Message From the President

Dear Stereotactic and Functional Neurosurgery Community,

It is a privilege to address you as your new president and my distinct honor to take the reins from our friend, colleague and past-president Emad Eskandar, MD, FAANS, in leading this robust and vibrant Society for the next two years. Dr. Eskandar’s leadership and that of the previous Board of Directors and Executive Council, including our most recent past-president and biennial meeting chairperson, Aviva Abosch, MD, PhD, FAANS, is responsible for handing the new leadership a Society in outstanding shape. We are able and ready to continue our mission and leading role in advocating for the issues pertinent to the surgeons, affiliated physicians, scientists and, most importantly, the patients that we treat with stereotactic and/or functional neurosurgical procedures. We assume leadership with a deep sense of the responsibility we carry in our roles and will work hard to fulfill it over the next several years.

I would like to extend a word of thanks to our departing EC and Board members. Dr. Abosch leaves the leadership having fulfilled her roles as past-president and meeting chairperson, and what a spectacular meeting she put together. It was unanimously regarded as the most successful meeting to date, with both the highest attendance ever – 597 people, including 363 medical registrants (surgeons, neurologists, psychiatrists, scientists, engineers and others) and 234 exhibitors, from 18 countries. The meeting was also thought to have the most exciting and relevant scientific program yet (thanks to Nader Pouratian, MD, PhD, FAANS, chair of the Scientific Program Committee, and members Sameer Sheth, MD, PhD, FAANS; Jennifer Sweet, MD, FAANS; Clement Hamani, MD; Mark Richardson, MD, PhD, FAANS; and Christin Welle, PhD). Ron Alterman, MD, decided to leave the leadership after doing a great job as secretary/treasurer for the last two years. Dr. Hamani and Pete Konrad, MD, PhD, FAANS, leave the Board of Directors after tirelessly serving for the last eight years in various leading roles, such as on the Guidelines and Washington Committees, respectively. Finally, both Andre Machado, MD, PhD, and Joe Neimat, MD, MSc, FAANS, leave the Board as they have been elected to leadership positions, as secretary/treasurer and vice-president, respectively.

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Via our first electronic election (spearheaded by Dr. Hamani), the new Executive Council was elected, as was the new Board. Alon Mogilner, MD, PhD, FAANS, and Jorge Gonzalez-Martinez, MD, PhD, FAANS, were elected to second terms (four years). Drs. Sweet and Richardson as well as Ellen Air, MD, PhD, FAANS, were elected to new terms on the Board. Finally, with a change in the Society bylaws just ratified, the Board decided to increase the number of board members by two. Including the need to replace Dr. Neimat’s board position as he assumed the vice-presidency, the Board appointed Jason Schwalb, MD, FAANS; Jim McInerney, MD, FAANS; and Guy McKhann, MD, FAANS, to two-year terms on the Board; these positions will be filled by election at the next biennial meeting. We welcome all our new and returning faces, all chosen because of their dedication to our Society and its mission. Each member is the leader or co-leader of one of our standing or ad-hoc committees.

We all begin our terms with great enthusiasm and excitement! That combined with the remarkable talent and passion of each member of the leadership will lead to a very productive two years, and new initiatives are already underway to do what we do even better. For example, our Society is in the best financial shape ever, due in large part to our recent successful meetings. We take the stewardship of these resources very seriously in the service of our mission. Towards that end, we will be developing a strategy for supporting research and training of our Society members, including residents and fellows. We have begun to work more closely with the NREF in this effort. *I encourage our members to support these efforts by contributing to the Roy Bakay Honor Your Mentor Fund, established in honor of the late and beloved pioneer in functional neurosurgery. We need to get that fund to $50,000 in order to use it, or we have to roll it over to another fund. It would be a shame if we lost this opportunity to memorialize Roy’s memory in something that he was so passionate about – research in functional neurosurgery. Each and every one of our EC and Board members have themselves contributed to the fund, demonstrating their commitment to it and their leadership in this area. Another initiative in this vein is a new Mentoring Program for junior faculty starting out in functional neurosurgery, initiated and spearheaded by Dr. Machado and Julie Pilitsis, MD, PhD, FAANS. You will be hearing about our progress in these and other areas throughout the next few years.*

In closing, I wish to convey my thanks again to our recent leaders, who have fulfilled their roles in exemplary fashion over many years, our new leaders just beginning what will be years of dedicated service and our vibrant and passionate membership that has given us the mantle to serve on their behalf. I encourage each and every one of you to become even more involved in our Society and remind you that you don’t need to be elected to serve. Reach out to any of us with your desire and your ideas, and we will find a way to engage you in service to our membership. I look forward to helping to direct this Society for the next two years and I, along with the other leaders, hope to fulfill the trust given to us.

Robert E. Gross, MD, PhD, FAANS
Editor’s Note

Welcome to the fall 2018 edition of Stereotactic and Functional Neurosurgery News. Our biannual newsletter has been handed over to me smoothly by our most recent editor, Sameer Sheth, MD, PhD, FAANS. In this issue, Robert Gross, MD, PhD, FAANS, provides his first Message from the President, while Past-President and 2018 Biennial Meeting Chair Aviva Abosch, MD, PhD, FAANS, summarizes our immensely successful recent Biennial Meeting in Denver. Charles Mikell, MD, continues as News and Views contributor, while Pranav Nanda, MD, again outlines the stereotactic and functional sessions for the upcoming national meeting, in this case the CNS meeting in Houston. We also have a welcome to next summer’s WSSFN meeting in New York from President Michael Schulder, MD, FAANS.

As editor, I would like to encourage our membership, particularly our younger members, to volunteer to help with the ASSFN newsletter. There are many ways that we could expand it to take on challenging issues in academic neurosurgery, highlight clinical developments and further discuss and promote many aspects of our exciting and rapidly changing field. As an example, our use of intracranial electrodes to not only provide clinical care, but also to promote research into human brain function is an area that we should explore further. How much are we as a field taking responsibility for standards of safety and informed consent? What is the best mechanism to do so?

I hope to try and expand this newsletter in whatever ways we as a community desire. I am open to suggestions, in terms of format or specific topics, that any of our members think would be of interest to our society. Feel free to email your thoughts or ideas to gm317@cumc.columbia.edu.

Guy McKhann, MD, FAANS

The ASSFN in association with The University of Colorado Department of Neurosurgery, presents:

Stereotactic and Functional Neurosurgery Hands-on Workshop
November 9-11, 2018
Center for Surgical Innovation
Aurora, Colorado
ASSFN Biennial Meeting Report

The 2018 Biennial Meeting of the American Society of Stereotactic and Functional Neurosurgery was held in Denver, with 597 attendees — making this our largest meeting to date. Included in this total are 363 medical registrants and 234 exhibitors, with 18 countries represented. Pre-meeting courses were very popular and included “Building a Functional Neurosurgery Research Lab,” “Optimizing Finances, Value, and Efficiency in our Practices” and “Integrating Technology into Practice.” Plenary Sessions featured updates on the activities of our European and Asian partner societies, the NIH BRAIN and SPARC Initiatives and various neuroscience research projects sponsored by DARPA. Also featured were Plenary Sessions devoted to the field of Neuro-Ethics and updates on the fields of brain imaging, epilepsy, movement disorders, pain and psychosurgery. Our Poster Session with Wine and Cheese was once again chaired by Zelma Kiss, MD, PhD, and was extremely well attended. As always, the Poster Session allowed for active, informal discussions for trainees to engage with leaders in the field and for networking. The Honored Guest of the Meeting was Philip Starr, MD, PhD, FAANS, and the Keynote Speaker was Bryan Johnson, CEO, of Kernel.

Onsite society membership applications were dramatically higher than in previous years — a testament to the level of attendee engagement at the meeting.

Finally, the new leadership of the ASSFN was announced: ASSFN President Robert Gross, MD, PhD, FAANS (Emory University); Vice President Joseph Neimat, MD, MSc, FAANS (University of Louisville); Secretary/Treasurer Andre Machado, MD, PhD (Cleveland Clinic); and Past-President and Meeting Chair for 2020 Emad Eskandar, MD, FAANS (Einstein University).

We look forward to seeing you in Boston for the 2020 ASSFN Biennial Meeting!

Aviva Abosch, MD, PhD, FAANS
ASSFN Past-President and 2018 Meeting Chair

Highlights from the 2018 ASSFN Biennial Meeting in Denver

ASSFN Past-President and 2018 Meeting Chair Dr. Aviva Abosch leads the discussion with Keynote Speaker Bryan Johnson, founder of Kernel

ASSFN President Dr. Emad Eskandar presents his Presidential Address
Highlights from the 2018 ASSFN Biennial Meeting in Denver

Honored Guest Dr. Philip A. Starr delivering the Honored Guest Luncheon presentation

Dr. Al Emondi of DARPA highlights their development of Next Generation Non-Surgical Neurotechnology (N3)

Dr. David McMullen of NIMH discusses the goals of the BRAIN Initiative for mental health

Meeting Chair Dr. Abosch and Local Arrangements Chair Dr. Steven Ojemann enjoy the meeting camaraderie with Drs. George Ojemann and Stephan Chabardes
Highlights from the 2018 ASSFN Biennial Meeting in Denver

New ASSFN President Dr. Robert Gross stimulating the meeting discussion

Coffee breaks and poster sessions once again provided robust opportunities for academic dialogue

Drs. Nitin Tandon and Edward Chang moderate session on the BRAIN Initiative

Dr. Jim Gnadt of NINDS outlines the opportunities in human device development under the BRAIN Initiative
Chronic Pain

- The Washington Committee for Neurosurgery and the AANS/CNS Section on Pain has been working with Congress and officials from the Trump administration to directly address the national opioid crisis. Efforts include the crafting of meaningful reforms that limit opioids available for diversion, while avoiding undue burdens on patients in need of analgesia (such as stable chronic pain patients, trauma patients and postoperative patients) and improving access to evidence-based, opioid-sparing therapies such as spine surgery, neuroablative therapies and neuromodulation procedures.

- Chronic pain patients treated with spinal cord stimulation are more likely to return to work. A meta-analysis of more than 800 patients in nine studies showed that SCS doubles the likelihood that a patient will work, relative to their pre-surgical baseline (Moens, 2018).

Movement Disorders

- Medicare now covers Magnetic Resonance-guided Focused Ultrasound (MRgFUS) in 22 states. Prior to Medicare coverage, many patients were left to pay out of pocket. Many private insurers still consider the treatment experimental, though the national Blue Cross/Blue Shield Association has recommended that the treatment be covered. Given the recent positive coverage determinations, many payors are likely to reconsider their positions.

- DBS may improve the natural history of rest tremor. Despite a trend towards earlier implantation, evidence that DBS is “neuroprotective” or affects PD progression is scarce. In a pilot sample of 28 patients randomized early in their course to DBS or medical therapy, rest tremor was worse at all measured timepoints in the medical therapy group, up to a final follow-up of 24 months, despite a seven-day stimulation washout period (Hacker, 2018). Importantly, rest tremor did not usually spread to unaffected limbs in the DBS group.

- A Norwegian group reported the first randomized trial of single versus multichannel microelectrode recording for DBS (Bjerknes, 2018). The authors randomized 60 patients to single-pass (with additional passes as needed) or five-electrode per side MER. The five-electrode group had a higher reduction in the UPDRS-III, but the group had a higher UPDRS to begin with, despite randomization. However, 50 percent of five-channel MER patients and 35 percent of single-channel patients had an “excellent” outcome. Cognitive outcomes were similar.

Epilepsy

- Medtronic received FDA clearance for anterior nucleus of the thalamus DBS. CMS has not yet approved payment, however.

- Open surgery was superior to radiosurgery for treatment of temporal lobe epilepsy in the multicenter Radiosurgery or Open Surgery for Epilepsy (ROSE) trial (Barbaro, 2018). The funding source stopped recruitment after 58 patients because of slow accrual. Of the patients that were treated, 78 percent of the temporal lobectomy patients and 52 percent of radiosurgery patients achieved seizure remission. Adverse events were similar between groups.

- New antiepileptic drugs have not changed seizure-freedom rates. Despite 30 years of development of new agents, two-thirds of patients will respond to the first medicine tried, a smaller fraction will respond to the second and only a few percent respond to additional trials (Chen, 2018). A team including Kwan and Brodie...
(2001) from the original, landmark New England Journal paper published their seizure freedom rates from 1982 to the present, and not much has changed since the original publication. It is still possible to identify refractory epilepsy, and therefore surgical candidates, within a year or two of diagnosis (i.e., after the patient has failed two regimens).

- A recent PET study identified increases in bifrontal glucose metabolism after temporal lobectomy (Güvenç, 2018). There was no clear correlation to neuropsychological performance, however.

New Directions

- Centers for Medicare and Medicaid Services (CMS) is considering paying for VNS for depression. In the wake of new long-term follow-up data that depressed patients with VNS have some benefit (Aaronson, 2017), CMS has posted a National Coverage Analysis (NCA) on its website for public comment. A decision is expected in November.

References


The old geezers reading this ASSFN newsletter may remember a time when the meetings of the ASSFN took place every four years, and the leadership changed accordingly. That was left over from a time when you could fit the whole membership around a boardroom table. In 2003, the society leadership (led by Doug Kondziolka, MD, FAANS, and Rees Cosgrove, MD, FRCSC, FAANS) changed that timetable to a biannual one, reflecting the increasing interest and pace of change in stereotactic and functional neurosurgery. All ASSFN members have benefited from this over the last 15 years.

Similar change has come to the World SSFN. We have been on a quadrennial schedule for decades. Beginning in 2006, the society held several “interim” meetings every other year. Now there is no denying the growth of our society (tenfold, over the last six years, thanks especially to the work of Takaomi Taira, MD, PhD, and Joachim Krauss, MD, PhD, IFAANS). The energy and enthusiasm on display at our steadily enlarging meetings have been striking. Therefore, in 2019 we will have our next full WSSFN meeting, two years after the previous event, and make our own move to a biannual schedule.

WSSFN 2019 will take place from June 24-27 in the heart of Manhattan, at the Hilton Midtown Hotel – a great venue for this event. The meeting, exhibit and social spaces are terrific at the Hilton, although we acknowledge the challenge of keeping everyone from exploring New York at the best time of year! To that end, our scientific program committee, led by Joseph Neimat, MD, MSc, FAANS, has shaken up the format and the topics so that you will find new material and some surprising guest speakers. Keep your eyes open for the preliminary program, which will be posted online soon at wssfn.org.

As always, the meeting depends on the scientific content. The abstract site is open, so send your best, newest and craziest ideas for WSSFN 2019 and come to New York City for a great time in late June!

Michael Schulder, MD, FAANS
President, WSSFN
8:00-11:30 am
**PC06 Update on Movement Disorders: Case based review of approaches and controversies**  
**Course Directors:** Ellen L. Air, Francisco A. Ponce  
**Faculty:** Ron L. Alterman, Kim J. Burchiel, Alexandre N. Francisco, Casey H. Halpern, Clement Hamani, Peter Konrad, Ashwin Viswanathan  
**Course Description:** The course will utilize a case-based approach to understanding the latest emerging and alternative approaches to performing deep brain stimulation surgery to maximize outcomes and patient comfort.  
**Learning Objectives:** Upon completion of this course, participants will be able to:  
- Explain the difference in outcomes for each target used for deep brain stimulation and identify the appropriate target for each individual case.  
- Review drawbacks, limitations, and advantages of awake versus “asleep” deep brain stimulation iSF implantation  
- Describe the role of MR guided focused ultrasound in the management of movement disorders

8:00-11:30 am
**PC21 Neurosurgical Treatment of Chronic Headache**  
**Course Directors:** Jason M. Schwalb  
**Faculty:** Mark Burish, Cormac O. Maher, Sean J. Nagel, Wouter I. Schievink, Konstantin V. Slavin  
**Course Description:** This course will focus on the decision-making of neurosurgeons confronting patients with chronic headaches. Using case-based discisions, the faculty will discuss identification of patients who are likely to do well with neurosurgical intervention and those who are not. Evidence-based medical and surgical options will be discussed for each condition.  
**Learning Objectives:** Upon completion of this course, participants will be able to:  
- Discuss appropriate workup and non-neurosurgical management of different causes chronic headache.  
- Develop patient selection tools to improve neurosurgical outcomes and apply tools to their practices.  
- Review current evidence-based treatment of chronic headaches.

8:00-11:30 am
**PC22 Review of Functional Neurosurgery for the Non-specialist**  
**Course Directors:** Sharona Ben-Haim, Jennifer A. Sweet  
**Faculty:** Ellen L. Air, Vanessa M. Holanda, Paul A. House, Roy S. Hwang, Andrew Machado, Charles B. Mikell, Nader Pouratian  
**Course Description:** The course will review anatomy relevant to functional neurosurgery and outline how to incorporate functional procedures into non-functional neurosurgery practices.  
**Learning Objectives:** Upon completion of this course, participants will be able to:  
- Describe functional neuroanatomy of the brain and its relationship to key procedures in functional neurosurgery, including neuromodulation and neuroablation  
- List common disorders that can be effectively treated or cured by functional neurosurgery procedures.  
- Outline which functional neurosurgery procedures can be performed in a practice not exclusively devoted to functional neurosurgery and how this capacity can be developed.
12:15-1:45 pm
**M09 Key Clinical Trials in Epilepsy Surgery**  
**Course Directors:** Aviva Abosch, Timothy H. Lucas  
**Faculty:** Jorge A. Gonzalez-Martinez, Robert E. Gross, Nitin Tandon  
**Learning objectives:** Upon completion of this course, participants will be able to:  
- Identify key trials and levels of evidence for resective epilepsy surgery.  
- Describe relative advantages and evidence supporting neuromodulation procedures, including VNS, DBS, and RNS.  
- Discuss evidence regarding seizure freedom and neurocognitive effects of laser ablation.

2:45-4:15 pm  
**Section on Pain**  
**Moderators:** Ahmed M.T. Raslan, Ashwin Viswanathan  
**Speakers:** Barbara Evans, Emily L. Levin, Erika A. Petersen  
**New Paradigms in Neuromodulation with Downloadable Data**  
**Learning Objectives:** Upon completion of this session, attendees will be able to:  
- Analyze the findings of novel neurosurgical studies; critique the design and methodology of these studies.  
- List important areas for further knowledge development and research.  
- Identify the most important ongoing clinical trials.  
- Identify new technology in neuromodulation.  
- Address ethical concerns of downloadable data.  
- Determine how to integrate downloadable data into one’s practice.

4:15-6:15 pm  
**Case-Based Discussion: The Changing Face of Epilepsy Surgery**  
**Course Directors:** Jorge A. Gonzalez-Martinez, Guy M. McKhann  
**Discussants:** Arthur Cukiert, Marc Guenot, Bhaskara Rao Malla, Nitin Tandon  
**Learning objectives:** Upon completion of this course, participants will be able to:  
- Detail the indications and outcomes of resective surgery for epilepsy.  
- Delineate when neuromodulation is a preferred approach over resective surgery and the outcomes of these interventions.  
- Describe differences in outcomes for open versus MR-guided laser ablation for epilepsy.
T18 SCS: Evidence and Applications
Moderator: Erika A. Petersen
Faculty: Ellen L. Air, Francisco A. Ponce, Alexander S. Taghva
Learning Objectives: Upon completion of this seminar, participants will be able to:
- Discuss patient selection factors for SCS trial
- Review changes in SCS technology.
- Explain surgical management and decision making in SCS placement.
- Outline strategies for management of complications associated with SCS.

Section on Pain
Moderator: Sean J. Nagel
Faculty: Scott Lempka, Jason M. Schwab
The Science of Chronic Pain: Neuroimaging, Neurophysiology, and Measuring Response to Treatment with Neurmodulation
Learning Objectives: Upon completion of this seminar, participants will be able to:
- Analyze the findings of novel neurological studies; critique the design and methodology of these studies.
- List important areas for further knowledge development and research.
- Identify the most important ongoing clinical trials.
- Describe how neuroimaging could be used the future to guide treatment.
- Explain how spinal cord stimulation relieves pain from a neurophysiologic perspective.
- Incorporate new outcome measures for pain into practice.

Case-Based Discussion: STN Versus GPI: Key Clinical Trials
Moderator: Jonathan Miller, Erika A. Petersen
Faculty: Roy L. Alterman, Darlene A. Mayo
Learning Objectives: Upon completion of this seminar, participants will be able to:
- Describe the anatomic location and neurophysiological connections of each target
- Outline advantages and limitations of each target
- Compare findings from key trials directly comparing STN to GPI DBS

Section on Stereotactic and Functional Neurosurgery
Moderators: Joseph S. Neimat, Sameer A. Sheth
Speakers: Aviva Abosch, Brian H. Kopell, Joseph S. Neimat, Sameer A. Sheth
Psychiatric Disorders as Network Disorders
Learning Objectives: Upon completion of this session, attendees will be able to:
- Analyze the findings of novel neurosurgical studies; critique the design and methodology of these studies.
- List important areas for further knowledge development and research.
- Identify the most important ongoing clinical trials.
- Explain current theories about functional networks that underlie human psychology and how pathology within these networks lead to psychiatric disorders.
- Describe recent advances in the neuromodulatory management of psychiatric conditions.
- Utilize the latest evidence in psychiatric neurosurgery to optimize patients with medically refractory psychiatric disease.

DIN4: Emerging Indications for Functional Neurosurgery: Tourette, OCD, Depression, and Pain
Moderators: Alon Y. Mogilner, Sameer A. Sheth
Faculty: Alessandra A. Gorgulho, Casey H. Halpern
Learning Objectives: Upon completion of this course, participants will be able to:
- Describe and employ reported outcomes in DBS for Tourette’s disease.
- Critically appraise the evidence for DBS for OCD.
- Assess and apply the evidence for DBS for depression and chronic pain to management of patients with medically refractory disease.
18TH MEETING OF THE WORLD SOCIETY FOR STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

WSSFN

HILTON MIDTOWN NEW YORK CITY

JUNE 24-27 2019

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