduate students, postdocs, and faculty at every level of teaching experience. There is no fee or preregistration. Visit www.fas.harvard.edu/~bok_cen/sfn for details.

KEY

 Pre-Registration Required  Course Fee  Professional Development  Networking  Public Outreach



Global Chapter Invigoration: Bringing Neuroscience Outreach to the Public

Noon – 1:30 p.m.

This workshop will provide participants with information on how to form and maintain an SfN chapter, and how to develop successful educational outreach activities. Formation and activities of chapters based outside North America will be given special emphasis this year.

The chair of the Membership & Chapters Committee will give a brief presentation on funding opportunities and answer questions from workshop participants. Experts on science outreach at the local chapter level will then make presentations and lead small group discussions on specific themes, including:

- Educational/Public Outreach Activities
- Brain Awareness Week
- International Chapters

Participants will also have an opportunity to interact with fellow chapter representatives, share success stories, and discuss concerns with SfN leadership. Lunch will be provided. Registration is required to attend this event. To register, please contact the Chapters Coordinator at chapters@sfn.org.

Social Issues Roundtable

Global Neuroscience – Neuroethics and the Burden of Nervous System Disorders

1 – 3 p.m.

Despite meteoric progress in neuroscience research, disparities in neurological health and research capacity remain, particularly in low and middle income countries. This imbalance raises the question of how to encourage neuroscience research and collaboration that benefits the developing world. Many of the new translational approaches involve access to expensive technology, with profound ethical implications. Distinguished panelists will discuss what is known about the diseases and disorders that most contribute to the burden of nervous system dysfunction around the world and identify ways to implement neuroethics in a global context.

MONDAY, NOV. 17

Animals in Research Workshop

Engaging Your Institutions To Protect Researchers and Research

9 – 11 a.m.

With 90 illegal attacks against researchers in 2007, institutions need to improve protections to help ensure safe and secure environments for research. At this workshop, university administration, communications officers, and security professionals will discuss with participants ways SfN members can engage their institutions to prepare for animal extremist activity, building on SfN's *Best Practices for Protecting Researchers and Research*. Separate registration is required for this free workshop. Breakfast will be provided.

Careers for Neuroscientists

9 a.m. – noon

This workshop will be devoted to a discussion of the challenges and opportunities for a variety of career paths — within and outside academia. Capitalizing on the different perspectives and expertise of distinguished neuroscientists, we will discuss the advantages and disadvantages of working in a non academic setting and the training and skills required for such positions. The workshop will also address transitioning between jobs and job sectors, and will allow the attendees to network with colleagues and speakers at breakfast. Registration is not required.

TUESDAY, NOV. 18

Time Management Workshop: Combining Family and Neuroscience

9 – 11 a.m.

The issue of combining family and career responsibilities is on the forefront of many scientists' minds. This workshop aims to provide a forum for exchange of ideas on managing family and career for men and women in neuroscience. To achieve this aim, a group of neuroscientists at various stages of their careers and in various work situations (including junior and senior positions, academics and alternative careers, and administration) will present the options that they have utilized or are provided at their institutions in order to successfully navigate the line between scientist and parent/spouse. The format of this workshop will be a brief presentation by a platform of four to five speakers on the topic of combining family and career responsibilities, followed by questions and answers and break-out groups.

"A Celebration of Women in Neuroscience" Luncheon

Noon – 2 p.m.

The Committee on Women in Neuroscience (C-WIN) will host its third annual "A Celebration of Women in Neuroscience" luncheon. The luncheon will feature SfN Past President Huda Akil and honor women leaders in the neurosciences with a special slide show. Table discussions will explore the horizon for generations of women and men to come, and review new directions and priorities for C-WIN. Space is limited. Registration is required. To attend the luncheon, please visit www.sfn.org/cwinrsvp to register in July.

Public Advocacy Forum

The Elections: And the Winner Is...Science?

3 – 5 p.m.

On the heels of a significant U.S. election, join renowned science policy and political experts to discuss U.S. presidential and congressional election results and the potential impact on science funding and policy. With U.S. science funding at a standstill, this forum will highlight the prospects for improving support for the research enterprise and help SfN members learn how to help shape the future of science funding and advocacy.

SfN Members' Business Meeting

6:30 – 7:30 p.m.

Join the SfN leadership to discuss matters of SfN business.

Graduate Student and Postdoctoral Fellow Reception

9 p.m. – midnight

A reception will be held for graduate students and postdoctoral fellows. No invitation required.