

Stereotactic and Functional NEUROSURGERY NEWS



Spring 2016

AANS/CNS Section on Stereotactic and Functional Neurosurgery and American Society for Stereotactic and Functional Neurosurgery

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MD, PhD

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Message from the President



Aviva Abosch, MD, PhD, FAANS

As my tenure as president of the American Society of Stereotactic and Functional Neurosurgery (ASSFN) draws to a close, it is with fondness, a sense of accomplishment and a bit of awe, that I

reflect back on my six years of service to our society and the changes that have occurred over this period. My emotions are rooted in the strong position we now enjoy both as a financially sound organization, with strong ongoing leadership, and as a reflection of the increasing global recognition of the therapeutic promise of neuromodulation.

The 2016 Biennial Meeting of the ASSFN will begin shortly, in Chicago, and is packed with presentations, panel discussions and posters that specifically address the therapeutic promise of our field. Thanks to the efforts of the team led by ASSFN past president Konstantin V. Slavin, MD, FAANS; local meeting host, Joshua M. Rosenow, MD, FAANS; and Scientific Program co-chairs, Peter E. Konrad, MD, PhD, FAANS, and Brian H. Kopell, MD, FAANS, the scientific program is truly exciting. Highlights include honored guest, Kim J. Burchiel, MD, FAANS, a novel pre-meeting workshop organized by Joseph S. Neimat, MD, MSc, FAANS, on clinical trials in psychiatric neurosurgery and the first-ever, faculty-guided walking tour of scientific posters, being organized by Zelma Kiss, MD, PhD. The meeting will conclude on Tuesday with the ASSFN awards ceremony. Importantly, elections for new ASSFN officers and members of the Executive Council will take place during the business meeting, Monday, June 20, from 5:10-6 p.m. Please plan to attend, and be on the lookout for ballot information, as your participation is crucial for the ongoing strength of our organization.

Members of the ASSFN Executive Council continue to work on behalf of our members, our patients and our discipline internationally,

nationally, regionally and locally. These efforts have included input to organized neurosurgery on the topic of enfolded and post-graduate subspecialty fellowship training; providing educational and scientific content for the national neurosurgery meetings, webinars and hands-on training courses; analyses of the cost-effectiveness of neuromodulatory devices such as RNS; guideline formulation for stereotactic and functional neurosurgery procedures; and engagement with partner societies, such as American Academy of Neurology (AAN), and with industry on clinical trials formulation.

On the topic of training, the ASSFN will hold its 4th Annual Hands-on Training Course in Stereotactic and Functional Neurosurgery on November 4-6, at the University of Colorado. This course is sponsored jointly by the ASSFN, the Neurosurgical Research and Education Fund (NREF) and the AANS. Industry sponsorship for last year's course was significant, enabling us to offer the course free for residents, and we hope to do the same for 2016. Fellows and neurosurgeons interested in brushing up on skills or obtaining hands-on experience with novel technologies are also encouraged to attend.

Please look for the donation link in your ASSFN membership dues form, and consider a gift to our Society. Another way to contribute is through the Dr. Roy Bakay Honor-Your-Mentor Fund, which will be directed to research in Stereotactic and Functional Neurosurgery. **Donations can be made at the following address:** <http://www.nref.org/donate.aspx>. Such gifts directly translate into our ability to sponsor trainees at our biennial meeting, to fund research pilot projects and to engage in advocacy efforts on behalf of our patients and our discipline.

Finally, I thank you – the members of ASSFN – for your continued support of our society and wish you safe travels to Chicago.

With gratitude,
Aviva Abosch, MD, PhD, FAANS
*President, American Society of Stereotactic and
Functional Neurosurgery*



WSSFN 2015: Overview

Last year, India hosted the interim meeting of the World Society for Stereotactic and Functional Neurosurgery (WSSFN) in September. The theme of the meeting was “Attend-Learn-Apply” with the primary aim being to stimulate the interest in functional neurosurgery. It was a four-day meeting with a mix of 12 focused workshops (half-day each), guest lectures and lunch symposia. The meeting was attended by around 100 faculty and 400 delegates from 40 different countries. The strong scientific content was responsible for anchoring and engaging the delegates throughout the meeting.

India is known for its hospitality, and this meeting was no different. There were three days of engaging social programs displaying local culture and cuisine. One of the most appreciated events was the “Drum Café evening” in which audience participation included beating their own drums! (see photo)

I would like to express my special thanks to the WSSFN core team for taking a keen interest and offering strong support and guidance to make this event a grand success.

Paresh K Doshi, MD
Organizing chairman, WSSFN 2015
Jaslok Hospital and Research Center
Mumbai, India

WSSFN 2015: Epilepsy

The epilepsy section at the Mumbai World Society for Stereotactic and Functional Neurosurgery (WSSFN) was attended by several leaders in the field and by a wide array of practitioners. The Thursday morning workshop laid the framework with a review of the process of evaluation for candidacy for epilepsy surgery followed by a series of talks on the standard surgical approaches for intractable epilepsy. Thereafter, the meeting focused principally on innovations in the field. Principal in this was the focus on newer

incarnation of stereo-electro-encephalography (unconventional, azimuth based and reliant on frameless 3-D navigation systems for planning) an approach that might be better referred to as neo-SEEG.

The overall theme of minimally invasive evaluation and intervention for epilepsy was prevalent throughout the program – the use of robots and customized patient specific frames for placements of electrodes or probes in the brain; a specific purpose of such probes is to deliver thermal energy using laser fibers coupled with concurrent thermal imaging in an MRI scanner to destroy epileptogenic tissue. This MRI guided laser interstitial thermal imaging technique is gaining popularity as a minimally invasive approach to address focal pharmaco-resistant epilepsy as evidenced by several presentations on this theme. Other intriguing and provocative presentations included concurrent ictal recordings from the thalamus and the scalp, endoscopic approaches for hemispherotomy and amygdalo-hippocampectomy and newer approaches to neuromodulation for epilepsy.

Nitin Tandon, MD, FAANS
University of Texas, Houston
Houston, Texas

WSSFN 2015: Pain

Pain neurosurgery was extensively covered at the 2015 World Society for Stereotactic and Functional Neurosurgery (WSSFN) Annual Meeting in Mumbai, India. A pre-meeting workshop devoted entirely to neurosurgical treatment of chronic pain was offered on Friday, Sept. 4. The session covered a wide range of topics, including basic science of cerebral processes underlying the experience of pain and a variety of treatment strategies. A variety of interventions were discussed, including neurolytic blocks, epidural injections, radiofrequency ablation and neuromodulation using spinal cord and peripheral nerve stimulation. Special emphasis was given to craniofacial pain with a lengthy discussion of diagnosis and management of headaches and facial pain. The session ended with a series of challenging case discussions. During the meeting itself, two talks at the plenary session addressed neuromodulation approaches and evolution of functional neurosurgery. Finally, pain neurosurgery accounted for 18 of the 83 posters presented; the topics of these posters were evenly distributed between neurostimulation and neural lesioning procedures. Overall, the program gave participants excellent exposure to the state of the art of pain neurosurgery.

Jonathan P. Miller, MD, FAANS
University Hospitals Case Medical Center
Cleveland, Ohio

continued on page 3

WSSFN 2015: Movement Disorders

The first two days of the quadrennial meeting were dedicated to workshops oriented towards education. Thursday offered workshops beginning with foundations of stereotaxis and stereotactic frames, which was simultaneous to the lesional surgery workshop co-moderated by Takaomi Taira, MD, PhD. This workshop spanned radiofrequency thalamotomy to evolving lesioning methods such as guided ultrasound and laser ablation. On Friday, Marc Sindou, MD, DSc, and Patrick Mertens, MD, co-moderated a series of excellent afternoon talks on the management of spasticity. This was hosted in tandem with the intra-operative physiology workshop, which began with an in-depth tour of microelectrode recording by Bill Hutchison, MD, that touched upon insights gleaned from intraoperative recording in movement disorders surgery and concluded with hands-on demonstration for attendees.

The scientific sessions began on Saturday with parallel gatherings. The morning began with challenging deep brain stimulation (DBS) cases presented by Ludvic Zrinzo, MD, FRCS, and Peter Richard Schuurman, MD, PhD. Oral abstracts followed the presidential address, and an abstract demonstrating the utility of white matter tractography in planning for thalamic (DBS) was awarded to Vibhor Krishna, MD, whose work was completed under the guidance of Mojgan Hodaie, MD, FAANS, at the University of Toronto. The three-minute flash abstracts were followed with Andres M. Lozano, MD, PhD, FAANS, FRCS(C), FRSC, with remarks on the future of neuromodulation. As Sunday brought the quadrennial meeting to a close with the Indian Society of Stereotactic and Functional Neurosurgery conference, it offered a reminder of the importance of continuing to share expertise and promote the role of movement disorders surgery.

Anand I. Rughani, MD, FAANS
Maine Medical Center
Scarborough, Maine

WSSFN 2015: Psychiatric Neurosurgery

The 2015 World Society for Stereotactic and Functional Neurosurgery (WSSFN) meeting featured a range of topics on psychiatric neurosurgery. One of the plenary sessions focused on a discussion regarding the relative merits of stimulation vs. lesion therapy for psychiatric disorders. There is no “one size fits all” answer to this question, as both types of therapy have their advantages and disadvantages. When considering societal norms, public opinion, cost differences, regulatory considerations and several other factors, it seems quite clear that both stimulation and lesion therapy will exist side-by-side in the field of psychiatric neurosurgery.

In addition to the plenary discussion, several investigators presented their experience in the form of short talks in focused session meetings. Basic studies in pre-clinical rodent models included deep brain stimulation (DBS) of the medial forebrain bundle to treat depression as well as a model of Tourette Syndrome. Treatment studies in humans included DBS of the STN and bed nucleus of the stria terminalis for obsessive compulsive disorder (OCD), as well as stereotactic radiosurgical capsulotomy for OCD. Also presented were VNS, capsulotomy and a modified limbic leucotomy for depression and posterior hypothalamic DBS for aggressive behavior.

Sameer A. Sheth, MD, PhD
Columbia University
New York City

CNS 2015 Annual Meeting Stereotactic and Functional Section Award

Doris Wang, MD, PhD, received the Stereotactic and Functional Section Award at the 2015 CNS Annual Meeting from Aviva Abosch, MD, PhD, FAANS. Dr. Wang is a fifth-year neurosurgical resident at the University of California, San Francisco. Her project, entitled “Comparison of GPi local field potential characteristics in patients with Parkinson’s disease and dystonia,” studied local field potentials recorded intraoperatively from the globus pallidus internus in patients with Parkinson’s disease and dystonia. This work was completed under the supervision of Philip Starr, MD, PhD, FAANS at UCSF. The group found similarities between Parkinson’s and dystonia in physiological markers such as spectral power and phase amplitude coupling, suggesting similar mechanisms of abnormal neural network activity and synchronization between the disorders.



Establishment of an International Registry on Lesion Neurosurgery for Psychiatric Disorders

Despite several decades of international clinical practice, the quality of evidence to support stereotactic ablative neurosurgery for psychiatric disorders remains limited; randomized controlled trials are rare and very difficult to perform. Well reported case-series are small in number, and numbers of participants and 'expert' opinion is often the only clinical guide.

Globally, psychiatry, surgery, medicine, psychology and neuroscience communities, the media and the lay public tend to believe lesion surgery for psychiatric disorders is not only an outdated treatment approach but also ineffective and harmful. Sporadic, small-scale case series (n<20) from single centers are unlikely to influence significantly wider opinion and practice. In this context, it is very difficult for individual centers to provide reassurance that they are achieving favorable outcomes and to inform patient choice and consent for surgery.

The World Society for Stereotactic and Functional Neurosurgery (WSSFN) Committee for Psychiatric Neurosurgery has approved a proposal to establish an international registry for stereotactic lesion procedures. The registry seeks to launch an international collaborative for the collection of an anonymized, pooled, clinical and neuroimaging dataset from patients receiving stereotactic ablative neurosurgery as a treatment for mood disorders, obsessive-compulsive disorder, and – potentially – other disorders for which neurosurgery for mental disorders (NMD) has been applied (e.g. some forms of anxiety disorders, addictions).

The potential benefits of such a registry include careful prospective audit of clinical outcomes, generations of clinical effectiveness data, comparison of outcomes between procedures, disorders and centers, detailed investigation of the relationships between lesion characteristics (e.g. location and volume) and outcome measures and the first steps towards a more substantive, detailed, collaborative international research program.

The registry will only include anonymized individual-level patient data and will be hosted, on behalf of WSSFN, by the University of Dundee (Scotland, U.K) Health Informatics Centre under the direction of Keith Matthews, MD, PhD (Professor of Psychiatry, University of Dundee).

The planned inception date for the registry is Aug. 1, 2016, and the project will work to identify and collect suitable data for 12 months in the first instance. To express interest in collaboration and for full project details, please contact Dr. Matthews [k.matthews@dundee.ac.uk] or Sameer Sheth, MD, PhD, at Columbia University in New York [ss4451@columbia.edu].

Keith Matthews, MD, PhD, Professor of Psychiatry/Hon. Consultant Psychiatrist

ASSFN Officers and Executive Council

ASSFN Leadership

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Aviva Abosch, MD, PhD, FAANS

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Parag G. Patil, MD, PhD, FAANS (2012-
2016)

Julie G. Pilitsis, MD, PhD, FAANS (2012-
2016)

Additional Key Society Information

Official Society Journal

Stereotactic and Functional Neurosurgery

David W. Roberts, MD, FAANS,
Editor

Society Historian

Philip L. Gildenberg, MD, PhD,
FAANS(L)

Society Administrator

Melody Dian
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Society website

www.assfn.org

MEETING AGENDA

SATURDAY, JUNE 18, 2016

PRE-MEETING COURSES

8:00 am–5:00 pm

Special Course 1

Functional Neurosurgery Essentials for Residents: Didactics, Simulations, and Hands on Practicum

Residents/Fellows \$150
 ASSFN Members/Non-member Physicians \$295

Course Director: Robert E. Gross

Faculty: Jeff Arle, Steven Falowski, Paul House, George Mandybur, Steve Ojemann, Andrew Parrent, Francisco Ponce, Jennifer Sweet, Niton Tandon, Ashwin Vishwanathan

Learning Objectives: Upon completion of this course, participants will be able to:

- ▷ Describe, plan, and increase skills for implantation of deep brain stimulators for movement disorders.
- ▷ Discuss role, principles and anatomical approaches to epilepsy surgery.
- ▷ Review methods and increase skills for spinal cord stimulation.
- ▷ Describe role and principles of lesions for pain disorders.

Topics to be covered during the course:

- ▷ Deep Brain Stimulation for Parkinson's disease, Dystonia, and Tremor
- ▷ Principles and Practice of Epilepsy Surgery
- ▷ Spinal cord stimulation: From Trial to Implant
- ▷ Intrathecal Pumps for Pain and Spasticity
- ▷ Lesions for Pain Disorders

1:00–5:00 pm

Special Course 2

DBS: Primer for Midlevel Providers

Residents/Fellows/NPs/PAs \$150

Course Director: Jason M. Schwalb,

Ritesh Ramdhani

Course Description: Deep Brain Stimulation (DBS) has emerged as a viable and safe therapeutic option for a variety of neurological disorders that have become refractory to pharmacological treatment. This course will provide nurse practitioners and physician assistants with an understanding of clinical and surgical aspects of DBS for the treatment of Parkinson's Disease, Essential Tremor, and Dystonia. The presentations will also provide information on patient selection and programming approaches, as well as troubleshooting strategies.

Audience: This course is intended for nurse practitioners and physician assistants who want to be more involved with evaluating and/or programming movement disorders patients treated with Deep Brain Stimulation.

Learning Objectives: Upon completion of this course, participants will be able to:

- ▷ Review the patient selection criteria of DBS for Parkinson's Disease, Essential Tremor, and Dystonia.

- ▷ Provide insights into the various neural targets implanted with DBS and their role and clinical benefit for each condition.
- ▷ Discuss programming approaches for each condition and brain target, including electrical parameters, medication adjustments, and response time frame.
- ▷ Provide an overview of the stereotactic surgical implantation of DBS, technical considerations (i.e., IPGs, leads), and troubleshooting hardware complications.

1:00–2:00 pm

DBS for Parkinson's Disease

Ritesh A. Ramdhani

2:00–2:10 pm

Break

2:10–2:40 pm

DBS for Tremor

Michael Rezak

2:40–3:10 pm

DBS for Dystonia

Christos Sidiropoulos

3:10–3:20 pm

Break

3:20–4:05 pm

Surgical Procedure

Jason M. Schwalb

4:05–4:35 pm

Coding and Reimbursement for Midlevels

Cyndy Novak

4:35–5:00 pm

Questions and Discussion

1:00–5:00 pm

Special Course 3

The Economics of Functional Neurosurgery

Residents/Fellows \$150
 ASSFN Members/Non-member Physicians \$295

Course Director: Joshua M. Rosenow

Faculty: Darlene Lobel, Marie Mindeman, Alon Mogilner, Katie Orrico, Julie Pilitsis, Ann Stroink

Learning Objectives: Upon completion of this course, participants will be able to:

- ▷ Discuss how physicians and hospitals are reimbursed for functional neurosurgery procedures.
- ▷ Review the process of creating CPT codes and their RVU values.
- ▷ Identify the role of physician advocacy in neurosurgery.

Topics to be covered during the course:

- ▷ Coding/reimbursement for DBS surgery
- ▷ Coding/reimbursement for Pain surgery
- ▷ Coding/reimbursement for epilepsy surgery
- ▷ Development process for CPT codes and RVU values
- ▷ Avenues for neurosurgeons to become involved in socioeconomic aspects of practice
- ▷ Washington Committee update

SUNDAY, JUNE 19, 2016

7:00–8:00 am

BREAKFAST SEMINAR 1

\$55

Ethical Issues in Neurosurgery

Moderator: Andres M. Lozano

Speakers: Edward F. Chang, Daniel Curry, Phil Kennedy, Michael Schulder

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Describe the current state of psychiatric neurosurgery.
- ▷ Use scientific evidence in choosing proper management approach to rare clinical conditions.
- ▷ Discuss ethical principles applicable to current functional neurosurgical interventions.

Neurosurgical Self Experimentation

Phil Kennedy

Research Ethics in Intracranial Neuroscience

Edward F. Chang

Psychosurgery Revisited: A Historical Reappraisal

Michael Schulder

How to Choose the Right Intervention? The Case of Hypothalamic Hamartomas

Daniel Curry

8:00–9:30 am

PLENARY SESSION 1

ASSFN 2015—State of Affairs

Moderators: Brian H. Kopell, Peter Konrad

Speakers: Kenneth A. Follett, James L. Stone, Emad N. Eskandar, Konstantin V. Slavin, Aviva Abosch

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Review the history of stereotactic and functional neurosurgery and its impact on neurosurgery today.
- ▷ Discuss the importance of pain as a disease in America.
- ▷ Identify current shortcomings and future needs for pain management in America.

8:00–8:10 am

Welcome and Opening Address

Konstantin V. Slavin

8:10–8:30 am

Chicago's History of Functional and Stereotactic Neurosurgery

James L. Stone

8:30–9:00 am

Relieving Pain in America—IOM Follow-Up

Kenneth A. Follett

9:00–9:05 am

Introduction of ASSFN President

Emad N. Eskandar

MONDAY, JUNE 20, 2016

7:00–8:00 am

BREAKFAST SEMINAR 2 \$55 **Incorporating Pain Therapies in Your Practice**

Moderator: Donald M. Whiting

Speakers: Nicholas M. Boulis, William S. Rosenberg, Steven M. Falowski

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Apply pain management strategies to the functional neurosurgery practice.

8:00–9:50 am

PARALLEL SESSION 1 **Neuroimaging: Pain and Psychiatry**

Moderator: Mojgan Hodaie, Sepehr Sani

Speakers: Apkar V. Apkarian, Helen S. Mayberg

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Review the pathological anatomy and imaging of nociception in the insula of primates.
- ▷ Learn the value of neuroimaging and its ability to control for placebo effect in clinical studies.
- ▷ Discuss the variance of anatomy as measured by diffusion tensor imaging and its impact on clinical outcomes.

8:00–8:20 am

The Role of Insula in Pain Modulation Apkar V. Apkarian

8:20–8:40 am

Neuroimaging of Placebo Effect Michael V. Knopp

8:40–9:00 am

How DTI Can Influence Outcomes of DBS for Depression Helen S. Mayberg

9:00–9:40 am

Open Papers

9:40–9:50 am

Questions and Discussion

8:00–9:50 am

PARALLEL SESSION 2 **Movement Disorders 2**

Moderators: Clement Hamani, Paul Larson

Speakers: Ron L. Alterman, D. Luke Fischer, Michael Gordon Kaplitt

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Formulate alternative strategies for the treatment of dystonia outside of neuromodulation of the globus pallidus internus.
- ▷ Discuss recent genetic strategies and their success or failure in the treatment of brain disorders.
- ▷ Identify the role of high frequency

9:05–9:30 am

Presidential Address Aviva Abosch

9:30–10:00 am

Morning Session Break

10:00–12:00 pm

PLENARY SESSION 2

Movement Disorders 1

Moderators: Robert E. Gross, Andre Machado

Speakers: Joshua Rosenow, Philip A. Starr

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Describe the concept of connectomes in the brain and its implication for functional neurosurgery.
- ▷ Discuss the value of DBS versus best medical therapy in the treatment of movement disorders.
- ▷ Provide examples of where closed loop therapy is and will be used in DBS therapy.

10:00–10:20 am

Connectivity of the Brain: Implications for Our Specialty Philip A. Starr

10:20–10:40 am

Is DBS Cost-effective vs. BMT in 2016? Joshua Rosenow

10:40–11:00 am

Closed Loop Feedback in DBS: Where the Opportunities Exist

11:00–11:45 am

Open Papers

11:45–12:00 pm

Discussion and Questions

 12:00–1:00 pm
Non-CME Sponsored Lunch

1:00–2:50 pm

PLENARY SESSION 3

Psychiatric Disease

Moderators: Emad N. Eskandar,

Joseph Samir Neimat

Speakers: Wayne Goodman, Brian Kopell, Ali R. Rezai

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Explain the physiological relationship of the habenula to major depression and where therapeutic options may exist.
- ▷ Provide examples as to where neuromodulation has challenges in treating major depression.
- ▷ Review the role of transcranial magnetic stimulation in treating psychiatric disorders and what its relationship is to other forms of surgical neuromodulation.

1:00–1:20 pm

Habenula: Its Role in Psychobiology of Depression Wayne Goodman

1:20–1:40 pm

Failures in Psychiatric Neuromodulation: Where Do We Go From Here? Ali R. Rezai

1:40–2:00 pm

TMS and Psychiatric Conditions: From the Diagnostic to the Therapeutic Brian Kopell

2:00–2:40 pm

Open Papers

2:40–2:50 pm

Discussion and Questions

 2:50–3:10 pm

Beverage Break with Exhibitors

3:10–5:00 pm

PLENARY SESSION 4

Epilepsy

Moderators: Jorge Gonzalez-Martinez,

Nitin Tandon

Speakers: Ashwini Dayal Sharan, Edward F. Chang, Gordon H. Baltuch

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Describe the clinical evidence for neuromodulation of the anterior thalamus (AN) in the treatment of epilepsy.
- ▷ Review the impact that responsive neurostimulation has had on refractory epilepsy one year after its FDA approval.
- ▷ Discuss what laser ablation techniques have to offer in the treatment of epilepsy.

3:10–3:30 pm

SANTE: The Evidence of Thalamic Modulation Gordon H. Baltuch

3:30–3:50 pm

Neuropace: Postmarket Clinical Experience Edward F. Chang

3:50–4:10 pm

Laser Ablation: Updates on Outcomes Ashwini Dayal Sharan

4:10–4:50 pm

Open Papers

4:50–5:00 pm

Discussion and Questions

6:00–8:00 pm

OPENING RECEPTION WITH EXHIBITORS Renaissance Ballroom InterContinental Hotel

stimulation of the subthalamic nucleus and the upregulation of growth factors in the brain of animals and its clinical impact.

8:00–8:20 am

When GPI DBS Fails for Dystonia: What Else?

Ron L. Alterman

8:20–8:40 am

Genetic Modulation: Update 2016

Michael Gordon Kaplitt

8:40–9:00 am

STN DBS Upregulates Growth Factor in the Brain

D. Luke Fischer

9:00–9:40 am

Open Papers

9:40–9:50 am

Questions and Discussion



9:50–10:10 am

Beverage Break with Exhibitors

10:10–12:00 pm

PARALLEL SESSION 3

Neuroimaging (Movement Disorders)

Moderators: Kathryn L. Holloway, Alon Y. Mogilner

Speakers: David Eidelberg, Kendall H. Lee, Rafael O'Halloran

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Discuss recent discoveries in biomarkers for Parkinson's disease.
- ▷ Discuss the value of tractography on tremor targeting for DBS.
- ▷ Identify the value of neuropharmaceutical microimaging in movement disorders and psychiatric disease.

10:10–10:30 am

Biomarkers for PD: Update

David Eidelberg

10:30–10:50 am

Connectivity and Its Value in DBS for Tremor

Rafael O'Halloran

10:50–11:10 am

Microimaging in Movement Disorders: At the Neuron Level

Kendall H. Lee

11:10–11:50 am

Open Papers

11:50 am–12:00 pm

Discussion and Questions

10:10–12:00 pm

PARALLEL SESSION 4

The Art of Lesion

Moderators: Rees Cosgrove, Parag G. Patil

Speakers: David W. Roberts, Robert Plunkett,

W. Jeffrey Elias, Joseph Samir Neimat

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Discuss the history and value of radiofrequency lesioning in functional neurosurgery.
- ▷ Discuss the history and value of laser ablation lesioning in functional neurosurgery.
- ▷ Discuss the history and value of focused ultrasound lesioning in functional neurosurgery.
- ▷ Discuss the history and value of radiation-based lesioning in functional neurosurgery.

10:10–10:30 am

RF Lesioning

David W. Roberts

10:30–10:50 am

MR-guided Laser Ablation

Joseph Samir Neimat

10:50–11:10 am

High Intensity Focused Ultrasound

W. Jeffrey Elias

11:10–11:30 am

Radiosurgical Ablation

Robert Plunkett

11:30–11:50 am

Panel Discussion

David W. Roberts, Robert Plunkett, W. Jeffrey Elias, Joseph Samir Neimat

11:50 am–12:00 pm

Discussion and Questions



12:00–1:00 pm

Lunch and Honored Guest Talk

Speaker: Kim J. Burchiel

1:00–2:50 pm

PLENARY SESSION 5

Pain 1

Moderators: Julie G. Pilitis, Ashwin Viswanathan

Speakers: Giancarlo Barolat, Robert M. Levy, Mary M. Heinricher, Erich O. Richter, Manoel Jacobsen Almeida de Oliveira Teixeira

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Review the history and value of neurosurgical treatment of pain.
- ▷ Discuss the key anatomical landmarks for neurosurgical management of pain in the spinal cord.
- ▷ Discuss the recent advances in neuromodulation for pain regarding stimulation parameters and locations.
- ▷ Identify when spinal lesioning procedures should still be thought of in pain management.
- ▷ Describe when peripheral nerve interventions should be considered for pain management.

1:00–1:20 pm

Why Neurosurgeons Should be Interested in Pain

Giancarlo Barolat

1:20–1:40 pm

The Anatomy of Pain in the Spinal Cord

Mary M. Heinricher

1:40–2:00 pm

What's New in Spinal Neuromodulation: HF10, Burst, DRG

Robert M. Levy

2:00–2:20 pm

Spinal Lesioning Procedures that Still Work for Pain

Manoel Jacobsen Almeida de Oliveira Teixeira

2:20–2:40 pm

Peripheral Nerve Surgery for Pain

Erich O. Richter

2:40–2:50 pm

Panel Discussion

Giancarlo Barolat, Robert M. Levy, Mary M. Heinricher, Erich O. Richter, Manoel Jacobsen Almeida de Oliveira Teixeira



2:50–3:10 pm

Beverage Break with Exhibitors

3:10–5:10 pm

Poster Session with Wine & Cheese

Moderator: Zelma HT Kiss

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Provide examples of recent research in functional neurosurgery that expands our understanding, therapy, or technology of neurological diseases treated by functional neurosurgery.

5:10–5:30 pm

ASSFN Business Meeting

Presiding Officer: Aviva Abosch

TUESDAY, JUNE 21, 2016

7:00–8:00 am

BREAKFAST SEMINAR 3

Peripheral Nerve Stimulation for Non-traditional Indications (Everything other than pain, epilepsy, and depression)

Speakers: Daniel H. Kim, Daniel Rodenstein

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Describe a spectrum of conditions treated with peripheral nerve stimulation outside of traditional neurosurgical applications.
- ▷ Discuss the current use of peripheral nerve stimulation for motor disorders such as diaphragmatic palsy and sleep apnea.
- ▷ Review indications for use of peripheral nerve stimulation for genitourinary and gastrointestinal disorders.

MEETING AGENDA

8:00–9:50 am

PARALLEL SESSION 5 Technology in Functional Neurosurgery 1

Moderators: David W. Roberts, Christopher Honey

Speakers: Jorge Gonzalez-Martinez, Phil Kennedy, Eric C. Leuthardt, Lee E. Miller

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Provide examples of where brain machine interface technology has been applied in clinical trials.
- ▷ Describe the opportunity of technological advancement and innovation in functional neurosurgery.
- ▷ List examples of how robotic technology can be applied to functional neurosurgery.

8:00–8:40 am

Implantation of the Intact Human Speech Cortex

Phil Kennedy

8:40–9:00 am

Neuroprosthetics: Clinical Experience in Large Cortical Arrays

Lee E. Miller

9:00–9:20 am

Tech Transfer for the Innovative Neurosurgeon

Eric C. Leuthardt

9:20–9:40 am

Robotics

Jorge Gonzalez-Martinez

9:40–9:50 am

Discussion and Questions

8:00–9:50 am

PARALLEL SESSION 6 Radiosurgery and Neuro-Oncology

Moderators: Michael Schulder, Antonio DeSalles

Speakers: Costas Hadjipanayis, Douglas Kondziolka, Shivanand P. Lad

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ List examples of laser ablation uses in tumor surgery.
- ▷ Discuss the cost benefit of radiosurgery in the treatment of trigeminal neuralgia.
- ▷ Provide examples when radiosurgery is indicated for movement disorders.

8:00–8:20 am

LITT: Its Use in Tumor Ablation

Costas Hadjipanayis

8:20–8:40 am

Radiosurgery for TGN: Is it Cost Effective Anymore?

Shivanand P. Lad

8:40–9:00 am

When is Radiosurgery Indicated for Movement Disorders?

Douglas Kondziolka

9:00–9:40 am

Open Papers

9:40–9:50 am

Discussion and Questions



9:50–10:10 am
Beverage Break with Exhibitors

10:10 am–12:00 pm

PARALLEL SESSION 7 Technology in Functional Neurosurgery 2

Moderators: William S. Anderson, Francisco Ponce

Speakers: Emad N. Eskandar, Warren Grill, Satinderpall Pannu, Daniel Graupe

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Describe the DARPA SUBNETS program and its potential research gains for functional neurosurgery.
- ▷ Review how microengineering discoveries are providing engineering solutions for feedback control of neural implants.

10:10–10:30 am

DARPA SUBNETS: What Are We Learning?

Emad N. Eskandar

10:30–11:15 am

Next Generation of Feedback Control for Implants

10:30–10:45 am

Warren Grill

10:45–11:00 am

Satinderpall Pannu

11:00–11:15 am

Daniel Graupe

11:15–11:50 am

Open Papers

11:50–12:00 pm

Discussion and Questions

10:10 am–12:00 pm

PARALLEL SESSION 8 Epilepsy 2

Moderators: Joshua M. Rosenow, Peter C. Warnke

Speakers: Brian Litt, Edward F. Chang, Jonathan Miller

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ Discuss the advantages and disadvantages of open versus closed selective amygdalo-hippocampectomies for the treatment of mesial temporal epilepsy.
- ▷ List the reasons why to use stereencephalography for the diagnosis of focal epilepsy.
- ▷ Describe why epilepsy is generating large data analysis opportunities.

10:10–10:30 am

Selective Amygdalo-hippocampectomy:

Open vs. Lesion

Edward F. Chang

10:30–10:50 am

SEEG vs. Grids: How to Choose?

Jonathan Miller

10:50–11:10 am

Management of Large Data Sets for Epilepsy

Brian Litt

11:10–11:50 am

Open Papers

11:50–12:00 pm

Discussion and Questions



12:00–1:00 pm
Non-CME Sponsored Lunch

1:00–3:00 pm

PLENARY SESSION 6 Pain 2

Moderators: Nicholas M. Barbaro, Erika A. Petersen

Speakers: Kim J. Burchiel, Kenneth A. Follett, Andre Machado, Ahmed M. Raslan, Konstantin V. Slavin, Byung Chul Son

Learning Objectives: Upon completion of this session, participants will be able to:

- ▷ List alternatives to systemic opioids in the management of pain.
- ▷ Discuss the role of DBS in the selection of patients with chronic pain.
- ▷ Review the selection of patients for lesioning in the management of cancer pain.
- ▷ Describe the role of occipital and trigeminal nerve stimulation for pain.
- ▷ Identify the role of motor cortex stimulation for the treatment of pain.
- ▷ Discuss when microvascular decompression should be considered in the treatment of trigeminal neuralgia.

1:00–1:20 pm

Intrathecal Pharmaceuticals: Alternatives to Systemic Opioids

Kenneth A. Follett

1:20–1:40 pm

DBS for Pain

Andre Machado

1:40–2:00 pm

Lesioning for Cancer Pain

Ahmed M. Raslan

2:00–2:20 pm

Occipital and Trigeminal PNS

Konstantin V. Slavin

2:20–2:40 pm

Motor Cortex Stimulation for Facial Pain

Byung Chul Son

2:40–3:00 pm

Microvascular Decompression: Still a First Option for TN?

Kim J. Burchiel



3:00–3:15 pm
Beverage Break with Exhibitors

3:15–4:00 pm

ASSFN Award Ceremony

All speakers and faculty subject to change.

Washington Committee Update

Neurosurgery Update:

In 2015, the AANS and CNS made significant progress on our legislative agenda. Highlights include:

- Repealed and replaced Medicare Sustainable Growth Rate (SGR) payment formula
- Eliminated current Medicare quality program payment penalty schemes; replaced with a new streamlined quality payment system that allows physicians to earn bonuses
- Prevented Medicare from eliminating global surgery payments
- Adopted blanket hardship exemption for physicians who cannot meet Stage 2 meaningful use requirements
- Rescinded \$15 million funding for the Independent Payment Advisory Board (IPAB) for FY2016
- Increased funding for the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC) and pediatric research
- Extended two-year moratorium on the 2.3 percent medical device excise tax
- Delayed implementation of the so-called Cadillac tax on high cost employer-sponsored health coverage

2015 LEGISLATIVE AGENDA

President Obama Signs the Medicare Access and CHIP Reauthorization Act

Every year for more than a decade, physicians have faced a significant Medicare payment cut — the result of a flawed sustainable growth rate (SGR) formula. After nearly 14 years of lobbying and 17 temporary “patches,” on April 16, 2015, President Obama signed into law the “Medicare Access and CHIP Reauthorization Act,” which repealed Medicare’s sustainable growth rate (SGR) physician payment system and prevented a 21 percent pay cut. In addition, the legislation:

- Consolidates the current Physician Quality Reporting System (PQRS), Electronic Health Record (EHR) and Value-Based Payment Modifier (VM) programs and eliminates the penalties associated with these programs;
- Includes positive incentives for quality improvement payment programs that allow all physicians the opportunity to earn bonus payments;
- Enhances the ability of physicians rather than the government to develop quality measures and clinical practice improvement activities; clarifies that quality improvement program requirements do not create new standards of care for purposes of medical malpractice lawsuits;
- Reverses the CMS decision to eliminate the 10-day and 90-day global surgery payments; and
- Extends the Children’s Health Insurance Program (CHIP) for two years.

The estimated financial impact of preventing the 2015 SGR and global surgery-related cuts is **\$276 million or \$69,000 per neurosurgeon**. In addition, although difficult to precisely estimate, at a minimum, when MACRA’s incentive program becomes operational in 2019, this legislation will **prevent penalties totaling \$46 million or \$11,500 per neurosurgeon**. Individual neurosurgeons will also have the opportunity to earn significant **bonus payments of up to \$23,000 in 2019** and even higher amounts in future years.

Over the course of the next several years, organized neurosurgery will focus on guiding this legislation through the implementation process to ensure that CMS develops the new Medicare physician payment system as directed and intended by Congress.

Congress Paves the Way for Physicians to Avoid Meaningful Use Penalties

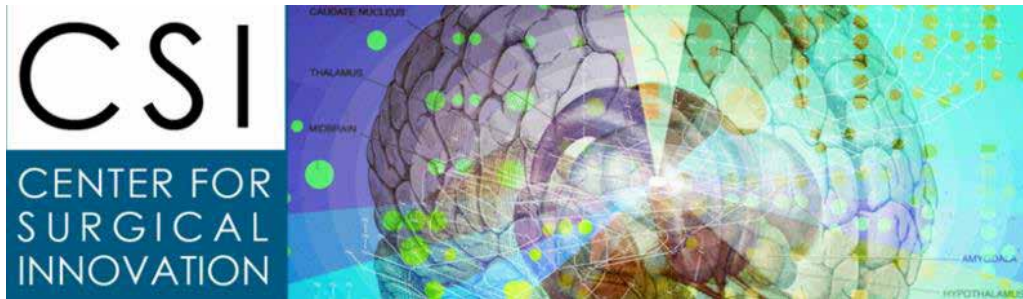
On Dec. 18, 2015, Congress passed S. 2425, the Patient Access and Medicare Protection Act, which President Obama signed into law (Public Law No: 114-115) on Dec. 28, 2015. This legislation includes a provision providing physician’s relief from Medicare’s Electronic Health Record (EHR) Incentive Program Stage 2 meaningful use requirements. Physicians who do not meet the Stage 2 requirements or receive an exception face a penalty on their 2017 Medicare Part B billings. This legislation will allow CMS to approve submitted hardship exception applications in a batch until March 15, 2016 (CMS subsequently extended the deadline to July 1, 2016). Currently, these applications are examined on a case-by-case basis, and CMS acknowledged that it would be difficult to sort through the volume of requests they would receive. By processing the submissions in a batch, all physicians who apply will receive a blanket hardship exception. Those who do not apply could face up to a 3 percent cut in their Medicare payments in 2017. New this year, individuals can apply on behalf of a group of physicians.

CMS has posted new, streamlined hardship applications, reducing the amount of information that neurosurgeons must submit to apply for an exception. [Click here for the new applications and instructions for a hardship exception](#). Neurosurgeons can also [click here for a step-by-step instruction sheet created by the American Medical Association \(AMA\)](#).

Without this legislation, neurosurgeons **could have faced a total of \$21,000,000 in payment penalties or \$5,250 per neurosurgeon**. The success of this advocacy effort has, therefore, vastly improved neurosurgeons’ bottom-line and minimized, to a small degree, the regulatory hassles associated with the EHR meaningful use program.

*Donald M. Whiting, MD, FAANS
Allegheny Health Network*

*The University of Colorado Department of Neurosurgery
in association with the ASSFN, NREF and AANS, present:*



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