

Stereotactic and Functional NEUROSURGERY NEWS



Spring 2008

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

Editor: Konstantin Slavin, MD

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From the President



Michael Schulner, MD

The Aging Brain

While functional neurosurgery aims to improve the quality of life for patients of all ages, much of what we do involves caring for older patients. This in part reflects the fact that the incidence of

Parkinson's disease, a condition for which surgery has been successfully revived over the last two decades, increases as we age. But PD is hardly the only neurological scourge of old age. Stroke, normal pressure hydrocephalus, and Alzheimer's disease are problems of increasing importance as the graying of America and much of the world continues.

As neurosurgeons we are used to boasting (or lamenting the fact) that we care for patients with relatively uncommon problems.

In the U.S. about 34,000 people each year are diagnosed with brain tumors, 30,000 will sustain a subarachnoid hemorrhage, etc. But consider the number of people who will develop problems of the aging brain. As many

as a million Americans have PD, with 40,000 new cases diagnosed each year. There may be 1.5 million people who have had a stroke, with 350,000 new patients each year, 25 percent of whom are expected to live with severe disability. NPH is estimated to affect one in 200 people over the age of 65, with close to 6,000 new cases a year diagnosed in the U.S. alone. And AD is the potential medical tsunami of this century. Signs of AD are present in up to 3 percent of people over 65 with the risk doubling for every five years of age afterward. Up to 18 million people are affected worldwide at this time.

What these conditions have in common is their increasing incidence with increasing age and the possibility of a patient having more than one disorder. Clinicians often have a hard time planning treatment based on a single diagnosis. Dementia is a hallmark of AD, of course, but also of the other conditions noted above. Patients who show an excellent response to ventricular shunting may present with "classic extrapyramidal" signs of PD. And so on.

At the same time, great possibilities exist for neurosurgical therapies that help older people. The success of DBS for treating PD is well known. But what about DBS for AD as well? Are there targets that can be stimulated to induce neurogenesis or to enhance memory directly? If cortical stimulation facilitates recovery from stroke, what can we learn from that experience for patients with PD? What will be the role of functional imaging in identifying likely responders to shunting for NPH? There are trials underway for gene therapy, stem cell transplantation, and infusion therapies for various disorders—how will we apply the lessons from one of these therapies to a broader population?

On the threshold of treating an aging population but also seeing new opportunities for diagnosis and treatment of a variety of

neurological disorders, the ASSFN proposes the Aging Brain Initiative. Already, operating on and caring for patients in their 70s and older is a routine part of functional neurosurgery. We will focus our energies on viewing the disorders of the older human brain as a continuum, seeking to facilitate the neurosurgical management of conditions deemed untreatable by any means and to refine the techniques we use now in the elderly. Working together with our colleagues in medicine, neurology, and psychiatry, we will expand the scope of stereotactic and functional neurosurgery to address the needs of an ever-increasing part of society.

The ASSFN proposes the Aging Brain Initiative as a way to view and treat the disorders of the older human brain.

Accreditation of Fellowships in Stereotactic and Functional Neurosurgery

Jaimie M. Henderson, MD, Stanford, Calif.

Although completion of an ACGME-approved residency training program is fully sufficient for the competent practice of neurosurgery, many neurosurgeons choose to pursue additional training in fellowship programs. Subspecialty fellowships proliferated throughout the 1990s, and until recently there has been no standardization or accreditation process for these programs. As reported on the Web site of the Society of Neurological Surgeons, SNS, (www.societyns.org/fellowships/index.html), a summit meeting was held in conjunction with the 1999 AANS meeting to discuss neurosurgical subspecialty training. As a result of this meeting, the SNS was assigned responsibility for developing a process of oversight for subspecialty fellowships. In May 2001, the Committee on Accreditation for Subspecialty Training, CAST, of the SNS adopted a standardized set of guidelines for the accreditation of neurosurgical subspecialty fellowships. These guidelines can be found at the Web site above.

Following the adoption of these guidelines, several subspecialties

sought, and were granted, a means for accrediting individual fellowships. Nearly all neurosurgical subspecialties—cerebrovascular, endovascular, pediatric, peripheral nerve, spine, and oncology—have obtained this ability to accredit individual programs. The leadership of the ASSFN has worked over the past two years to produce fellowship accreditation guidelines which were recently accepted by the SNS CAST. Directors of fellowships in stereotactic and functional neurosurgery may now apply for accreditation by downloading the application form in either PDF or Microsoft Word format from the ASSFN Web site. The program requirements are listed at www.societyns.org/fellowships/requirements-stereotactic_functional.html.

I would encourage all fellowship directors to apply for accreditation, as applicants are likely to give preferential consideration to accredited programs.



Jaimie M. Henderson, MD

From the Editor

The main purpose of this newsletter is to keep ASSFN members informed about new developments and major news in our society and in our field. This is an exciting time for our society, and there are many outstanding events planned for 2008. This issue features the program of the ASSFN's presentations at the Chicago meeting of the AANS; as usual, the seminars and dedicated session of the AANS/CNS Section on Stereotactic and Functional Neurosurgery will give us an opportunity to learn more about clinical and research breakthroughs.

One of the most exciting events of the year will be the biennial ASSFN meeting in Vancouver, which will take place June 1–4, 2008, at the Westin Bayshore hotel in beautiful British Columbia. The lineup of speakers and topics for this meeting is very impressive—and the credit goes to the meeting organizers, the ASSFN President Michael Schulder, MD, Meeting Chairman Andres Lozano, MD, PhD, Scientific Chairman Emad Eskandar, MD, and Local Chairman Christopher Honey, MD. This meeting will run without simultaneous sessions so that each participant can hear the entire program instead of choosing the room to attend and inevitably missing something of great interest.

The theme of the Vancouver meeting is New Horizons in Functional Neurosurgery, and today these horizons include surgery for movement disorders, pain and epilepsy, psychiatric neurosurgery and stereotactic radiosurgery, each of which will be presented at one or several sessions. Intraoperative imaging, cortical stimulation for stroke, depression and pain, and surgery for Tourette's syndrome will be covered at daily breakfast seminars. Special sessions will be dedicated to emerging indications, such as deep brain stimulation in treatment of impaired consciousness, surgery for Alzheimer's disease, visual and auditory prostheses, and so forth. A great highlight of the event will be a lecture of our honored guest, Andre Olivier, MD, of McGill University in Montreal, who will share his experiences in neurosurgery. The program promises to be a great success, and I am honored to

invite you to participate in this key event of our society. More information, including registration and housing details, may be found at the Web site, www.assfn.org/vancouver2008.asp. We look forward to seeing you there; events of this caliber do not happen very often (and the next ASSFN meeting is more than two years away!).

Another notable event promises to be the Stereotactic and Functional Section sessions at the 2008 CNS meeting in Orlando (www.cns.org/meetings/2008/index.asp). The Integrated Medical Learning session will be based on interactive review of selected topics with live audience participation, point-counterpoint expert opinions, practice assessment and subsequent impact evaluation. The IML session will focus on a current and important area of debate in our field: subthalamic nucleus versus globus pallidus stimulation for Parkinson's disease.

A highlight will be our seminar on deep brain stimulation for dystonia, which is intended to provide an overview of current trends and future direction in this exciting and rapidly growing field. Several recognized experts will share their insights in patient selection, procedural details, postoperative management, and so forth. In addition to that, our colleagues from the Section on Pediatric Neurosurgery plan to hold a seminar on treatment of spasticity, which will surely attract many members of our section as well.

I would like once again to invite you to contribute to the newsletter. This is a unique opportunity to share your research and practice concerns and achievements with colleagues! All comments, announcements and updates are welcomed.

Konstantin Slavin, MD
Chicago, Ill.



Konstantin Slavin, MD

Alternative Target for Dystonia

Michaux Kilpatrick MD, PhD, and Gordon H. Baltuch, MD, PhD
Philadelphia, Pa.

Dystonia is a movement disorder characterized by sustained muscle contractions that usually produce twisting and repetitive involuntary movements. These dystonic movements are directional and often force the involved body part or region into abnormal postures. Anatomical distribution, age of onset and etiology comprise the most widely accepted classification system for dystonia. The variable distribution (generalized, focal, segmental, hemidystonia), variable age of onset, and having both primary (genetically defined and idiopathic) and secondary causes make it a highly heterogeneous disease (Kern and Kumar, *The Neurologist* 2007;13:237–252).

Early-onset (age < 25) primary generalized dystonia, PGD, is due to a mutation in the DYT1 gene in a significant subset of patients and is the most common and severe form of hereditary dystonia. Pharmacological regimens have been implemented for PGD with little benefit (Green et al. *Mov Disord* 1995;10:143–152). Ablative procedures, including stereotactic thalamotomy and pallidotomy, were historically used as surgical treatments for dystonia but with controversial outcomes and notable complications (Andrew et al. *Brain* 1983;106:981–1000, Vitek et al. *Adv Neurol* 1998;78:211–219, Lin et al. *J Neurosurg* 1999;90:974–976). More recently, deep brain stimulation, DBS, of the globus pallidus internus, GPi, has become the most accepted procedure for PGD, proving to be both efficacious and safe (Coubes et al. *Lancet* 2000;355:2220–1).

Inasmuch as the GPi has proven to be an appropriate target, chronic stimulation of the subthalamic nucleus, STN, has also been shown to be beneficial for the treatment of dystonia. Clearly DBS of the STN in Parkinson's disease patients reduces the early morning and off-medication dystonia apparent in the late phase of the disease (Limousin et al. *Lancet* 1995;345:91–95, Krack et al. *Brain* 1999;122:1133–1146, Lyons and Pahwa, *J Neurosurg* 2006;104:502–505). There is less evidence accumulated to date to determine if DBS of the STN is beneficial in PGD. While review of the literature reveals variable outcomes (Detante et al. *Adv Neurol* 2004;94:309–314 versus Sun et al. *Proceedings from ASSFN Quadrennial Meeting*, May 18–21, 2003, New York, abstract), overall results have been promising. We recently published a case report demonstrating the benefits of DBS STN in a patient with primary cervical dystonia (Chou et al. *Mov Disord* 2005;20(3):377–380). This case report justified a blinded prospective study involving a series of adults with severe medically refractory idiopathic dystonia treated with bilateral DBS of the



Michaux Kilpatrick, MD, PhD



Gordon H. Baltuch, MD, PhD

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DBS for Dystonia: What's New?

Philip Starr, MD, PhD, and Jill L. Ostrem, MD
San Francisco, Calif.

Neurosurgeons have been treating dystonia for 50 years. Approaches have included lesioning of the thalamus or globus pallidus internus, GPi, for generalized dystonia, denervation of involved muscles for cervical dystonia, and insertion of baclofen pumps for secondary dystonias.

GPi deep brain stimulation, DBS, for dystonia has been performed for the past 10 years. Clinical results for approximately 250 patients have been published. Most series show 40 percent to 70 percent improvement in the most commonly used rating scale for dystonia, the Burke-Fahn-Marsden Dystonia Rating Scale (movement subscale), with follow-up times generally less than two years. In 2003, the Medtronic Activa DBS device was granted limited FDA approval for primary generalized and segmental dystonia in patients age 7 years or older under a humanitarian device exemption. This has facilitated insurance coverage for the procedure.

In the past three years, much has occurred in this field. Results of two European randomized double-blinded trials of GPi-DBS were published (Vidailhet et al. *N Engl J Med* 2005;352:459–467; Kupsch et al. *N Engl J Med* 2006;355:1978–1990). These papers established the first class I evidence for efficacy of GPi-DBS in dystonia, and in fact provided the first class I evidence for any surgical treatment of dystonia. For the French study, an open label three-year follow-up showed increased benefits compared to earlier time points (Vidailhet et al. *Lancet Neurol* 2007;6:223–229). In most studies, the pulse frequency has been set at 100–200 Hz, similar to the effective frequencies for Parkinson's disease, PD, and essential tremor, ET. However, Alterman and colleagues (*Neurology* 2007;69:681–688) recently have shown that 60 Hz stimulation can be effective for juvenile onset generalized dystonia, indicating that the frequency response in dystonia may be quite different from that of PD and ET. Although GPi has been the most common target choice, both GPi and subthalamic nucleus, STN, targets were included in the humanitarian device exemption labeling for Medtronic Activa. Several groups have recently shown promising results for STN-DBS in patients with adult-onset dystonias.

Unlike PD, the rationale for DBS in dystonia is essentially empiric, without a clear theoretical basis. Functional imaging studies in primary dystonia show the putamen as a consistent site of metabolic abnormalities, and the supplementary motor area shows increased task-related activity. Single neuron electrophysiologic recordings in the GPi of dystonic humans show characteristic discharge patterns that differ from those of PD patients. Several laboratories have created transgenic mouse models



Philip Starr, MD, PhD



Jill L. Ostrem, MD

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Stereotactic and Functional Highlights at the AANS Annual Meeting

The 2008 AANS Annual Meeting will take place April 26–May 1 in Chicago, Ill. Stereotactic and functional highlights of the meeting include the following presentations. Full sessions on stereotactic and functional neurosurgery will take place on Monday, April 28, and on Tuesday, April 29. Complete meeting details are available at www.aans.org/annual/2008/default.asp.

Monday, April 28, 2008

PLENARY SESSION I

604 12:00–12:14 PM

International Abstract Award Hypothalamic Stimulation for Chronic Cluster Headache: A Pluricentric Controlled Study

Yves R. Lazorthes, MD; Nelly Fabre; Denis Fontaine; Jean-Christophe Sol; Patrick Mertens; Serge Blong; Michel Lantery-Minet

SCIENTIFIC SESSION III—

STEREOTACTIC AND FUNCTIONAL

2:45–5:15 PM

Moderator: *Michael Schulder, MD*

621

2:45–2:59 PM

Deep Brain Stimulation of the Ventral Internal Capsule/Ventral Striatum for Obsessive-Compulsive Disorder: World-Wide Experience

Ali R. Rezaei, MD; Loes Gabriels, MD; Benjamin Greenberg, MD, PhD; Donald Malone, MD; Gerhard Friehs, MD; Kelly Foote, MD; Andre Machado, MD, PhD; Michael Okun, MD; Nathan Shapira, MD, PhD; Paul Cosyng, MD; Kubu Cynthia, PhD; Paul Malloy, PhD; Steven Salloway, MD; Wayne Goodman, MD

622

3:00–3:14 PM

Reinforcement Learning in the Basal Ganglia During Deep Brain Stimulation

Kareem Zaghloul, MD, PhD; Justin Blanco, BSC; Kathryn McGill, MSN, ACNP; Michaux Kilpatrick, MD, PhD; Patrick Connelly, MD; Jurg L. Jaggi, PhD; Michael J. Kahana, PhD; Gordon H. Baltuch, MD, PhD

623

3:15–3:29 PM

Gamma Knife Radiosurgery for Trigeminal Neuralgia: Comparison of the Root-Entry Zone and Retrogasserian Targets

K. Singh Sabni, MD, FACS; Aditya Gupta, MD; Alfred M. Strash, PhD; Karla M. Mossi, PhD

624

3:30–3:44 PM

Deep Brain Stimulation Does Not Affect Neurons in the Subthalamic Nucleus

Jonathan D. Carlson, MD, PhD; Mary Heinricher, PhD; Justin Cetas, MD, PhD; Kim Burchiel, MD

INVITED SPEAKER

3:45–4:15 PM

Adjusting the Dials on the Circuits of the Brain

Andres M. Lozano, MD, PhD

625

4:16–4:30 PM

The Safety of MRI after DBS Implantation Evaluated by Immediate and Delayed Serial Imaging

Vaninder S. Chhabra, MD; Edward Sung, BS; Klaus Mewes, PhD; Robert E. Gross, MD, PhD

626

4:31–4:45 PM

Gildenberg Resident Award Automated Visualization of Subthalamic Nucleus Border Location During Deep Brain Stimulation Surgery

Shabbar F. Danish, MD; Gordon H. Baltuch, MD, PhD; Jurg Jaggi, PhD; Stephen Wong, MD

627

4:46–5:00 PM

Epilepsy Surgery for Insular Lesions

Marec von Lehe, MD; Joerg Wellmer, MD; Thomas Kral, MD; Horst Urbach, MD, Prof; Johannes Schramm, MD; Christian E. Elger, MD; Hans Clusmann, MD

628

5:01–5:15 PM

Medically Intractable Temporal Lobe Epilepsy in Patients With Normal MRI: Surgical Outcome in Twenty-Four Consecutive Patients

Adam P. Smith, MD; Richard W. Byrne, MD; Andres Kanner, MD; Sepehr Sani, MD; Matthew Morrin; Susan Palac, MD; Donna Bergen, MD; Antoineta Balabanov, MD; Michael Smith, MD; Walter W. Whisler, MD, PhD

Tuesday, April 29, 2008

PLENARY SESSION II

703 10:30–10:44 AM

Deep Brain Stimulation (DBS) For Treatment of Depression: Long-Term Outcomes From a Prospective Multi-Center Trial

Ali R. Rezaei, MD; Donald Malone, MD; Darin Dougherty, MD; Gerhard Friehs, MD; Emad Eskandar, MD; Andre Machado, MD, PhD; Cynthia Kubu, PhD; Linda Carpenter, MD; Audrey Tyrka, MD, PhD; Paul Malloy, PhD; Stephen Salloway, MD; Scott Rauch, MD; Lawrence H. Price, MD; Steven Rasmussen, MD

AANS/CNS SECTION ON STEREOTACTIC AND FUNCTIONAL SURGERY

2:45–5:30 PM

2:45–3:50 PM

Symposium: Advances in Neuro-GeneTherapy: Update on Clinical Translation

Moderators: *Roy A. E. Bakay, MD; Nicholas M. Boulis, MD*

2:45–2:56 PM
Gene Therapy Approaches to the Spinal Cord and Peripheral Nervous System: ALS, Neuropathy and Spinal Cord Injury
Speaker: *Nicholas M. Boulis, MD*

2:57–3:08 PM
Gene Therapy for Neurodegeneration: Huntington's, Alzheimer's and Spinal Cerebellar Atrophy
Speaker: *Jeffrey Kordower*

3:09–3:20 PM
Gene Therapy for Parkinson's Disease
Speaker: *Philip A. Starr, MD, PhD*

3:21–3:32 PM
Gene Therapy for Functional Disorders of the Nervous System: Psychiatry, Movement Disorders and Pain
Speaker: *Michael G. Kaplitt, MD, PhD*

3:33–3:50 PM
Question and Answer

713 **3:51–4:00 PM**
The STEPS Trial: Design of a Phase 2 Study to Evaluate Spheramine, A Novel Cell-Based Therapy Administered by Stereotactic Implantation Into the Striata of Patients With Parkinson's Disease (PD)
Robert E. Gross, MD, PhD; Roy A. E. Bakay, MD; Wilhelm Eisner, MD; Robert Hauser, MD; Walter Hong; Heinz Reichmann, MD; Elke Reissig, MD; Heike Steiner; Raymond L. Watts, MD

714 **4:01–4:10 PM**
Extra-Temporal Focal Cortical Dysplasia: Long-Term Surgical Outcome
Kostas N. Fountas, MD; Joseph R. Smith, MD, FACS

715 **4:11–4:20 PM**
Granulocyte Macrophage-Colony Stimulating Factor (GM-CSF) Promotes the Survival of Dopaminergic Neurons in 1-Methyl-4-Phenyl-1,2,3,6-Tetrahydropyridine (MPTP) Induced Parkinson's Disease Rat Model
Yoon Ha, MD, PhD; Na Kyeong Kim, MSc; Byung Hyune Choi, PhD; Hyeonseon Park, MD, PhD; Hyung Chun Park, MD, PhD; So Ra Park, MD, PhD

716 **4:21–4:30 PM**
Long-Term Benefits of Subthalamic Nucleus Deep-Brain Stimulation for Cervical Dystonia
Peter A. Pahapill, MD, PhD; Barbara O'Connell, MD

717 **4:31–4:40 PM**
Idiopathic and Secondary Upper Limb Segmental Dystonia: The Therapeutic Role of Chronic Motor Cortex Stimulation
Angelo Franzini; Carlo Marras; Giovanni Tringali; Giuseppe Messina; Luigi Romito; Giovanni Broggi



Buckingham Fountain, Chicago, Ill.

718 **4:41–4:50 PM**
Complications of Subdural Electrode Epilepsy Recording
Larry R. Shannon, II, MD; Richard W. Byrne, MD; Michelle Cecchini, BS; Matthew Morrin; George S. Selas, BS; Andres Kanner, MD; Michael Smith, MD

719 **4:51–5:00 PM**
Intrastriatal Implantation of Human Retinal Pigment Epithelial (hRPE) Cells Attached to Gelatin Microcarriers (GM) for the Treatment of Parkinson's Disease (PD)
Roy A. Bakay, MD; Michael Cornfeldt, PhD; Alan Freeman, MD; Elke Reissig, MD; Raymond L. Watts, MD

720 **5:01–5:10 PM**
Predicting Successful Surgical Treatment of Temporal Lobe Epilepsy
W. Jeff Elias, MD; Charles A. Sansur, MD, MHSc; Robert C. Fryssinger, PhD; Nathan B. Fountain, MD

721 **5:11–5:20 PM**
Hypofractionated Stereotactic Radiation for Giant AVMs: Preliminary Results
Rajashree Sarkar, MD; Alessandra Gorgulho, MD; Ana Maria Moura, MD; Waren Ishida, MD; Nzhde Agazaryan, PhD; Michael T. Selch, MD; Antonio A.F. De Salles, MD, PhD

722 **5:21–5:30 PM**
Predictors of Peritumoral Edema Following Stereotactic Radiosurgery of Supratentorial Meningiomas
Chirag G. Patil, MD; Stanley Hoang, BS; John Borchers, MD; Gordon Sakamoto, MD; Steven D. Chang, MD; John R. Adler, MD

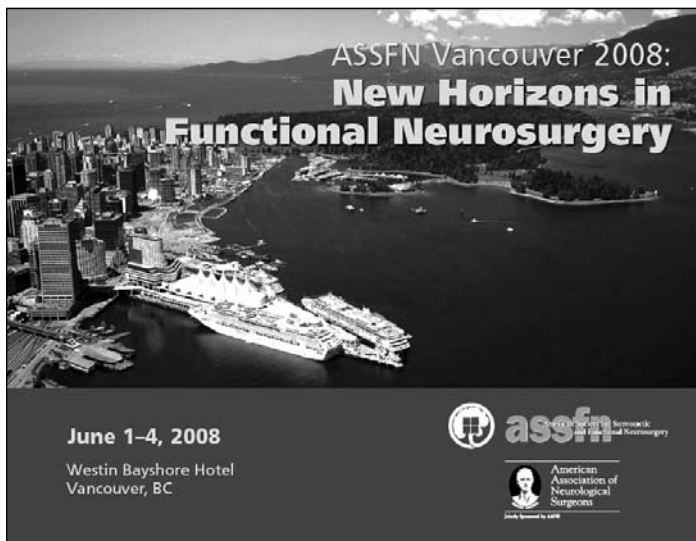
Wednesday, April 30, 2008

PLENARY SESSION III
805 **11:00–11:14 AM**
Significant Reduction in Neurosurgical Hardware Infection With Use of Local Antibiotics
Jonathan P. Miller, MD; Feridun Acar, MD; Kim Burchiel, MD

ASSFN Residents and Fellows Reception

The Careers in Functional Neurosurgery: Resident & Fellow Reception will take place in the Sheraton Chicago Hotel & Towers for Tuesday, April 29th from 5:45–7:15 p.m. during the 2008 AANS Annual Meeting. This is a great opportunity for current and prospective fellows to learn more about functional neurosurgery! Please come and join your current and future colleagues to discuss

your successes and problems. This is a very informal event and, based on the experience of past meetings, the atmosphere is perfect for learning, sharing, establishing connections and making new friends. For more information, please contact Nick Boulis, MD, PhD, at Nicholas.Boulis@emoryhealthcare.org.



Alternative (continued from page 3)

STN (Kleiner-Fisman et al. J Neurosurg 2007;107:29–36). In this series, improvement in dystonia scores, improvement in quality of life, and reduction in disability were sustained for 12 months in the majority of patients.

Indeed, given the highly heterogeneous nature of this disease process, the optimal stimulation target for the various dystonia subtypes remains unknown. Randomized, controlled clinical studies with large sample sizes and long-term follow-up are needed to refine anatomic target selection.

DBS (continued from page 3)

of dystonia by overexpression of the mutant form of the Tor1A gene (responsible for DYT1+ generalized dystonia in humans). Only subtle motor deficits are incurred, and not in all strains. Some tantalizing findings in at least some of the transgenic models have included altered striatal dopamine levels, and neuropathology in the pedunculopontine nucleus, similar to that recently shown in humans with DYT1+ dystonia.

Expect more interesting developments in this surprising field in the years to come.

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Joshua M. Rosenow, MD (2006–2010)

Application for New Membership



American Association of Neurological Surgeons



American Society for Stereotactic and Functional Neurosurgery

Name _____

Office Address _____

City _____ State _____ Country _____

Phone _____ Fax _____ E-mail _____

Residency Training Program _____ Years: _____

Medical School _____

Specialty (circle) Neurosurgery Neurology Other: _____

AANS Member Yes No CNS Member Yes No

Interests in Stereotactic and Functional Neurosurgery: (please circle)

Movement Disorders Pain Epilepsy Psychosurgery Tumors

Biomedical Engineering Radiosurgery Image Guidance

Determine and circle your membership category:

Category	Yearly Fee	Description
Active	\$325	For practicing neurosurgeons in the United States or Canada who have completed residency/fellowship
Resident/Fellow	\$25	One-time fee (not yearly). For neurosurgical trainees currently in residency or fellowship
Senior	Free	For neurosurgeons who are retired and over 65 years old
Associate	\$50	For non-neurosurgeons

The benefits of Active membership include:

- Membership in the AANS/CNS Section on Stereotactic and Functional Neurosurgery
- Membership in the World Society for Stereotactic and Functional Neurosurgery
- Reduced fees for the biennial ASSFN meetings
- Subscription to the journal *Stereotactic and Functional Neurosurgery* (including online access)

The benefits of all other membership categories are:

- Membership in the AANS/CNS Section on Stereotactic and Functional Neurosurgery
- Reduced fees for the biennial ASSFN meetings
- Eligibility to subscribe to the journal *Stereotactic and Functional Neurosurgery* (including online access) at the reduced rate of \$135. If you are joining the ASSFN as a Resident/Fellow, Associate, or Senior member and wish to have the journal subscription, send a check for \$135, payable to AANS, directly to our secretariat at the AANS. Mail to: ASSFN, c/o AANS, 5550 Meadowbrook Drive, Rolling Meadows, IL 60008, and check this box:
 - YES I would like to receive the society journal at the reduced rate.

There are two ways to become an ASSFN member:

(1) Apply online at www.MyAANS.org (for Active member applications only), or (2) mail this application form and a check for the appropriate fee (see table above), payable to ASSFN, to: ASSFN, c/o AANS, 5550 Meadowbrook Drive, Rolling Meadows, IL 60008. For questions or concerns, contact the current (2006–2008) treasurer, Ali Rezai, at rezai@ccf.org, or the membership chair, Kelly Foote, at foote@neurosurgery.ufl.edu.

Upcoming Meetings Calendar

One of the purposes of this newsletter is to inform all ASSFN members about upcoming meetings and conferences of interest. Meeting organizers are encouraged to contact the newsletter editor, Konstantin Slavin, MD, KSlavin@uic.edu, with information regarding future meetings.

76th Annual Meeting of the American Association of Neurological Surgeons

Chicago, Ill.
April 26–May 1, 2008
www.aans.org/annual/2008/default.asp

14th International Meeting of the Leksell Gamma Knife Society

Quebec City, Canada
May 18–22, 2008
www.lgks2008.org

2008 Biennial Meeting of the ASSFN

It's not too late to register!
Vancouver, Canada
June 1–4, 2008
www.assfn.org/vancouver2008.asp

2008 Congress of Neurological Surgeons Annual Meeting

Orlando, Fla.
Sept. 20–25, 2008
www.cns.org/meetings/2008/index.asp

XVIII Congress of the European Society of Stereotactic and Functional Neurosurgery (ESSFN)

Rimini, Italy
Oct. 5–8, 2008
www.essfn2008.csrcongressi.com/

77th Annual Meeting of the American Association of Neurological Surgeons

San Diego, Calif.
May 2–7, 2009
www.aans.org

15th Quadrennial Meeting of the World Society of Stereotactic and Functional Neurosurgery

Toronto, Canada
May 24–27, 2009
www.wssfn.org

XIV International Congress of Neurological Surgery (WFNS)

Boston, Mass.
Aug. 30–Sept. 4, 2009
www.wfns.org