President’s Message

Advocating Neuromodulation

Change is happening fast in the field of neuromodulation. Since my first message about 6 months ago, challenges have arisen on a number of fronts. Although I am not prone to alarmist sentiment, it appears that neuromodulation is under assault, and we must fight vigorously to help our patients maintain access to the therapies they need.

As many of you know, the American College of Occupational and Environmental Medicine (ACOEM) recently issued guidelines for the treatment of low back pain. Within these guidelines (widely used by state workers’ compensation programs to determine coverage), the use of spinal cord stimulation, among other interventions, has been deemed “not recommended,” based on a flawed and cursory examination of the medical literature. NANS leadership, in concert with the Neuromodulation Therapy Access Coalition (NTAC), chaired by Past-President Joshua P. Prager, MD, have joined together to fight this flawed document and have won some preliminary victories. We believe we can convince insurers that guidelines such as these represent bad policies for patients.

Despite the efforts and time spent opposing the ACOEM, it seems that there may be even more difficult obstacles to overcome. On August 29, the Washington State Health Care Authority issued an updated coverage decision on the use of intrathecal medication delivery systems for chronic noncancer pain, stating that this therapy would no longer be a covered benefit in the state of Washington. To my knowledge, this marks the first time that a state government has gone against a national Medicare coverage decision. Although we were given only 14 days to respond, NANS leadership is working jointly with a number of other societies to rapidly craft a rebuttal. We intend to firmly oppose this decision. If upheld, it would set a deeply troubling precedent for many of the therapies that offer hope to our desperate patients. I want to take this opportunity to thank Dr. Prager, Executive Committee member David Kloth, MD, and Government Affairs Committee members Marshall Bedder, MD FRPC(C), (also our president-elect) and Joshua Rosenow, MD, for their outstanding efforts in helping to quickly respond to this challenge.

Why are these attacks occurring? To understand, we have to look inward at our own behavior. In too many cases, neuromodulatory therapies have been indiscriminately applied as a panacea, sometimes with poor attention to patient selection, poor surgical technique, and with poor subsequent outcomes. We all know how well these therapies can work in the proper patient when performed skillfully and adjusted carefully in the postoperative period. However, when poorly trained practitioners add pumps or stimulators to their practices solely for financial gain, the entire field suffers. We are taking steps as a society to issue guidelines on proper training and performance of neuromodulatory procedures. The Research and Education Committee has taken on this important task, and we plan to have a document addressing spinal-cord stimulators ready for dissemination before the end of 2008. There is widespread sentiment that performance standards for neuromodulatory interventions are long overdue.

Although the battlefield environment is “hot” right now, your NANS leadership is fighting back energetically—but we can’t do it alone. You can take on a personal role by getting involved with your local government or insurance payers. A proactive meeting with a slideshow and patient testimonials can go a long way toward helping improve the perception of neuromodulation technologies. Prospective data showing your good outcomes is even better.

In perhaps an ironic balance to the uncertain present of our specialty, the future outlook has never been brighter.

The Annual Meeting is right around the corner, and the Scientific Program Committee, chaired by Ali R. Rezaei, MD, has put together an outstanding program. Although it sounds clichéd, this year’s meeting will be one of the most exciting ever, showcasing a veritable explosion of scientific knowledge and application in varied disease states. Some meeting highlights are included in this issue of the newsletter, and the preliminary program will be mailed out shortly. I hope to see all of you in Las Vegas December 5–7. Please encourage all your colleagues to attend what will certainly be an enjoyable and enlightening meeting.

Another important recent development is the launch of a national public relations campaign for neuromodulation. Spearheaded by International Neuromodulation Society (INS) Chairman Elliot Krames, MD, this wide-ranging effort is being coordinated by Feinstein-Kean, a San Francisco public relations firm with extensive experience in promoting healthcare topics. A detailed plan has been developed to showcase the amazing impact neuromodulation can have on the lives of our patients, including both local and national exposure. We must let America know just how effective neuromodulation is.
Feature

Advancements in Spinal-Cord Stimulation Technology

Dajae Wang, MD; Alan Miller, MD; Ashwini Sharan, MD

Neuromodulation is a novel methodology for treating ailments of the nervous system without lesion or destruction of existing neural pathways. Deep brain stimulation (DBS), when introduced in 1987 for Parkinson’s Disease (PD), revolutionized the field and provided new treatment for medically refractory PD patients. Subsequently, DBS has been used for dystonia, tremor, depression, obsessive-compulsive disorder, Tourette’s disorder, anorexia, and other neurological disorders. Clearly, many other intractable neurological diseases will be treated with this method in the very near future.

Throughout this renaissance, spinal-cord stimulation (SCS) therapy has become relatively overshadowed. The therapeutic effects of electricity have been well described. The ancient Egyptians and Greeks applied electric eels to deliver shock therapy and the ancient Romans applied the torpedo fish to the human body to treat cephalgia and arthralgia. In the East, the ancient Chinese culture described the enhancement of needle puncture with electricity. In more modern times, after the introduction of the gate control theory for pain control by Melzack and Wall, interest focused on dorsal-column stimulation. In 1967, C. Norman Shealy, last year’s NANS keynote speaker, after demonstrating safety in animals, inserted the first dorsal-column stimulator in a human patient suffering from terminal metastatic cancer.

Over the last 40 years, this therapy has undergone considerable evolution in technology. In the beginning there were unipolar electrodes connected to radio-frequency pulse generators powered by lithium batteries. It was not until 1980 that the first percutaneous quadripolar electrode with contact combinations that could be reprogrammed noninvasively through an external transmitter was developed.

The improvements in SCS technology have rapidly advanced in the past 5 years. Some of these advancements have been fostered by the rapid acceptance of SCS as a modality of pain treatment. Additionally, now that there are three manufacturers of the implant in the United States, pure competition for product differentiation has led to further advancements. SCS technology essentially consists of two components—the Implantable Pulse Generator (IPG) and the electrodes.

The most recent improvements of electrodes have focused on contact spacing, the number of contacts, and columns of contacts. In 1994, Advanced Neuromodulation Systems (ANS), a St. Jude Company based in Plano, TX (www.ans-medical.com), developed an octapolar lead, which is a long lead with 4 mm spacing covering a 5.6 cm area, to enhance the coverage of pain. In 2004 and 2005, Boston Scientific (BSCI, www.bostonscientific.com), based in Valencia, CA, launched a tight spacing 1-mm percutaneously implantable octopolar electrode and a 16-contact, 1-mm spacing paddle electrode in an attempt to eliminate “dead spots” along the lead, which further optimized and allowed for sculpting the electric field. In 2004, ANS introduced the C-series leads and Medtronic, Inc. of Minneapolis, MN (www.medtronic.com) introduced the hinged electrode, both of which allowed better anatomical conformity to the thecal sac. In 2007, both ANS and Medtronic launched tripolar configuration leads in an

Table 1: Timeline of Introduction of Implantable Pulse Generators (IPG) and Leads

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Neuromodulation</td>
<td>2003</td>
<td>Tripole™ 8 lead</td>
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<tr>
<td>System (ANS)</td>
<td></td>
<td>C-series paddle lead</td>
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<tr>
<td>Plano, TX</td>
<td></td>
<td>S-series lead</td>
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<tr>
<td></td>
<td>2004</td>
<td>Axess® lead (micro lead)</td>
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<tr>
<td></td>
<td></td>
<td>Genesis RC system (rechargeable)</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>Em Rechargeable IP (FDA-approved for 10 years, 16 contacts, constant</td>
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<tr>
<td></td>
<td></td>
<td>current delivery)</td>
</tr>
<tr>
<td>Medtronic, Inc.</td>
<td>2006</td>
<td>Tripole™ 16 contact lead</td>
</tr>
<tr>
<td>Minneapolis, MN</td>
<td></td>
<td>Em with Neurodynamix™ IP (microchip to maximize pain coverage)</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>Exclaim pulse lead</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eon IP (extended-life battery)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eon Mini IP (small size, 18cc)</td>
</tr>
<tr>
<td>Advanced Bionics/Boston</td>
<td>2008</td>
<td>RestoreULTRA™ IP (small size, large recharge surface, 22cc)</td>
</tr>
<tr>
<td>Scientific Inc.</td>
<td></td>
<td>RestoreIPG (extended-life battery)</td>
</tr>
<tr>
<td>Valencia, CA</td>
<td></td>
<td>RestoreIPG (rechargeable IP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Precision Plus™ IP (small size)</td>
</tr>
</tbody>
</table>

Bold = Implantable pulse generator
NTAC Update

The Neuromodulation Therapy Access Coalition (NTAC) continues to expand its reach and impact. Under the chairmanship of Joshua P. Prager, MD, and with the Executive Committee leadership of Jaimie Henderson, MD, NTAC is working on critical issues affecting access to neuromodulation therapies throughout the United States.

State Advocacy
NTAC is actively lobbying in three battleground states—New York, Tennessee, and Washington state—to ensure appropriate access to neuromodulation therapies for injured workers.

- Washington: As a clear example of why NTAC’s work and the advocacy of its members is so critical, on August 15 the state of Washington’s Health Technology Assessment (HTA) recommended against coverage of intrathecal drug delivery systems (IDDS), despite its widespread coverage by payers throughout the country, its essential role in treating certain chronic pain patients, and a national coverage decision by Medicare. NTAC is working in close collaboration with grassroots efforts by Medtronic and patient advocates to reverse this decision and maintain coverage access.

- New York and Tennessee: In both states, we are optimistic that grassroots lobbying will lead to new state workers’ compensation treatment guidelines that fairly evaluate and appropriately cover neuro-modulation therapies in these key states.

ACOEM Guidelines
- NTAC also has been an outspoken commenter on the process and recommendations of the American College of Occupational and Environmental Medicine (ACOEM). Despite ACOEM’s recommendations against a broad range of interventional pain medicine tests, therapies, and interventions, NTAC and its members have clearly defined the severe limitations in ACOEM’s guidelines and set the stage for advocacy efforts that will lead to more balanced approaches in state policy.

SCS Practice Parameters
- Following publication of the Practice Parameters for spinal-cord stimulation for chronic neuropathic pain, NTAC is supporting continued work of the Neuromodulation Foundation by launching a comprehensive, Web-based version of the practice parameters, providing clinicians and patients with free, accessible, and current information on SCS online.

Outreach and Awareness Building
- NTAC is participating and exhibiting at national medical society meetings, including those of AAPM, ASIPP, ISIS and NANS, to continually raise awareness of the coalition’s work, highlight the essential role of physician advocates, and increase an understanding of both the threats and opportunities to ensure that patients get the treatments they need.

NTAC Is Proud to Include the Following Founding Members:
- Advanced Neuromodulation Systems (ANS)
- North American Neuromodulation Society (NANS)
- American Academy of Pain Medicine (AAPM)
- American Society of Interventional Pain Physicians (ASIPP)
- American Society of Interventional Pain Medicine (ASIPP)
- International Spine Intervention Society (ISIS)
- Medtronic Neuromodulation (MDT)

To learn more, contact Executive Director Eric Hauth at eric@neuromodulationaccess.org or 651/278-4238.

Figure 1: Time vs. Number of Permanent IPGs Implanted Each Year.

Figure 2: Time vs. Number of Physicians Implanting IPGs.

estimated based on ASA and NANS data.

Attempt to improve lower back coverage by increasing the difference between perception threshold and usage range (Table 1).

Impulse generator (IPG) development has paralleled the advancements in electrode technology by allowing for greater delivery of electrical current—up to 16 channels. The first rechargeable IPG was released by BSCI in 2004. This represented the first rechargeable generator for neurologic application that powered 16 channels. Since then, the IPG technology has continued to evolve. We now have IPGs with newer chips, smaller sizes, larger interchanging intervals, and the ability to independently program the different channels. The Medtronic IPG employs constant voltage technology; ANS and BSCI use constant current technology. There is a theoretical advantage that the constant current technology may provide more reliable stimulation. However, there are no clinical studies to prove this theoretical advantage (Table 1).

Chronic pain, especially neuropathic pain, remains a challenge in our daily practice. We have more tools available to offer greater alternatives. More physicians are realizing the benefits of neurostimulation as an important tool in the treatment arsenal for chronic pain and for dramatic increases in implantation of IPGs and implanters, as shown in Figures 1 and 2. Other specialties, such as rehabilitation medicine and orthopedic surgery, also have a demonstrated interest in the procedure. Newer applications of pain relief seem to be continuously emerging. Neurostimulation procedures today are performed for refractory angina pectoris, interstitial cystitis, and occipital neuralgia. As medical providers, it is important to understand the pros and cons of the currently available products and to choose the best product based upon the patient’s individual needs.
New Frontiers NANS 12th Annual Meeting  
December 4–7, 2008  
Mandalay Bay Resort & Casino  
Las Vegas, NV

To Register
Visit www.cteusa.com/nans1 for the downloadable form or contact
NANS Registration Department
c/o Conference Technology Enhancements, Inc.
PO Box 783
Elk Grove Village, IL 60009 USA
847/759-4280
Fax 847/759-6980
nans1-reg@cteusa.com

To book your hotel room at Mandalay Bay Resort & Casino, call
877/632-7000 or 702/632-7000 and provide the group code “SNANS” for special rates.

Key Topics Include
• fundamentals and mechanisms
• spinal-cord and peripheral nerve stimulation for chronic pain
• brain stimulation
• clinical trials update
• novel neuromodulation modalities
• sociopolitical forum
• intrathecal therapies
• clinical aspects of autonomic nervous system neurostimulation.

For information regarding exhibits, sponsorship, or satellite symposia, please contact Marty Tobin at 216/445-3449 or tobinm@ccf.org.

New Bill Addressing Treatment of Pain
June Won, MA, Associate Editor

On September 18, 2008, the National Pain Care Policy Act of 2008, an Amendment to H.R. 2994, was passed by the House Energy and Commerce Committee and passed a general vote by the full House of Representatives on September 24. Lois Capps (D-CA) and Mike Rogers (R-MI) cite pain as the leading cause of loss of productivity and temporary and permanent disability and as the most common reason Americans access health care. This bill addresses the barriers people in pain can often face in the proper assessment, diagnosis, treatment, and management of pain by improving on and developing new research, education, training, access, outreach, and care.

The bill creates a partnership between the Secretary of Health and Human Services and the Institute of Medicine of the National Academies to convene an Institute of Medicine Conference on Pain to increase awareness, evaluate the adequacy of pain care and barriers to it, as well as establish an action agenda. The National Institutes of Health (NIH) director will continue to expand the Pain Consortium and research causes and potential treatments for pain. An Interagency Pain Research Coordination Committee will be formed to coordinate efforts between NIH and other federal agencies.

The bill gives the responsibility of collecting and distributing protocols for evidence-based practices to physician specialty groups and academic institutions involved in pain care. The Health Resources and Services Administration (HRSA) is authorized to provide funds ($2 million in 2009, $4 million in 2010 and 2011) to be used for developing and implementing programs that educate and train professionals in the assessment and care of pain. Finally, the bill calls for establishing a national pain-care education outreach and awareness program by June 30, 2009. This campaign, to be developed and implemented by the Secretary of Health and Human Services, will address issues that include pain as a significant national public health problem, the risks of leaving pain unaddressed and untreated, the implications of treatment and management options, and resources available to help in dealing with pain, among others.

The American Pain Foundation is urging action in support of this bill. You can find full-text and a summary of this bill on APF’s Web site, www.painfoundation.org.
Dear Colleagues,

As the final preparations are made for the NANS national meeting, we wanted to take the opportunity to give you a bird’s eye view of the venue. Neuromodulation 2008 New Frontiers will officially kick off on Friday, December 5, 2008, with Joshua P. Prager, MD, as the annual meeting chair and Ali R. Rezai, MD, as the scientific meeting chair.

We will begin with science lectures on the mechanism of neural stimulation. The idea is to lay down the foundations for this technology or modality of treatment, and the session will be chaired by Warren Grill, PhD, and Sean Mackey, MD PhD. The afternoon has two specialty topics as well as a dedicated session to peripheral nerve stimulation—an update by Konstantin Slavin, MD, and Marshal Bedder, MD FRPC(C). Following that, there will be a general update on brain stimulation, chaired by Jaimie M. Henderson, MD, and myself.

On the second day, there will be a brand new session. In the last few years, many new therapies have been actively trialed in the realm of neuromodulation. Along with Andre Machado, MD PhD, I will chair the Clinical Trials Update that focuses on the complexity of issues apparent during the design and execution of a clinical trial. John Farrar, MD, from the University of Pennsylvania will begin the session followed by many clinical scientists who have worked intimately to help run the trials. Later on Saturday, we will have the ceremonial part of our meeting. Dr. Henderson will deliver the NANS Presidential Address. Timothy R. Deer, MD, will deliver a tribute to Sam J. Hassenbusch, MD, and Drs. Rezai and Prager will distribute the Annual Meeting Award Presentations.

Saturday afternoon’s sessions include Novel Neuromodulation Modalities, chaired by Dr. Slavin and Joshua Rosenow, MD, and Neuromodulation: Stem Cells and Gene Therapy Approaches, chaired by Nick Boulis, MD, and Michael Kaplitt, MD. Presentations on Optical Stimulation, TMS/Direct Current Stimulation, Oscillating Field Stimulation for Spinal Cord Injury will be followed by a keynote lecture. Saturday will end with presentations of other issues critical to every physician practicing neuromodulation, including Socio-Political Forum, Ethics in Neuromodulation, Conflict of Interest in Neuromodulation, and Professional Liability in Neuromodulation: Medico-Legal Strategies. An open evening will follow for you to enjoy the entertainment and venues offered by Las Vegas.

Sunday is a shorter day, but the meeting cannot be complete without discussion of intrathecal therapies and the exciting possibilities afforded by stimulation of the autonomic nervous system. Drs. Deer and Prager will chair the intrathecal delivery session, which will include an Overview Algorithm for Admixtures of Intrathecal Medications followed by oral papers on Intrathecal Gabapentin, Evaluation and Treatment of Intrathecal Granulomas, and Opioid-Induced Hyperalgesia. Robert Foreman, PhD, will chair the session on the clinical aspects of Autonomic Nervous System Neurostimulation. We will have interesting presentation on Spinal Cord Stimulation for Angina and Peripheral Vascular Disorder: How to Improve the Outcomes, Neuromodulation for Genitourinary Disorders, Interstitial Cystitis, Pelvic Pain, Urinary Incontinence and Pelvic Floor Disorders, and Stimulation for Visceral Abdominal Pain.

Each day includes lunch symposiums—Neuromodulation Therapies: Behavioral Evaluation and Patient Selection for Better Outcomes: Moving from Simple Considerations to Sophisticated Problems on Friday and Reimbursement Update on Saturday. For the first time, the meeting has a presymposium being offered on Thursday for nurses, physician assistants, and other allied health professionals. Finally, there also will be a sponsored course for fellows focusing on neuromodulation during the premeeting period.

We think this year will again bring an exciting and educational meeting. Both the cutting-edge research in neuromodulation and the scientific merit of the research presented makes our annual meeting the must-attend meeting for those involved in this rapidly expanding field. The NANS Board of Directors wishes to thank all our sponsors for sharing in our success, and we invite all current and future NANS members to join us in Las Vegas for our 12th Annual Meeting December 4–7, 2008, at the Mandalay Bay Hotel and Casino.

Ashwini Sharan, MD
Editor in Chief

What’s Missing?

Is there anything you wish was included in the bi-annual NANS Newsletter? In an effort to continue to make this publication relevant to our members and the field overall, we are seeking your input about what you want to see added to these issues.

Please consider submitting topics regarding research, advocacy, legislation, or any area related to the field of neuromodulation that you believe should be visited and discussed in the bi-annual newsletter. In addition, please provide feedback on what you believe is effective and ineffective in the current format or any other suggestions about what can make this newsletter more valuable and useful for you and your peers.

Contact Associate Editor June Won at jwon@connect2amc.com.
We value your contributions to the newsletter.
Members in the News
Nicholas Boulis, MD
Steve Folowski, MD

Vincent Van Gogh once stated that “great things are not done by impulse, but by a series of small things brought together.” Nicholas Boulis, MD, who now practices at Emory University, is devoting his career to the advancement of functional neurosurgery. It is through his work in the operating room, brought about by his advancements in basic science research, that he hopes to benefit the lives of so many.

We want to extend our congratulations to Dr. Boulis for a number of research grants he has obtained within the last year: These have included grants for remote therapeutic gene delivery for spinal muscular atrophy from the Muscular Dystrophy Association (with co-investigator Jakob Reiser); for gene-based neuromodulation from the NIH/NINDS K02 grant; and for gene-based neuromodulation, awarded by the Howard Hughes Medical Institute.

While in graduate school at Harvard University, he received a Howard Hughes Fellowship and was awarded the Harold Lamport Biomedical Research Prize, for the best graduating thesis from Harvard Medical School in 1994. While performing residency training at the University of Michigan, Dr. Boulis developed research for the application of viral gene therapy to the rat spinal cord. He was rewarded with the Young Investigator Award and The Crudpup Award for his work in vector design and delivery throughout his residency.

Dr. Boulis spent 6 years at the Cleveland Clinic as an expert in movement disorders and deep brain stimulation, in addition to directing his laboratory research for gene-based neuromodulation. He was honored with the Young Neurosurgeons Committee Service Award for his role in treating pediatric neurosurgical patients in Central America by Project Shunt, a not-for-profit organization he founded in 1997.

In 2007, Dr. Boulis received an Early Career Award from the Howard Hughes Medical Institute as assistant professor of neurosurgery at Emory University School of Medicine, which promised $375,000 over a 5-year period in support of his research. He is striving to create methods to manipulate neural activity by gene delivery.

His current research is involved with gene therapies, which he is using to treat those affected by amyotrophic lateral sclerosis (ALS). He has used these therapies in clinical trials in hopes that they will have the potential to stop the massive apoptosis (or cell death) that leads to neuromuscular failure for so many ALS sufferers. An extension of his research involves gene manipulation in the treatment of Parkinson’s and spasticity. He has also begun a gene therapy trial for the treatment of epilepsy.

Dr. Boulis’ preeminence has demonstrated what dedication, hard work, and a belief in the human study of medicine can accomplish. To choose such a path in his life can only inspire others in medicine to follow in his footsteps. We offer our kudos to Dr. Nicholas Boulis. N

Call for Member News
If you or a colleague has recently been honored with an award or other recognition in the field of neuromodulation, the NANS Newsletter would be happy to feature these distinctions. Please submit a description of approximately 400 words detailing the recognition received and biographical information on the recipient, including professional and educational background, to Editor in Chief Ashwini Sharan, MD, at ashwini.sharan@jefferson.edu.

Advocating Neuromodulation continued from page 1

therapies can be! One program about which I am particularly enthusiastic is the hometown radio interview. Throughout the Annual Meeting, we plan to conduct free interviews with NANS members. During each 10-minute session, a professional interviewer will ask a brief set of questions about neuromodulation therapies in your practice and will record your answers. These question-and-answer recordings will then be offered to radio stations in your home market, providing listeners with a newsworthy introduction to a medical topic, which should be of great interest. Interviews will be scheduled on a first-come, first-served basis; we will send out announcements when the sign-up site is ready to go. This is a great way to spread the good news about neuromodulation and increase the visibility of NANS members in their communities.

It is a time of rapid change in neuromodulation. Exciting new therapies are being developed almost daily, while increasing pressure from insurance companies and governing bodies threatens to make these life-changing procedures unavailable for our patients who most need them. With continued hard work from our energetic members, as well as my tireless colleagues on the Executive Committee, we can meet these challenges and continue to bring neuromodulation to the forefront of science and medicine. Any member who wishes to become more active can e-mail me directly at henderj@stanford.edu. Your voice is important! N

Sincerely,

Jamie M. Henderson, MD
NANS President
Meetings of Interest

NANS members are encouraged to attend these meetings of interest presented by other pain, spine, and neurology associations. Please see the following contacts for more information.

**November**
- **2008 Cornell 2nd Pain Medicine Symposium: Evidence-Based Practice and Updates on Pain Medicine**
  - November 8
  - New York, NY
  - www.cornellpainmedicine.com

- **6th International Conference on Pain Control and Regional Anaesthesia**
  - November 12–16
  - Havana, Cuba
  - www.paincontrolandanaesthesia.com

- **Annual Pain Medicine Meeting and Workshops**
  - American Society of Regional Anesthesia and Pain Medicine
  - November 20–23
  - Huntington Beach, CA
  - www.asra.com

**December**
- **NANS 12th Annual Meeting**
  - North American Neuromodulation Society
  - December 4–7
  - Las Vegas, NV
  - www.neuromodulation.org

- **7th Annual Regional Anesthesia and Acute Pain Management Workshop and Symposium**
  - New York School of Regional Anesthesia
  - December 19–20
  - New York, NY
  - www.nysora.com

**January**
- **AAN 2009 Winter Conference**
  - American Academy of Neurology
  - January 16–18
  - Orlando, FL
  - www.aan.com

- **AAPM 25th Annual Meeting**
  - American Academy of Pain Medicine
  - January 28–31
  - Honolulu, HI
  - www.painmed.org

**March**
- **WIP 5th World Conference World Institute of Pain**
  - World Institute of Pain
  - March 13–16
  - New York, NY
  - www2.kenes.com/wip/Pages/home.aspx

- **5th Annual Pain Symposium: Pain Management for the Practicing Physician**
  - The University of Oklahoma Department of Anesthesiology
  - March 21
  - Oklahoma City, OK
  - June-fish@ouhsc.edu

**April**
- **AAN Annual Meeting**
  - American Academy of Neurology
  - April 25–May 2
  - Seattle, WA
  - www.aan.com

*If you would like to include an event in the next issue, please provide the event title, dates, city/state, and contact information to June Won at jwon@connect2amc.com.*

Benefit from INS

Members have access to a variety of benefits you can take advantage of through the International Neuromodulation Society (INS). By visiting INS’s Web site at www.neuromodulation.com, you can connect with members all over the globe, learn about corporate sponsors who operate in the medical technology industry, contact INS board members, or view publication content online. As an INS chapter, NANS provides members with one resource that is particularly valuable for practitioners and researchers—free online subscriptions to INS’s journal, Neuromodulation. Gain access to this publication by visiting www3.interscience.wiley.com/journal/118536370/home. The official journal of INS, Neuromodulation is a peer-reviewed, quarterly publication that was launched in 1998. The most recent issue, published in July 2008, and previous issues dating back to 1999 are available on the publisher’s Web site. Various other educational opportunities and networking events are organized by INS chapters, and you are encouraged to browse these events on INS’s Web site.
December 4–7, 2008
Mandalay Bay Resort & Casino
Las Vegas, NV
www.mandalaybay.com

To register online, visit www.cteus.com/nans1 for the downloadable form.

For information regarding exhibits, sponsorship, or satellite symposia, please contact Marty Tobin at 216/445-3449 or by e-mail at tobinm@ccf.org.

Key topics include
• fundamentals and mechanisms
• spinal cord and peripheral nerve stimulation for chronic pain
• brain stimulation
• clinical trials update
• novel neuromodulation modalities
• socio-political forum
• intrathecal therapies
• clinical aspects of autonomic nervous system neurostimulation.

NANS Newsletter Available Online
Visit www.neuromodulation.org to read current and past issues.

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