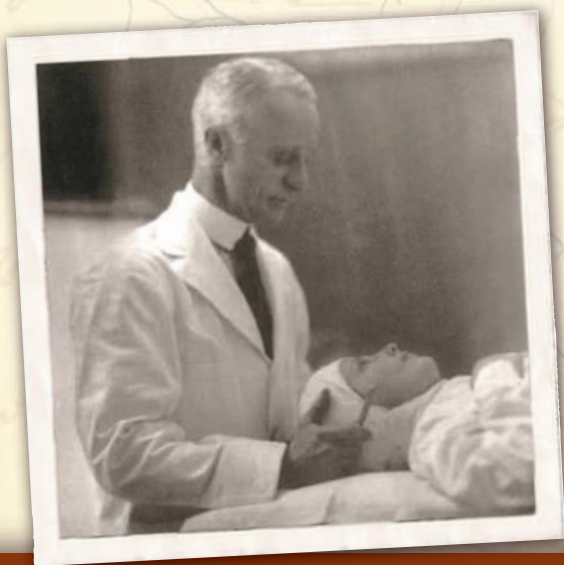


# NEUROSURGERY'S FOUNDING PRINCIPLES

83RD AANS ANNUAL SCIENTIFIC MEETING  
MAY 2-6, 2015 • WASHINGTON, D.C.

A PHYSICIAN IS OBLIGATED TO CONSIDER MORE THAN  
A DISEASED ORGAN, MORE EVEN THAN THE WHOLE MAN  
— HE MUST VIEW THE MAN IN HIS WORLD. —HARVEY CUSHING



*Fig. 2. Coronal Section, viewed from behind, passing through the  
pituitary fossa. To show the relations of the extra-cranial  
clot in Case I; also the relation of the twisted artery and  
cavernous sinus, compressed by the trauma of the fracture,  
and of the oculomotor nerves, injured at the same time.*



American  
Association of  
Neurological  
Surgeons

REGISTRATION BROCHURE

RESPECT • AUTONOMY • INTEGRITY • INNOVATION • DEDICATION

[www.AANS.org/AANS2015](http://www.AANS.org/AANS2015) • #AANS2015



- 3 Letter from AANS President and Scientific Program Chair
- 4 Letter from AANS President, AASNS President and AANS Chair of International Programs
- 5 Week-at-a-Glance
- 7 AANS Opening Ceremonies and Reception
- 8 Invited Lecturers
- 13 Session Tracks
- 17 Saturday
- 29 Sunday
- 42 Monday
- 58 Tuesday
- 76 Wednesday
- 86 Section Activities
- 88 Related Organizations
- 89 Candidate (Resident/Fellow) and Medical Student Programming
- 91 Advanced Practice Providers Programming
- 93 Exhibits/Lunch and Learn Seminars
- 96 Continuing Medical Education
- 98 General Information
- 100 Registration and Housing

# LETTER FROM AANS PRESIDENT AND SCIENTIFIC PROGRAM CHAIR

Dear Colleagues,

It is our great pleasure to invite you to the 83rd American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, taking place May 2-6, 2015, in Washington, D.C. The theme for this meeting is *Neurosurgery's Founding Principles*. Neurosurgery is a constantly-evolving specialty that explores the frontiers of technical and scientific innovation. However, neurosurgery also has a rich history and adheres to principles that must not be discarded, particularly in a time of turbulent changes in our health care system. Our society, founded as the Harvey Cushing Society, honors a founder who embodied the core principles we must not allow to fade with time.

We call neurosurgical professionals from around the world to join the AANS in Washington, D.C., to renew a commitment to these founding principles of neurosurgery: respect, autonomy, integrity, innovation and dedication. We want this meeting to remind every neurosurgeon why he or she chose this profession.

## INVITED SPEAKERS

We hope you will join us to hear accomplished professionals from outside the realm of neurosurgery for thought-provoking lectures. The AANS is proud to welcome **Charles Krauthammer, MD**, a Pulitzer Prize-winning columnist and political commentator as our Cushing Orator. The Louise Eisenhardt Lecturer, **Sally Satel, PhD**, will speak on the use and misuse of neuroscience. **Jonathan Turley**, one of the nation's foremost constitutional scholars, will speak to us about some of the founding principles of the United States, and, **James Capretta**, a fellow of the American Enterprise Institute and former associate director of the White House Office of Management and Budget, will speak on market-based alternatives to the Affordable Care Act. Finally, geneticist **Spencer Wells, PhD**, will speak to us about his experience building the first-ever map of human migration, as director of the Genographic Project.

## OPENING CEREMONIES, RECEPTION AND SOCIAL EVENTS

The AANS invites you to take part in the Opening Ceremonies, featuring NFL quarterback **Peyton Manning** and NBA Hall-of-Famer **Bill Walton**. The Opening

Reception will be held at the Smithsonian's National Museum of American History. We hope you can also attend the International Reception at the Potomac View Terrace, to share some time with international neurosurgeons while enjoying Washington, D.C.'s majestic evening skyline.

## NEW PRACTICAL CLINICS AND BREAKFAST SEMINARS

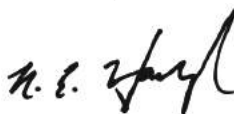
The AANS Annual Scientific Meeting offers the opportunity for hands-on guidance from some of the most accomplished teachers and thought leaders in neurosurgery. New Practical Clinics for 2015 include workshops for stereotactic and functional neurosurgery; EVD insertions; implementing pain management into your spine practice; and advanced endovascular neurosurgery. New Breakfast Seminars highlight endovascular complications, difficult shunt cases, retirement planning and other timely topics.

## ACCESS TO INDUSTRY LEADERS

Collaboration between industry and neurosurgeons is responsible for much of the innovation in neurosurgery's history. Take this opportunity to visit more than 200 exhibiting companies in the AANS Annual Scientific Meeting Exhibit Hall.

The 83rd AANS Annual Scientific Meeting offers a variety of opportunities for neurosurgeons practicing in all areas of neurosurgery. We will also be offering unique educational opportunities for medical students, residents, fellows, nurse practitioners and physicians' assistants. We hope to see you in Washington, D.C., to reflect on *Neurosurgery's Founding Principles* and be inspired to make neurosurgery even better in the years ahead.

Sincerely,



Robert E. Harbaugh, MD, FAANS  
AANS President



Regis W. Haid Jr., MD, FAANS  
2015 Annual Scientific Meeting Chair



# LETTER FROM AANS PRESIDENT, AASNS PRESIDENT AND AANS CHAIR OF INTERNATIONAL PROGRAMS



Dear Colleagues,

On behalf of the officers of the American Association of Neurological Surgeons (AANS) and the Asian Australasian Society of Neurological Surgeons (AASNS), it is our pleasure to feature a collaboration between our organizations during the 2015 AANS Annual Scientific Meeting in Washington, D.C.

Some of the most renowned neurosurgeons from the Asian and Australasian region will be highlighted in the meeting's scientific program, along with our North American colleagues. Members of AASNS member societies who choose to attend the meeting may register at the AANS member rate.

The 2015 AANS Annual Scientific Meeting includes events for neurosurgeons from every part of the world, including world-class educational programming, networking opportunities and an International Reception to welcome our international attendees.

We are delighted to have this opportunity to spotlight the issues and latest knowledge in the international field of neurosurgery. We look forward to welcoming you to Washington, D.C., in May 2015.

Sincerely,



Robert E. Harbaugh, MD, FAANS  
*President, AANS*



Andrew H. Kaye, MD  
*President, AASNS*



Christopher K. Loftus, MD, FAANS  
*Chair of International Programs, AANS*

# WEEK AT-A-GLANCE

## FRIDAY, MAY 1

|          |                   |
|----------|-------------------|
| 5-7 p.m. | AANS Registration |
|----------|-------------------|

## SATURDAY, MAY 2

|                     |                                               |
|---------------------|-----------------------------------------------|
| 6:30 a.m.-5:30 p.m. | AANS Registration                             |
| 8 a.m.-5 p.m.       | All-Day Practical Clinics (001-004)           |
| 8 a.m.-12 p.m.      | Morning Practical Clinics (005-012)           |
| 8 a.m.-12 p.m.      | Advanced Practice Providers Plenary Session I |
| 1-5 p.m.            | Afternoon Practical Clinics (013-020, 038)    |

## SUNDAY, MAY 3

|                      |                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-6:30 p.m.  | AANS Registration                                                                                                                          |
| 7:30 a.m.-4:30 p.m.  | All-Day Practical Clinics (021-022)                                                                                                        |
| 7:30 a.m.-4:30 p.m.  | International Symposium                                                                                                                    |
| 7:30-11:30 a.m.      | Morning Practical Clinics (023-029)                                                                                                        |
| 7:30-11:30 a.m.      | Advanced Practice Providers Plenary Session II                                                                                             |
| 12:30 p.m.-4:30 p.m. | Afternoon Practical Clinics (024, 028, 030-039)                                                                                            |
| 1-4:30 p.m.          | Young Neurosurgeons Research Forum <ul style="list-style-type: none"> <li>• <i>Osler Lecture</i><br/>A. John Popp, MD, FAANS(L)</li> </ul> |
| 5-7:15 p.m.          | AANS Opening Ceremonies <ul style="list-style-type: none"> <li>• Peyton Manning</li> <li>• Bill Walton</li> </ul>                          |
| 7:45-9:45 p.m.       | AANS Opening Reception at the Smithsonian's National Museum of American History                                                            |

## MONDAY, MAY 4

|                  |                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-4 p.m. | AANS Registration                                                                                                                                                                                                                                                                                                                                                                     |
| 7-9 a.m.         | Breakfast Seminars (101-128)                                                                                                                                                                                                                                                                                                                                                          |
| 9 a.m.-4 p.m.    | AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                                     |
| 9-9:45 a.m.      | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                       |
| 9:30-9:45 a.m.   | Historical Vignettes: Cushing/Washington                                                                                                                                                                                                                                                                                                                                              |
| 9:45 a.m.-1 p.m. | Plenary Session I <ul style="list-style-type: none"> <li>• <i>Hunt-Wilson Lecture</i><br/>Jonathan Turley</li> <li>• <i>Richard C. Schneider Lecture</i><br/>Frederic B. Meyer, MD, FAANS</li> <li>• <i>AANS Presidential Address</i><br/>Robert E. Harbaugh, MD, FAANS</li> </ul>                                                                                                    |
| 1-2 p.m.         | Lunch in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                        |
| 1:15-2 p.m.      | Lunch and Learn Seminars<br><i>Non-CME Event</i>                                                                                                                                                                                                                                                                                                                                      |
| 1:15-2:45 p.m.   | Advanced Practice Providers Luncheon                                                                                                                                                                                                                                                                                                                                                  |
| 2-3:30 p.m.      | Operative Nuances I: Tracking Challenging Cases 3D Video Presentation                                                                                                                                                                                                                                                                                                                 |
| 2-5:30 p.m.      | Scientific Sessions I-VI <ul style="list-style-type: none"> <li>• Scientific Session I: Tumor</li> <li>• Scientific Session II: Spine</li> <li>• Scientific Session III: Stereotactic and Functional Surgery</li> <li>• Scientific Session IV: Pediatrics</li> <li>• Scientific Session V: Cerebrovascular</li> <li>• Scientific Session VI: Neurotrauma and Critical Care</li> </ul> |
| 3:30-4 p.m.      | Afternoon Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                     |
| 5:30-6:30 p.m.   | AANS Annual Business Meeting                                                                                                                                                                                                                                                                                                                                                          |

## WEEK AT-A-GLANCE CONTINUED

|                |                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30-8:30 p.m. | Dinner Symposium <ul style="list-style-type: none"> <li>• Low-grade Glioma at Fiola</li> <li>• Spinal Balance/Deformity at Bobby Vans' Steakhouse</li> <li>• Contemporary Practice and New Frontiers in Stereotactic Radiosurgery at Occidental Grill &amp; Seafood</li> <li>• Aneurysm Management: An Evening Debate from a Global Perspective at Brasserie Beck</li> </ul> |
| 6-9:30 p.m.    | AANS History Section Dinner at George Washington's Mount Vernon                                                                                                                                                                                                                                                                                                              |
| 8-9:30 p.m.    | AANS International Reception at the Potomac View Terrace                                                                                                                                                                                                                                                                                                                     |

## TUESDAY, MAY 5

|                  |                                                                                                                                                                                                                                                                                                         |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-4 p.m. | AANS Registration                                                                                                                                                                                                                                                                                       |
| 7-9 a.m.         | Breakfast Seminars (201-228)                                                                                                                                                                                                                                                                            |
| 9 a.m.-4 p.m.    | AANS Exhibit Hall                                                                                                                                                                                                                                                                                       |
| 9-9:45 a.m.      | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                         |
| 9:30-9:45 a.m.   | Historical Vignettes: Horsley/Jefferson                                                                                                                                                                                                                                                                 |
| 9:45 a.m.-1 p.m. | Plenary Session II <ul style="list-style-type: none"> <li>• <i>Theodore Kurze Lecture</i> James C. Capretta</li> <li>• <i>Cushing Orator</i> Charles Krauthammer, MD</li> </ul>                                                                                                                         |
| 1-2 p.m.         | Lunch in the AANS Exhibit Hall                                                                                                                                                                                                                                                                          |
| 1:15-2 p.m.      | Lunch and Learn Seminars<br><i>Non-CME Event</i>                                                                                                                                                                                                                                                        |
| 1:15-2:45 p.m.   | Young Neurosurgeons Luncheon                                                                                                                                                                                                                                                                            |
| 2-3:30 p.m.      | Operative Nuances II: Complication Avoidances 3D Video Presentation                                                                                                                                                                                                                                     |
| 2-5:30 p.m.      | Section Sessions <ul style="list-style-type: none"> <li>• AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Spine Section Session</li> <li>• AANS/CNS Section on Pain</li> <li>• AANS/CNS Section on Pediatric Neurological Surgery</li> <li>• AANS/CNS Section on Tumors I</li> </ul> |

- AANS/CNS Section on Women in Neurosurgery
  - AANS Section on History of Neurological Surgery
- 
- Advancements in Neurotrauma Care
- 
- 3:30-4 p.m. Afternoon Beverage Break in the AANS Exhibit Hall
- 
- 6:30-8:30 p.m. Dinner Symposium
- Concussion at Joe's Seafood, Prime Steak & Stone Crab
  - Minimally Invasive Surgery at 1789

## WEDNESDAY, MAY 6

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-3:30 p.m. | AANS Registration                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7-9 a.m.            | Breakfast Seminars (301-322)                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7:30-9 a.m.         | AANS/CNS Section on Women in Neurosurgery (WINS) Breakfast                                                                                                                                                                                                                                                                                                                                                                        |
| 9 a.m.-2:15p.m.     | AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9-9:45 a.m.         | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                                                   |
| 9:30-9:45 a.m.      | Historical Vignettes: Leksell/Franklin                                                                                                                                                                                                                                                                                                                                                                                            |
| 9:45 a.m.-1 p.m.    | Plenary Session III <ul style="list-style-type: none"> <li>• <i>Louise Eisenhardt Lecture</i> Sally Satel, MD</li> <li>• <i>Rhoton Family Lecture</i> Spencer Wells, PhD</li> <li>• <i>Van Wageningen Lecture</i></li> </ul>                                                                                                                                                                                                      |
| 1-2 p.m.            | Lunch in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2-5 p.m.            | Section Sessions <ul style="list-style-type: none"> <li>• AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Peripheral Nerves Section Session</li> <li>• AANS/CNS Cerebrovascular Section</li> <li>• AANS/CNS Section on Neurotrauma and Critical Care</li> <li>• AANS/CNS Section on Stereotactic and Functional Surgery</li> <li>• AANS/CNS Section on Tumors II</li> <li>• AANS/CSNS Socioeconomic</li> </ul> |

# AANS OPENING CEREMONIES AND RECEPTION

## AANS OPENING CEREMONIES

5-7:15 p.m. | THE WALTER E. WASHINGTON CONVENTION CENTER



### INVITED SPEAKER: PEYTON MANNING

Denver Broncos quarterback Peyton Manning, the league's only five-time MVP and a 13-time Pro Bowl selection, has earned his place among the NFL's greatest quarterbacks. Manning owns the second-most wins, passing yards, touchdown passes, completions, and attempts by a quarterback in NFL history.

He compiled the best statistical season by a quarterback in NFL history during the 2013 campaign, setting single-season records for passing yards and touchdown passes. Manning helped the Broncos become the most prolific offense in NFL history, setting a league single-season record for points scored while extending his NFL record with his fifth Most Valuable Player Award from the Associated Press. He was also named Sportsman of the Year by *Sports Illustrated*.

### INVITED SPEAKER: BILL WALTON

Bill Walton, former NBA player, Naismith Basketball Hall of Fame inductee and current sports broadcaster, began his career playing college basketball for John Wooden at the University of California, Los Angeles (UCLA) in the early '70s, where he won three straight College Player of the Year Awards playing for the UCLA Bruins, ultimately leading the team to two Division I national titles. After his college career, he went on to become the number one overall pick in the 1974 NBA Draft, playing for the Portland Trail Blazers, whom he led to the 1977 NBA title.



He was also named a league Most Valuable Player, won two NBA championships, and was inducted into the Naismith Memorial Basketball Hall of Fame in 1993.

After 30 years of exhaustive treatment for foot, leg, and back pain, Walton's chronic back pain forced him to undergo minimally disruptive spine surgery, which led him to serve as a Patient Ambassador and spokesman for The Better Way Back, a patient support and education program.

## AANS OPENING RECEPTION

7:45-9:45 p.m. | THE SMITHSONIAN'S NATIONAL MUSEUM OF AMERICAN HISTORY

Through unique collections and archives, rigorous research and dynamic public outreach, The National Museum of American History explores the immeasurable richness and complexity of American history by collecting and preserving more than three million artifacts. From Abraham Lincoln's top hat to Dorothy's ruby slippers from *The Wizard of Oz*, the National Museum of American History showcases a fascinating assortment of American culture and history, promising to be a spectacular venue for the 2015 AANS Opening Reception.



# INVITED LECTURERS

**TUESDAY, MAY 5**  
**PLENARY SESSION II**

## **CUSHING ORATOR – CHARLES KRAUTHAMMER, MD**

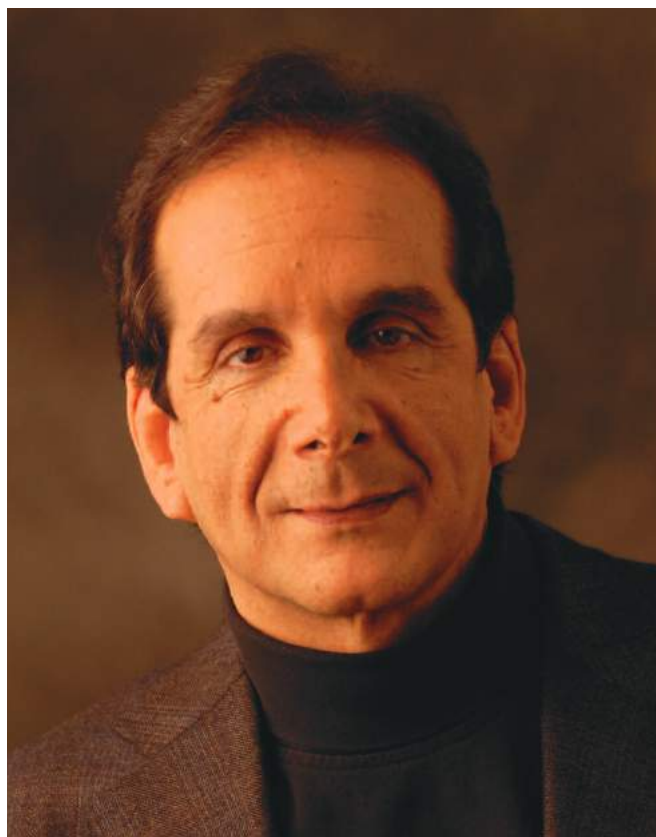
*In 1965 when the AANS was still the Harvey Cushing Society, the board directed that each year an invitation be extended to “one eminent in human affairs,” to deliver the Cushing Oration at the Annual Scientific Meeting. The Oration honors Dr. Harvey Cushing, whose own “wide range of interests went far beyond the operating suite.”*

Charles Krauthammer, a Pulitzer Prize-winning syndicated columnist, political commentator and former physician, is known for his bold and original writing. Since 1985, Krauthammer has written a syndicated column for *The Washington Post*, for which he won the 1987 Pulitzer Prize for distinguished commentary, and is currently published weekly in more than 350 newspapers worldwide.

Krauthammer is also a contributing editor to *The Weekly Standard*. In addition he was a weekly panelist on *Inside Washington* until the show ended and is currently a contributor to FOX News where he appears nightly on Special Report with Bret Baier.

Krauthammer's influential writing has helped frame the shape of American foreign policy. He coined and developed *The Reagan Doctrine* (*TIME*, April 1985), defined the structure of the post-Cold War world in *The Unipolar Moment* (*Foreign Affairs*, Winter 1990/1991), and outlined the principles of post-9/11 American foreign policy in his much-debated Irving Kristol Lecture, *Democratic Realism* (AEI press, March 2004).

Born in New York City and raised in Montreal, Krauthammer was educated at McGill University (BA, 1970), Oxford University (Commonwealth Scholar in Politics) and Harvard University, where he received his MD in 1975. As a resident, and later chief resident, in psychiatry at Massachusetts General Hospital, Krauthammer published several scientific papers — including the discovery of a form of bipolar disorder, which continues to be cited in psychiatric literature.



In 1978, Krauthammer quit practicing medicine and came to Washington, D.C. to help direct planning in psychiatric research in the Carter administration. He then began contributing articles to *The New Republic* and served as a speech writer to then-Vice President Walter Mondale. In 1981, Krauthammer joined *The New Republic* as a writer and editor, and his writings won the 1984 National Magazine Award for Essays and Criticism, the highest award in magazine journalism.

In 2006, *The Financial Times* named Krauthammer the most influential commentator in America. Dr. Krauthammer has influenced U.S. foreign policy for more than two decades, and in 2013 he received the William F. Buckley Award for Media Excellence. Krauthammer is also the president of The Krauthammer Foundation, chairman of Pro Musica Hebraica, an organization dedicated to the recovery and performance of lost classical Jewish music, and is a member of the Chess Journalists of America.

**SUNDAY, MAY 3**  
**YOUNG NEUROSURGEONS RESEARCH FORUM**

**OSLER LECTURE –**  
**A. JOHN POPP, MD, FAANS(L)**

A. John Popp, MD, FAANS(L), graduated from the University of Rochester. He received his medical degree from the Albany Medical College. Dr. Popp completed one year of general surgery residency at the Albany Medical Center Hospital and afterward was commissioned as captain in the U.S. Air Force, serving at Tachikawa Hospital in Japan. Upon completion of his military service, Dr. Popp returned to Albany Medical Center to complete his neurosurgical residency training.



Promoted to the rank of professor of surgery in 1985, Dr. Popp was named head of the division of neurosurgery and, subsequently, was appointed as the chairman of the department of surgery at Albany Medical College, serving from 1986-2004. After completing his service as chair of surgery, he continued as director of the Neurosciences Institute. In 2009, Dr. Popp joined the faculty at Harvard Medical School and Brigham and Women's Hospital where he was appointed department chairman in 2010. In 2013, he joined the faculty at Stanford Medical School where he served as Vice Chairman for Strategic Planning and Development and as Chief Medical Officer of the Neuroscience Initiative. Having served in a variety of leadership roles in organized neurosurgery during his career, Dr. Popp currently serves as secretary of the Neurosurgical Research and Education Foundation. In 2013, he completed his two-year term as president of the World Academy of Neurological Surgeons. A past-president of the American Association of Neurological Surgeons (AANS), in 2011, Dr. Popp was awarded the Harvey Cushing Medal by the AANS for his lifetime service to neurosurgery and the association. During his career, Dr. Popp served as Residency Training Director for 28 years while at Albany Medical Center and Brigham and Women's Hospital.

**MONDAY, MAY 4**  
**PLENARY SESSION I**

**AANS PRESIDENTIAL ADDRESS –**  
**ROBERT E. HARBAUGH, MD, FAANS**

President of the American Association of Neurological Surgeons (AANS), Robert E. Harbaugh, MD, FAANS, is a Chairman and Distinguished Professor at the Milton S. Hershey Medical Center's Department of Neurosurgery and the Penn State College of Medicine. In addition to his leadership in the AANS, Dr. Harbaugh also has held numerous leadership positions in other organizations — including the American Board of Neurological Surgery, where he is presently a director. Dr. Harbaugh also is a member on the National Football League's Injury Surveillance and Head, Neck, and Spine Committees.



**MONDAY, MAY 4**  
**PLENARY SESSION I**

**HUNT-WILSON LECTURE –**  
**JONATHAN TURLEY**

*The Hunt-Wilson Lecture is made possible thanks to an endowment established by Timir Banerjee, MD, FAANS(L), in honor of his mentors, William Hunt, MD; and Charles Wilson, MD.*

Jonathan Turley is a lawyer, legal scholar, legal analyst and professor. Recognized as one of the nation's top legal advocates, Professor Turley has written on topics ranging from constitutional law to legal theory. Additionally, he has represented clients spanning from spies, to federal judges and members of Congress.



Professor Turley's articles on legal and policy issues appear regularly in national publications such as in the *New York Times*, *Washington Post*, *USA Today*, *Los Angeles Times* and *The Wall Street Journal*. In 2005, he was given the Columnist of the Year award for Single-Issue Advocacy for his columns on civil liberties. Professor Turley also appears regularly as an on-air legal analyst for NBC News and CBS News. Additionally, his award-winning blog was selected as the top Legal Opinion Blog of 2011 in the *ABA Journal* competition and it also was previously selected as the top Law Professor Blog and Legal Theory Blog.

In 2008, Professor Turley was given an honorary Doctorate of Law from the John Marshall Law School for his contributions to civil liberties and the public interest. He currently teaches courses on constitutional law, constitutional criminal law, environmental law, litigation and torts.

## **MONDAY, MAY 4 PLENARY SESSION I**

### **RICHARD C. SCHNEIDER LECTURE – FREDRIC B. MEYER, MD, FAANS**

*The Richard C. Schneider Lecture is made possible thanks to an endowment established by the University of Michigan and Julian T. "Buz" Hoff, MD.*

Fredric B. Meyer, MD, FAANS is professor of neurosurgery at the Mayo Clinic College of Medicine, chair of the department of neurologic surgery, and the Alfred Uihlein Family Professor in neurologic surgery. He graduated from the University of Pennsylvania in 1977, received his MD from Boston University in 1981, and received his neurosurgery residency training at the Mayo Graduate School of Medicine from 1981-1988.



He joined the Mayo Clinic faculty in 1988 as a consultant in neurologic surgery and became chair of the department in 2004. He received the Mayo Foundation Distinguished Educator Award in 2011. Dr. Meyer has over 300 published articles in peer reviewed journals, four books, and 55 book chapters. He is chair of the American Board of Neurological Surgery (ABNS) and is currently president of the American Academy of Neurological Surgery (AANS) for 2013-2014. Dr. Meyer has recently been named the Mayo Foundation Enterprise Chair of Neurosurgery.

## **MONDAY, MAY 4 SCIENTIFIC SESSION I: TUMOR**

### **RONALD L. BITTNER LECTURE – JOHN H. SAMPSON, MD, PhD, FAANS**

John H. Sampson, MD, PhD, MHSc, MBA, FAANS, earned his medical degree from the University of Manitoba in Winnipeg, Canada. He completed an internship in general surgery at Duke University under Dr. David C.



Sabiston, followed by a residency in neurosurgery and a fellowship in neurological intensive care, both also at Duke. Then, under the mentorship of both Darell D. Bigner, MD, PhD, the director of The Preston Robert Tisch Brain Tumor Center at Duke, and Nobel Laureate Gertrude B. Elion, he received a PhD in neuro-immunology and brain tumor immunotherapy. After completing his training, Dr. Sampson became assistant professor in surgery within the division of neurosurgery at Duke University. He was board-certified in neurological surgery in 2002 and promoted to associate professor in surgery in 2003. In 2010, he became the Robert H. and Gloria Wilkins Distinguished Professor of Surgery. While developing his clinical practice as a junior faculty member, Dr. Sampson also pursued formal studies in the Duke Clinical Research Training Program and completed the coursework for its formal MHSc degree program. Most recently, he completed his MBA at the Fuqua School of Business. Dr. Sampson has developed a busy clinical practice, as well as maintained a highly successful laboratory focused on the areas of drug delivery to the brain and immunotherapy of brain tumors.

## **MONDAY, MAY 4 SCIENTIFIC SESSION IV: PEDIATRICS**

### **MATSON LECTURE – MARK WIETecha**

Mark Wietecha is president and chief executive officer of Children's Hospital Association, representing more than 220 hospital organizations and pediatric programs dedicated to improving child health. Prior to joining the Children's Hospital Association, Wietecha was the executive chairman of Kurt Salmon



Associates, overseeing a global consulting firm of more than 2,000 professionals serving clients on five continents. A regular presenter on the future of health care and cited in media outlets, such as the *New York Times*, *Wall Street Journal* and National Public Radio, Wietecha has served as a strategic advisor to most of the *U.S. News & World Report* "Best" medical centers, including the majority of the nation's top children's hospitals. He has been named among the country's "Most Influential Consultants" by Consulting Magazine and as one of the "5 Healthcare Leaders to Know" by *Becker's Review*. He also currently serves on the boards of the Council of Teaching Hospitals and Health Systems (COTH) of the Association of American Medical Colleges; the Coalition to Protect America's Health Care; Virtual PICU Systems, LLC, where he is the current board chair; and UCLA Health System's

Board of Overseers, where he is the current chair. Wietecha's training includes a Master of Science from The Ohio State University and a Master of Business Administration from Indiana University.

## **TUESDAY, MAY 5** **PLENARY SESSION II**

### **THEODORE KURZE LECTURE – JAMES C. CAPRETTA**

*The Theodore Kurze Lecture is made possible thanks to an endowment established by Dr. John J. and Mrs. Mary Guarnaschelli to honor and recognize his mentor.*

James C. Capretta, a senior fellow at the Ethics and Public Policy Center and a visiting fellow at the American Enterprise Institute, served for nearly 16 years in senior positions in the executive and legislative branches of the federal government.



From 2001 to 2004, he served as an associate director at the White House Office of Management and Budget (OMB), where he was responsible for programs such as Medicare, Medicaid, Social Security, education and welfare. Prior to his position at the OMB, Mr. Capretta spent the previous decade at the Senate Budget Committee as a senior analyst for health care and entitlement policy.

As a national advocate for market-based reforms of U.S. health care, Mr. Capretta's articles and essays have appeared in a variety of print and online publications, and he regularly appears as a commentator on TV and radio programs.

## **TUESDAY, MAY 5** **AANS/CNS SECTION ON PAIN**

### **JOHN LOESER LECTURE – ELLIOT S. KRAMES, MD**

Elliot S. Krames, MD, is a board-certified anesthesiologist who has practiced pain medicine solely for the past 20 years. One of the leading experts in the field of intraspinal analgesia, he is a worldwide recognized leader and educator in the field of neuromodulation for pain control. He has written extensively on implantable technologies for pain management and has conducted national and international symposia related to this topic.



For more than 15 years, Dr. Krames has been the medical director of Pacific Pain Treatment Centers in the San Francisco Bay area, an organization of pain clinics dedicated to interdisciplinary pain medicine. He is cofounder of the National Pain Foundation, as well as a founding member of the American Neuromodulation Society, and he participates on the boards of the International and American Neuromodulation Societies, World Institute of Pain, and the American Academy of Pain Medicine.

## **WEDNESDAY, MAY 6** **PLENARY SESSION III**

### **RHOTON FAMILY LECTURE – SPENCER WELLS, PHD**

*The Rhoton Family Lecture is made possible thanks to an endowment established by Albert L. Rhoton Jr., MD, FAANS(L), in honor of his family.*

Spencer Wells is a geneticist, author and documentary filmmaker who has dedicated his career to studying humankind's family tree; aiming to create the first-ever map of human migration in order to document how humans came to populate the planet. As a director of the Genographic Project, a genetic anthropology study (led by the National Geographic Society and IBM), Wells is working with a team to map historical human migration patterns by collecting and analyzing DNA samples from people around the world. In collaboration with other scientists, Wells hopes to capture an invaluable genetic snapshot of humanity before modern-day influences erase it.



After getting his degree in biology at the University of Texas, where he enrolled at age 16 and graduated three years later, Wells obtained his PhD at Harvard University. Beginning in 1994, he conducted post-doctoral training at Stanford University, where he began to study genetic diversity in indigenous populations. Later on, he participated in field studies located in Asia and the former Soviet republics. His research studies have led to advances in the understanding of the male Y chromosome, and its ability to trace ancient human migration patterns. Wells also spent time at Oxford University, where he served as the director of the Population Genetics Research Group of the Wellcome Trust Centre for Human Genetics.

## WEDNESDAY, MAY 6

### PLENARY SESSION III

#### LOUISE EISENHARDT LECTURE – SALLY SATEL, MD

Sally Satel, MD, a practicing psychiatrist and lecturer at the Yale University School of Medicine, examines mental health policy as well as political trends in medicine. Her articles have been published in *The New Republic*, the *Wall Street Journal*, the *New York Times*, the *Huffington Post*, and in scholarly publications such as *Policy Review* and the *American Enterprise Institute (AEI)*.



Dr. Satel earned her BS from Cornell University, her MS from the University of Chicago, her MD from Brown University and completed her residency in psychiatry at Yale University. She has served on the Labor and Human Resources Committee in the U.S. Senate as the Robert Wood Johnson Health Policy Fellow, participated as a member on the Fowler Commission to review sexual misconduct allegations at the U.S. Air Force Academy, participated as a member on the National Advisory Council for the Center for Mental Health Services, and is currently a staff psychiatrist for Partners in Drug Use Rehabilitation and Counseling.

## WEDNESDAY, MAY 6

### AANS/CNS SECTION ON SPINE AND PERIPHERAL NERVES – PERIPHERAL NERVE SECTION SESSION

#### KLINE LECTURE – THOMAS M. BRUSHART, MD

Thomas M. Brushart, MD, is professor of orthopaedic surgery, plastic surgery and neurology at Johns Hopkins University. He serves the department of orthopaedic surgery as chief of the division of hand surgery. Dr. Brushart was educated at Harvard College and Harvard Medical School, and is a graduate of the Harvard Combined Orthopaedics Program. He received hand fellowship training at the Raymond Curtis Hand Center, where he worked for 13 years before joining the faculty at Johns Hopkins. Dr. Brushart has devoted his research career to the study of mechanical and humoral factors that influence the specificity of peripheral nerve



regeneration. His contributions include the description and analysis of Preferential Motor Reinnervation, the development of novel techniques of retrograde axonal tracing and their application to peripheral nerve connectivity, and the use of electrical stimulation to enhance nerve regeneration. His most recent work has identified substantial differences between sensory and motor nerve that result in their support of regeneration on a modality-specific basis. The 1990 recipient of the Sterling Bunnell Fellowship of the American Society for Surgery of the Hand, he served as president of the Sunderland Peripheral Nerve Society in 2001-2002, and is the recipient of the 2008 Hanno Millesi Award for peripheral nerve research. "Nerve Repair," Dr. Brushart's translational analysis of the field, supported by a grant from the National Library of Medicine, was published by Oxford University Press in May 2011.



# SESSION TRACKS

## CEREBROVASCULAR TRACK



### PRACTICAL CLINICS

- 001 Introduction to Cerebrovascular Neurosurgery for Residents (page 18)
- 005 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management (page 20)
- 007 Nuts and Bolts of Posterior Fossa Surgery: How I Do It (page 21)
- 008 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base (page 21)
- 017 How to Tackle Difficult Cranial Cases: A Step-by-step 3D Case-based Presentation (page 25)
- 034 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base (page 36)
- 038 State-of-the-Art: Cranial Endoscopy (page 27)
- 039 Advanced Endovascular Neurosurgery (page 38)

### BREAKFAST SEMINARS

- 108 Management of Vasospasm (page 45)
- 113 Controversies in Cerebrovascular and Endovascular Neurosurgery (page 47)
- 123 "Rock and a Hard Place:" Management of Endovascular Neurosurgical Quandaries for the General Neurosurgeon (page 50)
- 124 Endovascular Management of Open Neurosurgical Complications (page 50)
- 125 Selecting Anterior Approaches for Cerebrovascular Surgery: From Eyebrow to OZ – Pros and Cons of Minimally Invasive "Keyhole" Approaches for Cerebrovascular Surgery (page 51)
- 127 Emerging Indications in Neuromodulation Surgery (page 52)
- 206 Surgical Approaches to the Lateral Skull Base (page 61)

- 213 Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery (page 64)
- 216 If I Could Do That Case Over Again: Discussion of Complications of Cranial Surgery (page 65)
- 222 Endovascular vs. Microsurgical Techniques for the Optimal Treatment of Intracranial Aneurysms (page 67)
- 226 Multidisciplinary Management of Cerebral AVMs (page 68)
- 227 Complication Management and Avoidance in Vascular Neurosurgery (page 68)
- 304 Intracranial Endoscopy (page 78)
- 309 Cavernous Malformation: Current Controversies in Management (page 79)
- 314 Contemporary Management for Adult Hydrocephalus (page 81)
- 320 Cerebral Venous System: Surgical Considerations (page 82)

## HISTORY TRACK



### BREAKFAST SEMINAR

- 126 David Ferrier, Cerebral Localization, and the Origins of Brain Surgery (page 51)
- 321 Neurosurgery, Psychiatry and Function: The History of Altering Behavior, Thought and Function Through Neurosurgery (page 83)





## NEUROTRAUMA TRACK



### PRACTICAL CLINICS

- 002 Current Treatments and Controversies in Traumatic Brain Injury (page 18)
- 014 Neurosurgeon Team Physician (page 24)
- 020 Spine Management in the Aging Population (page 27)
- 024 EVD Insertions: Hands-on Practicum Course (page 33)
- 032 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon (page 35)

### BREAKFAST SEMINARS

- 102 Return-to-play After Sports Injury I: Concussion (page 43)
- 119 Cerebral Trauma: State-of-the-art Treatment (page 48)
- 202 Definition and Diagnosis of Brain Death (page 59)
- 220 Open vs. Endoscopic Approaches to the Anterior Skull Base (page 66)
- 312 Controversies in the Management of Intracerebral Hematomas (page 80)

### ADDITIONAL SESSIONS

- Advancements in Neurotrauma Care (page 73)
- SE131: Concussion (page 74)

## PAIN TRACK



### PRACTICAL CLINIC

- 012 Integrating Pain into Your Spine Practice (page 23)

### BREAKFAST SEMINAR

- 111 Neurosurgical Management of Intractable Pain (page 46)

## PEDIATRICS TRACK



### BREAKFAST SEMINARS

- 103 Spasticity Management (page 44)
- 128 Management of Pediatric Epilepsy (page 52)
- 215 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors (page 65)
- 304 Intracranial Endoscopy (page 78)
- 308 Principles and Techniques of Deformity Correction in Adolescents and Young Adults (page 79)

## SOCIOECONOMIC TRACK



### PRACTICAL CLINICS

- 003 Invention and Innovation in Neurosurgery (page 19)
- 016 Applications of Video and 3D Technology in Neurosurgery (page 25)
- 022 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example (page 30)
- 023 Goodman Oral Board Review (page 31)
- 025 Negotiating Strategies in Neurosurgery (page 31)
- 029 Incorporation of Electronic Technology to Improve Clinical Practice: Current Uses and Future Directions (page 33)
- 037 MOC Prep Course (page 38)

### BREAKFAST SEMINARS

- 101 ABNS Board Preparation: What You Must Know (page 43)
- 110 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices (page 46)
- 114 Beginning Your Academic Career: Answers to Your Questions (page 47)

## SOCIOECONOMIC TRACK



- 121 Professional Issues: Challenges and Opportunities for the Neurosurgical Advanced Practice Provider (page 49)
- 122 Lumbar Spine Fusion Indications and Complications (page 49)
- 203 Skating to Where the Puck Will Be: Strategies for Neurosurgery Practices and Programs to Compete in Health Care's Future (page 60)
- 204 Medical Liability I: "So You've Been Sued: What Now?" (page 60)
- 205 Humanitarian Neurosurgery (page 61)
- 209 Developing New Technology: Bringing Device to Market (page 62)
- 211 Measuring Outcomes and Safety in Neurosurgery (page 63)
- 301 How to Write and Publish a Successful Neurosurgical Manuscript (page 77)
- 317 Getting the Most out of Your Residency (page 81)

## SPINE TRACK



### PRACTICAL CLINICS

- 006 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents (page 20)
- 009 Advanced MIS: Lateral Transposas Reconstruction (page 22)
- 011 Update on the Management of Spine and Spinal Cord Injury (page 22)
- 012 Integrating Pain Management into Your Spine Practice (page 23)
- 013 Management of Incidental Imaging Findings (page 23)
- 015 Update on Spinal Radiosurgery (page 24)
- 018 Spinal Alignment Strategies: Thoracic Lumbar Sacral (page 26)
- 021 Techniques for Adult Spinal Deformity Surgery: A Hands-on Course for Neurosurgeons (page 30)
- 030 Spinal Image Guidance and Advanced Intraoperative Imaging Techniques (page 34)
- 031 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation (page 35)



- 033 Alternatives to Transpedicular Approaches to Achieving Arthrodesis (page 36)
- 035 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches (page 37)

### BREAKFAST SEMINARS

- 105 Shoulder vs. Spine: Differentiating Shoulder and Cervical Spine Pathology (page 44)
- 106 If I Could Do That Case Over Again: Discussion of Complications of Spine Surgery (page 45)
- 107 Intramedullary Spinal Cord Tumors (page 45)
- 109 Lumbar Interbody Fusion: Direct Lateral Retroperitoneal Transposas Fusion (page 45)
- 117 Management of Adult Scoliosis (page 48)
- 118 New and Evolving Technologies for Minimally Invasive Lumbar Disc Surgery (page 48)
- 207 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery (page 62)
- 208 Challenging Spinal Cases: Pearls and Pitfalls (page 62)
- 210 Cervical Spondylotic Myelopathy (page 63)
- 212 Spondylolisthesis: Controversies in Management (page 64)
- 214 Return-to-play After Sports Injury II: Spine Injury (page 64)
- 218 Complications of Complex Spinal Surgery: Lessons Learned (page 66)
- 223 Peripheral Nerve Entrapment Syndromes (page 67)
- 224 Osteoporosis and Spinal Fusion Surgery (page 68)
- 303 Update on Lumbar Stenosis (page 77)
- 305 Management of Acute Spinal Cord Injury (page 78)



## SPINE TRACK



- 308 Principles and Techniques of Deformity Correction in Adolescents and Young Adults (page 79)
- 310 Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications (page 79)
- 313 Spinal Motion Preservation Using the Posterior Column Implants (page 80)
- 315 Management of Spinal Axis Trauma (page 81)
- 316 Current Use of Biologic Graft Extenders for Spinal Fusion (page 81)

### ADDITIONAL SESSIONS

- SE129: Spinal Balance/Deformity (page 55)
- SE132: Minimally Invasive Surgery (page 74)

## STEREOTACTIC AND FUNCTIONAL TRACK



### PRACTICAL CLINICS

- 004 Stereotactic and Functional Neurosurgery - Hands-on Workshop (page 19)
- 019 Brain Mapping and Awake Mapping Techniques (page 26)
- 027 Deep Brain Stimulation: Update and New Directions (page 32)

### BREAKFAST SEMINARS

- 104 Surgical Treatment of Parkinson's Disease (page 44)
- 112 Stem Cell Therapeutics in Neurosurgery (page 46)
- 127 Emerging Indications in Neuromodulation Surgery (page 52)

- 217 Contemporary Stereotactic Radiosurgery (page 66)
- 219 Resective Strategies for Epilepsy (page 66)
- 302 Chiari Malformations: Diagnosis, Treatments and Failures (page 77)
- 307 New Innovations in Epilepsy Surgery (page 78)
- 318 Functional Mapping of the Cerebral Cortex: Advantages and Limitations (page 82)

## TUMOR TRACK



### PRACTICAL CLINICS

- 026 Update on Malignant Brain Tumors for the General Neurosurgeon (page 32)
- 028 Brain Neoplasms: Updates on Diagnostics Through Therapeutics (page 34)
- 036 Practical and Technical Aspects of Transsphenoidal Surgery (page 37)

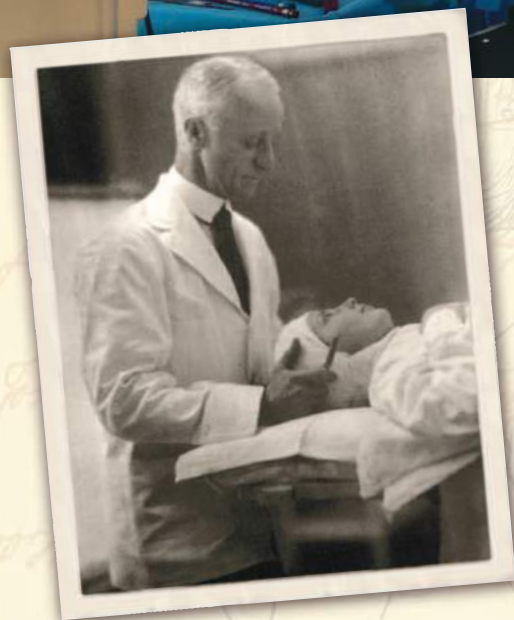
### BREAKFAST SEMINARS

- 115 The Spectrum of Adjuvant Therapy for Brain Tumors (page 47)
- 116 Suprasellar and Juxtacellular Tumors: Complications and Avoidance (page 48)
- 120 Tumor-related Epilepsy (page 49)
- 201 Update on Rx of Nerve Tumors/MPNST/Peripheral Nerve Spinal Tumors (page 59)
- 207 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery (page 62)
- 215 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors (page 65)
- 221 Vertebral Column Tumors (page 67)
- 225 Low-grade Gliomas (page 68)
- 228 Fluorescence Technologies in Neurosurgery: Present and Future Directions (page 69)
- 306 Pituitary Tumors (page 78)
- 311 How I Do It: Acoustic Tumors (page 79)
- 319 Malignant Brain Tumors: State-of-the-art Treatment (page 82)

### ADDITIONAL SESSIONS

- SE130: Low-grade Glioma (page 54)

# SATURDAY, MAY 2



|                     |                                                  |
|---------------------|--------------------------------------------------|
| 6:30 a.m.-5:30 p.m. | AANS Registration                                |
| 8 a.m.-5 p.m.       | All-Day Practical Clinics<br>(001-004)           |
| 8 a.m.-12 p.m.      | Morning Practical Clinics<br>(005-012)           |
| 8 a.m.-12 p.m.      | Advanced Practice Providers<br>Plenary Session I |
| 1-5 p.m.            | Afternoon Practical Clinics<br>(013-020, 038)    |

SATURDAY

## ALL-DAY PRACTICAL CLINICS

8 a.m.-5 p.m.

### 001 Introduction to Cerebrovascular Neurosurgery for Residents

#### CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** J Mocco, MD, FAANS; Erol Veznedaroglu, MD, FAANS

**Faculty:** Adam S. Arthur, MD, MPH, FAANS; Bernard R. Bendok, MD, FAANS; Mandy Jo Binning, MD, FAANS; Kevin M. Cockroft, MD, FAANS; Jay U. Howington, MD, FAANS; Alexander Arash Khalessi, MD; Elad I. Levy, MD, FAANS, MBA, FAHA; William J. Mack IV, MD, FAANS; Christopher S. Ogilvy, MD, FAANS; Howard A. Riina, MD, FAANS; Raymond Dwight Turner IV, MD, FAANS; Henry H. Woo, MD, FAANS

This comprehensive course is designed to provide neurosurgery residents unsure about their interest in endovascular neurosurgery an opportunity to use hands-on simulators and models to better understand the technical aspects of endovascular neurosurgery under close instruction in basic and advanced endovascular techniques. This experience will also facilitate a high degree of mentorship with acknowledged leaders in the field.

Registered attendees will receive a ticket for a resident's dinner.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the components of a dual-trained endovascular neurosurgeon's practice;
- Distinguish the basic skill set in regards to CV anatomy and catheter manipulation on simulator and flow model training; and
- Examine how dual-trained neurosurgeons use their open and endovascular skill sets to evaluate and treat CV disease.

8 a.m.-5 p.m.

### 002 Current Treatments and Controversies in Traumatic Brain Injury

#### NEUROTRAUMA TRACK



Clinic Fee: \$570

Advanced Practice Providers Fee: \$399

**Co-Directors:** David O. Okonkwo, MD, PhD, FAANS; Shelly D. Timmons, MD, PhD, FAANS

**Faculty:** M. Ross Bullock, MD, PhD; Kevin J. Gibbons, MD, FAANS; Gregory W.J. Hawryluk, MD; Jack I. Jallo, MD, PhD, FAANS; Ryan Kitagawa, MD; Joshua Eric Medow, MD, MS, FAANS; Julie G. Pilitsis, MD, PhD, FAANS; Jonathan R. Slotkin, MD; Martina Stippler, MD, FAANS; Joseph Christopher Zacko, MD, FAANS

This clinic emphasizes case studies and covers the significant breadth of the field of neurotrauma and critical care. It will emphasize practical as well as complex case-management issues. In the afternoon, participants will have hands-on instruction in techniques and devices for ICP monitoring, parenchymal oxygen monitoring and decompressive craniectomy.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the ICU management of the TBI patient;
- Describe the current surgical controversies in the management of the brain-injured patient;
- Identify the current concepts in dealing with brain-injured athletes; and
- Discuss management challenges of mild traumatic brain injury and concussion.



8 a.m.-5 p.m.

## 003 Invention and Innovation in Neurosurgery

### SOCIOECONOMIC TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Co-Directors: Charles L. Branch Jr., MD, FAANS; T Forcht Dagi, MD, MPH, MBA, DMedSc, FAANS

Faculty: Edward C. Benzel, MD, FAANS; Remis Bistras, MD; David J. Dykeman; Joseph R. Madsen, MD, FAANS; Charles J. Prestigiacomo, MD, FAANS; Wolfgang Ries, MD

This clinic outlines the process of developing, protecting, funding and commercializing new devices and other innovations in neurosurgery, including clinical-trials design, regulatory strategies, market-sizing and exit planning. The course is an adaptation of material taught in the Biomedical Entrepreneurship Program of the Harvard-MIT Program in Health Sciences and Technology, and at Harvard Business School. There will be a focus on spinal devices this year, but the course is applicable to all innovation and invention in neurosurgery.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Recognize and formulate market opportunities for innovation in neurosurgery, as well as develop and present a business plan and funding for startups;
- Describe the process of commercialization, including market-sizing, intellectual property, regulatory and reimbursement strategies, prototyping, cost engineering, revenue models, and clinical trials; and
- Discuss the concepts of starting a company, including governance, boards and advisors, conflicts of interest, partnering with industry, distribution models and exit strategies.



8 a.m.-5 p.m.

## NEW 004 Stereotactic and Functional Neurosurgery – Hands-on Workshop

### STEREOTACTIC AND FUNCTIONAL TRACK



Clinic Fee: \$1,500

Co Directors: Robert E. Gross, MD, PhD, FAANS; Jon T. Willie, MD, PhD

Faculty: Aviva Abosch, MD, PhD, FAANS; Stephan Chabardes, MD; Kathryn Lois Holloway, MD, FAANS; Willard S. Kasoff, MD, MPH; Darlene A. Lobel, MD, FAANS; Andre Guelman Machado, MD, PhD; Jonathan P. Miller, MD, FAANS; Joseph S. Neimat, MD, MSc, FAANS; Francisco A. Ponce, MD, FAANS; Karl A. Sillay, MD, FAANS; Ashwin Viswanathan, MD

This practical clinic is directed to neurosurgeons in practice or in training who desire to improve their skills and knowledge of stereotactic and functional neurosurgery. The program will focus on advanced stereotactic techniques used for implantation of deep brain stimulators and for functional ablation of brain structures in the treatment of movement disorders and psychiatric disorders. The goals of the program will be accomplished through a didactic program, followed by a hands-on laboratory program in which participants will use a wide range of stereotactic devices (frame, frameless), electrode drives and imaging techniques for radiological control. This is followed by a microelectrode-mapping training session, using microelectrode-recording equipment, as well as computer simulations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Use standard stereotactic frames, new burrhole-mounted frames and other frameless stereotactic devices to deliver therapies (e.g. deep brain stimulators, radiofrequency ablations) to the target safely and effectively;
- Identify effectively the standard targets used in functional neurosurgery in the basal ganglia using state-of-the-art neurophysiological mapping techniques; and
- Use 2D fluorography, 3D fluorography and CT scanning intraoperatively to verify electrode position after implantation of DBS electrodes.

SATURDAY

## MORNING PRACTICAL CLINICS

8 a.m.-12 p.m.

### 005 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management

#### CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Co-Directors: *H. Hunt Batjer, MD, FAANS; Arthur L. Day, MD, FAANS*

Faculty: *Ralph G. Dacey Jr., MD, FAANS; Steven L. Giannotta, MD, FAANS*

This course is designed to teach attendees the basics of vertebrobasilar, internal carotid, middle cerebral and anterior cerebral artery aneurysms.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Recognize the special features of aneurysms at specific sites;
- Recognize potential pitfalls for safe lesion treatment; and
- Identify new methods of intervention for cerebral aneurysms.

8 a.m.-12 p.m.

### 006 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents

#### SPINE TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Advanced Practice Providers Fee: \$315

Co-Directors: *Kaushik Das, MD, FAANS; Langston T. Holly, MD, FAANS*

Faculty: *Virany Huynh Hillard, MD, FAANS; Saad Abul Khairi, MD, FAANS; Naresh P. Patel, MD, FAANS; Luis Manuel Tumialan, MD, FAANS*

This course will describe the biological and biomechanical principles of spinal fusion. Through the use of didactic sessions and hands-on application, it also will describe the indications, operative approaches, and surgical techniques used in spinal fusion and instrumentation of the cervical and thoracolumbar spine.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe biologic basis and biomechanics of spine fusion;
- Describe indications of spinal fusion, instrumentation and arthroplasty; and
- Describe operative approaches and surgical techniques for spinal fusion and instrumentation.



8 a.m.-12 p.m.

## 007 Nuts and Bolts of Posterior Fossa Surgery: How I Do It

CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** William T. Couldwell, MD, PhD, FAANS;  
Anil Nanda, MD, MPH, FAANS

**Faculty:** Juan Carlos Fernandez-Miranda, MD; Michael J. Link, MD, FAANS; L. Madison Michael II, MD, FAANS;  
Basant Kumar Misra, MD; Daniel Monte-Serrat Prevedello, MD; Volker Seifert, MD, PhD

The objective of this course is to review the nuances of posterior fossa surgery. The discussion includes relevant surgical anatomy and approaches to various lesions of the posterior fossa. In addition, complication avoidance and management during surgery will be discussed. The lesions and approaches to be presented include microvascular decompression for trigeminal neuralgia, approaches to vestibular schwannoma, far lateral approach to skull base tumors and aneurysms, and midline approaches to pediatric posterior fossa tumors, as well as endoscopic approaches to clivus.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review the relevant surgical anatomy, as well as the positioning of posterior fossa surgery with incisions and approach;
- Discuss techniques to minimize and manage complications; and
- Distinguish safe approaches to brainstem lesions.

8 a.m.-12 p.m.

## 008 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base

CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** Evandro Pinto da Luz de Oliveira, MD, PhD;  
Jeffrey M. Sorenson, MD, FAANS; Juan Carlos Fernandez-Miranda, MD

**Faculty:** Paul A. Gardner, MD, FAANS; Neville Knuckey, FRACS; Pablo Rubino, MD, Aaron A. Cohen-Gadol, MD, FAANS

This course will review relevant surgical neuroanatomy using 3D stereoscopic projection. The areas to cover will be cortical and white matter anatomy, cerebrovascular, and skull base anatomy. There will be an emphasis both in intricate anatomical regions, such as insular, ventricles and cavernous sinus, and newest techniques, such as high-definition fiber tractography (HDFT) planning for intrinsic tumor surgery and endoscopic endonasal techniques for skull base lesions. The importance of surgical neuroanatomy for clinical practice and approach selection will be illustrated with surgical cases and HD/3D video presentations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review the complex anatomy of the fiber tracts and apply HDFT in clinical practice;
- Identify the key surgical anatomy for accessing the ventricles, basal cisterns, and anterior circulation aneurysms; and
- Discuss the different routes through the anterior skull base, middle fossa and cavernous sinus, including endoscopic endonasal and transcranial approaches.

8 a.m.-12 p.m.

## 009 Advanced MIS: Lateral Transpsoas Reconstruction

SPINE TRACK



Clinic Fee: \$1,500

**Co-Directors:** Adam S. Kanter, MD, FAANS; Juan Santiago Uribe, MD, FAANS

**Faculty:** Larry T. Khoo, MD; John E. O'Toole, MD, FAANS; Luiz Pimenta, MD, PhD; William R. Taylor, MD, FAANS

This course will focus on the rationale, indications, technique, outcomes and complications of the lateral retroperitoneal transpsoas approach in an evidence-based fashion. Each lecture will include clinical pearls and vignettes from experienced lateral access surgeons. A cadaver lab will enable participants to practice surgical technique and perform a retroperitoneal dissection to understand the pertinent neural structures and visceral anatomy.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review and discuss indications for the lateral thoracolumbar interbody fusion procedure;
- Discuss the anatomic limitations and constraints of lateral approach surgery; and
- Discuss the varied complications and their avoidance in lateral access surgery.



8 a.m.-12 p.m.

## 011 Update on the Management of Spine and Spinal Cord Injury

SPINE TRACK



Clinic Fee: \$450

**Advanced Practice Providers Fee:** \$315

**Co-Directors:** Michael G. Fehlings, MD, PhD, FAANS, FRCS; James S. Harrop, MD, FAANS; Daniel Jin Hoh, MD, FAANS

**Faculty:** Bizhan Aarabi, MD, FAANS; Bradley Jacobs, MD; Allan D. Levi, MD, PhD, FAANS; Rajesh Reddy, MD

The objective of this course is to familiarize surgeons with the acute management of the traumatic spinal column and spinal cord-injured (SCI) patient. It will discuss the timing and treatment of the acute spinal cord-injured patient, with explanations for present and future treatment strategies. In addition, time will be spent focusing on pediatric and geriatric populations. The course will be presented through case presentations, and attendees are encouraged to bring interesting and difficult cases for discussion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review evidence-based guidelines for treatment of spinal cord injury;
- Detail management of spinal injuries, including central cord injury and geriatric odontoid fractures;
- Discuss present SCI trials and treatment strategies;
- Review optimal treatment strategies in the care of SCI and spine trauma patients; and
- Discuss various spine trauma classification systems and their role in clinical decision-making.

8 a.m.-12 p.m.

## NEW 012 Integrating Pain Management into Your Spine Practice

PAIN TRACK & SPINE TRACK



Clinic Fee: \$1,500

**Co-Directors:** Julie G. Pilitsis, MD, PhD, FAANS; William S. Rosenberg, MD, FAANS; Steven M. Falowski, MD

**Faculty:** John W. German, MD, FAANS; Andre Guelman Machado, MD, PhD; Alon Y. Mogilner, MD, PhD, FAANS; Joshua M. Rosenow, MD, FAANS; Konstantin V. Slavin, MD, FAANS; Ashwin Viswanathan, MD

At least 70 percent of neurosurgeons have a predominant spine practice; one way to differentiate your practice and to provide your non-surgical patients other options is to offer neuromodulation and other pain procedures. In this cadaver-based course, we will familiarize you with the nuances of spinal cord stimulation placement and discuss how pain procedures bring value to your practice. Half of this course will be dedicated to placing both paddle and percutaneous leads, as well as other minimally invasive approaches to stimulator placement.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the benefits of incorporating pain procedures into your practice from a practice development standpoint;
- Determine which patients are candidates for these procedures; and
- Describe techniques of spinal cord stimulation.



## AFTERNOON PRACTICAL CLINICS

1 p.m.-5 p.m.

## 013 Management of Incidental Imaging Findings

SPINE TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Advanced Practice Providers Fee: \$315

**Co-Directors:** Cormac O. Maher, MD, FAANS; R. Michael Scott, MD, FAANS

**Faculty:** John H. Chi, MD, FAANS; Satoshi Kuroda, MD PhD; Mark R. Proctor, MD, FAANS; Eric J. Woodard, MD, FAANS

The current management strategy for the majority of incidental findings on cranial and spinal imaging studies will be discussed. Incidental findings, such as arachnoid cysts, pineal cysts, pituitary gland cysts, developmental venous anomalies, fibrous dysplasia, fibro-osseous clival lesions, mild ventriculomegaly, asymmetric ventricles, intracranial lipomas, borderline low cerebellar tonsils, a mildly dilated central canal of the spinal cord, T2 weighted bright white matter lesions and others, will be presented. The appropriate management will be reviewed and emphasized with case illustrations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Determine the appropriate management of a multitude of incidental imaging findings on brain and spine MRI studies;
- Recognize when further follow-up imaging is necessary, as well as when no further follow-up is needed; and
- Discuss the reasons why a particular incidental finding needs intervention.

1 p.m.-5 p.m.

## NEW 014 Neurosurgeon Team Physician

### NEUROTRAUMA TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** Gail L. Rosseau, MD, FAANS; Allen Kent Sills, MD, FAANS

**Faculty:** Jeff Allen, MD; David T. Bernhardt, MD; Leigh Ann Curl, MD; Kevin Guskiewicz, PhD, ATC; Bill Hughan, MD; Karen Margaret Johnston, MD, PhD; Michael Kaplen, MD; Andrew H. Kaye, MD; Geoffrey T. Manley, MD, PhD, FAANS; Joseph Charles Maroon, MD, FAANS(L); Margot Putukian, MD; Duke S. Samson, MD, FAANS; Robert J. Spinner, MD, FAANS; Gary Solomon, MD; Nicholas Theodore, MD, FAANS

This new course is designed to provide an introduction for practicing neurosurgeons to become involved in the care of athletes in their community. Experts will discuss topics such as concussion diagnosis and management, pre-participation screening for neurologic conditions, sideline and game management, how to work with athletic trainers and other sports medicine providers, and spine and peripheral nerve problems in athletes. The course will also include "lab" sessions on immobilizing the athlete with an on-field spine injury, protective equipment, sideline assessment techniques, and concussion testing.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss contemporary management of athletes with concussions, including treatment and return-to-play decisions;
- Review neurosurgical conditions that may affect participation in sports;
- Describe sideline and on-field management of common neurological sports injuries; and
- Discuss role of the neurosurgeon as a member of the sports medicine team and how to initiate relationships with sports organizations.

1 p.m.-5 p.m.

## 015 Update on Spinal Radiosurgery

### SPINE TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** Mark H. Bilsky, MD, FAANS; Peter C. Gerszten, MD, MPH, FAANS

**Faculty:** Lilyana Angelov, MD, FAANS; Steven D. Chang, MD, FAANS; Jason P. Sheehan, MD, PhD, FAANS; Jason Andrew Weaver, MD, FAANS; Kevin C. Yao, MD, FAANS

Current state-of-the-art techniques in image-guided surgery of the spine will be reviewed. Emphasis will be placed on the current indications and preliminary outcomes after radiosurgical ablation of benign and malignant spinal lesions.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the most commonly used techniques for spinal radiosurgery;
- Explain the current indications for and outcomes after spine radiosurgery, as well as the relative contraindications to it; and
- List the advantages and disadvantages of spinal radiosurgery techniques.



1 p.m.-5 p.m.

## 016 Applications of Video and 3D Technology in Neurosurgery

SOCIOECONOMIC TRACK



Clinic Fee: \$450

**Co-Directors:** *Andrew W. Grande, MD; Jeffrey M. Sorenson, MD, FAANS*

**Faculty:** *Juan Carlos Fernandez-Miranda, MD; Tonya Hines, BA; James K. Liu, MD, FAANS; John M. Tew Jr., MD, FAANS*

This course will cover the important concepts of video and 3D technology, with applications in the operating room, examination room, conference room and on the Internet. The steps required to produce a digital video will be reviewed — from acquisition to editing and delivery. Key aspects of educational videos, for both physicians and patients, will be discussed. Course participants also will become familiar with the principles of stereoscopy and learn methods for creating and displaying stereoscopic images and movies. Applications of video conferencing in neurosurgery will be examined, along with basic and advanced implementations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss how to use video and 3D technology in the different aspects of their neurosurgical practices;
- Discuss the concepts to produce digital videos; and
- Evaluate applications of video conferencing.

1 p.m.-5 p.m.

## 017 How to Tackle Difficult Cranial Cases: A Step-by-Step 3D Case-Based Presentation

CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** *Aaron A. Cohen-Gadol, MD, FAANS; Juan Carlos Fernandez-Miranda, MD*

**Faculty:** *Michael T. Lawton, MD, FAANS; B. Gregory Thompson Jr., MD, FAANS; Harry R. van Loveren, MD, FAANS*

This course will offer an intensive review of the technical nuances involved with cranial and skull base procedures via intraoperative 3D surgical video presentations. Craniotomy and intradural methods of common and more challenging procedures will be discussed. The faculty will provide the audience with “pearls” from their surgical experience for variations of pterional (clinoidectomy), orbitozygomatic, suboccipital, retrosigmoid and petrosal craniotomies.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the surgical anatomy of vascular and neoplastic lesions;
- Integrate anatomical knowledge with common and rare neurosurgical procedures performed at the skull base; and
- Discuss the nuances of techniques for managing challenging cranial procedures.



1 p.m.-5 p.m.

## 018 Spinal Alignment Strategies: Thoracic Lumbar Sacral

### SPINE TRACK



Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

**Co-Directors:** *Regis W. Haid Jr., MD, FAANS; Christopher I. Shaffrey, MD, FAANS*

**Faculty:** *Dean Chou, MD, FAANS; Charles Kuntz, MD, FAANS; Praveen V. Mummaneni, MD, FAANS; Juan Santiago Uribe, MD, FAANS; Michael Y. Wang, MD, FAANS*

This course will feature a series of lectures and hands-on presentations in thoracic and lumbar fusion techniques and technology. Discussion will include treatment of degenerative disease and spinal deformity in the thoracolumbar spine. The impact of implant design, technique selection (including minimally invasive approaches) and biological agents will also be covered.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review patient selection for thoracic and lumbar fusion;
- Discuss translational and rotational techniques for correction of thoracolumbar deformity, as well as review open and minimally invasive approaches for lumbar interbody fusion (ALIF, TLIF, PLIF); and
- Discuss common complications and management associated with thoracic and lumbar fusion.

1 p.m.-5 p.m.

## 019 Brain Mapping and Awake Mapping Techniques

### STEREOTACTIC AND FUNCTIONAL TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** *Gerald A. Grant, MD, FAANS; Guy M. McKhann II, MD, FAANS*

**Faculty:** *Nicholas M. Barbaro, MD, FAANS; Gene H. Barnett, MD, MBA, FAANS; Mitchel S. Berger, MD, FAANS; Hugues Duffau, MD; Konstantinos N. Fountas, MD, PhD; Jorge Alvaro Gonzalez-Martinez, MD, PhD, FAANS; Fernando L. Vale, MD, FAANS*

This course will provide an in-depth review of techniques and technologies that can be applied to identifying and working within eloquent areas of the brain and performing successful resections of neoplasms and epilepsy foci in adult and pediatric patients. The selection of surgical approaches based on non-invasive monitoring for surgery of epilepsies and brain tumors will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the technologies currently available for pre- and intraoperative brain mapping for tumors and epilepsy;
- Apply brain-mapping techniques to daily practice; and
- Recognize complication avoidance in epilepsy and brain-mapping techniques.



1 p.m.-5 p.m.

## 020 Spine Management in the Aging Population

### NEUROTRAUMA TRACK



Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Co-Directors: *Nathaniel P. Brooks, MD, FAANS; Andrea L. Strayer, MS, NP, CNRN*

Faculty: *Joseph S. Cheng, MD, MS, FAANS; Daniel Jin Hoh, MD, FAANS; Jeffrey Holtz, PA-C; Ajit A. Krishnaney, MD, FAANS; Richard P. Schlenk, MD, FAANS; Laura Ellen Smith, MSN; Michael Patrick Steinmetz, MD, FAANS; Kyla Stripling, APN, RN, MSN, ACNP-BC; Gregory R. Trost, MD, FAANS; Eve C. Tsai, MD, PhD, FAANS*

The population of adults age 65 plus in the United States is expected to grow to 19 percent of the total population by 2030. Special considerations are warranted when treating older adults with spine disorders. Treatment decision-making regarding common fractures and degenerative spine disorders will be presented in a format that the registered nurse and advanced practice provider may gain practical knowledge to apply to their practice for the care of this burgeoning patient population.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Analyze, diagnosis, classification, treatment decision-making and fracture healing end point for a variety of common fractures in the elderly;
- Discuss special considerations in the older adult with subaxial cervical spine fractures with and without spinal cord injury;
- Analyze treatment decision making in the older adult with symptomatic cervical spondylosis; and
- Analyze treatment decision making in the older adult with symptomatic degenerative spondylolisthesis and/or scoliosis.



1-5 p.m.

## 038 State-of-the-Art: Cranial Endoscopy

### CEREBROVASCULAR TRACK



Clinic Fee: \$1,500

Co-Directors: *Alan R. Cohen, MD, FAANS; Mark M. Souweidane, MD, FAANS*

Faculty: *Johnathan A. Engh, MD, FAANS; Michael R. Gaab, MD, PhD; J. Andre Grotenhuis, MD, PhD; Daniel James Guillaume, MD, FAANS; Carl B. Heilman, MD, FAANS; Tenoch Herrada-Pineda, MD, FAANS; Yasser Jeelani, MD; Ning Lin, MD; Roberta Rehder, MD; Henry W. S. Schroeder, MD, PhD*

Participants will receive didactic and hands-on instruction in intracranial endoscopy, including indications, techniques, outcomes and complications. Topics covered will include the management of hydrocephalus (including third ventriculostomy), removal of colloid cysts and other intraventricular tumors, endoscope-assisted microneurosurgery and transsphenoidal procedures.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the indications for intracranial endoscopy;
- Evaluate specific techniques available for intracranial endoscopy; and
- Discuss strategies for avoiding complications in intracranial endoscopy.

SATURDAY



**8 a.m.-12 p.m.**

## APP Plenary Session I

Plenary Session I has been created specifically with neurosurgical PAs and NPs in mind. This Plenary Session includes a dynamic lineup of speakers who will address topics including the pediatric brain, trauma, tumors and peripheral nerve, as well as evaluation and treatment of seizure disorders.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify common characteristics of primary brain tumors and metastatic disease based upon a patient's demographic, signs and symptoms, and radiographic appearance of the tumor;
- Discuss how the management of tumors and trauma differs in children compared with adults; and
- Discuss the workup and treatment options for seizure disorders.

**8-8:54 a.m.**

The Pediatric Brain: Tumors and Trauma  
*Andrew Reisner, MD, FAANS*

**8:55-9:49 a.m.**

Current Nonsurgical Treatment of Primary Brain Tumors and Metastatic Disease: What PAs and NPs Need to Know  
*David Black, PA-C*

**9:50-10:09 a.m.**

Break

**10:10-11:04 a.m.**

Seizure Evaluation and Surgical Treatment  
*Ashwini D. Sharan, MD, FAANS*

**11:05 a.m.-12 p.m.**

Peripheral Nerve: Evaluation, Work-up and Treatment  
*Allen H. Maniker, MD, FAANS*

# SUNDAY, MAY 3

*A Map*  
of the  
**CITY OF WASHINGTON**  
the District of Columbia  
*established as the permanent Seat of the Government*  
— of the —



SUNDAY

|                      |                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-6:30 p.m.  | AANS Registration                                                                                                                      |
| 7:30 a.m.-4:30 p.m.  | All-Day Practical Clinics<br>(021-022)                                                                                                 |
| 7:30 a.m.-4:30 p.m.  | International Symposium                                                                                                                |
| 7:30-11:30 a.m.      | Morning Practical Clinics<br>(023-029)                                                                                                 |
| 7:30-11:30 a.m.      | Advanced Practice Providers<br>Plenary Session II                                                                                      |
| 12:30 p.m.-4:30 p.m. | Afternoon Practical Clinics<br>(024, 028, 030-039)                                                                                     |
| 1-4:30 p.m.          | Young Neurosurgeons<br>Research Forum <ul style="list-style-type: none"> <li>• Osler Lecture<br/>A. John Popp, MD, FAANS(L)</li> </ul> |



|                |                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| 5-7:15 p.m.    | AANS Opening Ceremonies <ul style="list-style-type: none"> <li>• Peyton Manning</li> <li>• Bill Walton</li> </ul> |
| 7:45-9:45 p.m. | AANS Opening Reception at<br>The Smithsonian's National<br>Museum of American History                             |

## ALL-DAY PRACTICAL CLINICS

7:30 a.m.-4:30 p.m.

### 021 Techniques for Adult Spinal Deformity Surgery: A Hands-on Course for Neurosurgeons

#### SPINE TRACK



Clinic Fee: \$1,500

**Co-Directors:** *Peter Douglas Angevine, MD, MPH, FAANS; Praveen V. Mummaneni, MD, FAANS*

**Faculty:** *Sanjay Dhall, MD, FAANS; Kai-Ming Fu, MD, PhD, FAANS; Robert F. Heary, MD, FAANS; Tyler Robert Koski, MD, FAANS; Frank La Marca, MD, FAANS; Mark Andrew Pichelmann, MD; Justin S. Smith, MD, PhD, FAANS; Eric J. Woodard, MD, FAANS*

This hands-on cadaver course will cover the essential techniques of evaluating and treating patients with adult spinal deformity. The practical portion will include techniques of thoracic and lumbar pedicle screw placement, sacropelvic fixation, posterior column osteotomies and vertebral column resection. Strategies for rod placement, deformity correction and achieving arthrodesis will also be covered.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the clinical and radiographical evaluation of and treatment planning for common spinal deformities in adults, including degenerative lumbar scoliosis, thoracic kyphosis and sagittal imbalance;
- Describe techniques of thoracic and lumbar pedicle screw placement, sacropelvic fixation and posterior column osteotomies, as well as strategies for rod placement and basic deformity correction; and
- Discuss complication avoidance and management strategies, including achieving arthrodesis, for patients undergoing spinal deformity surgery.

7:30 a.m.-4:30 p.m.

### 022 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example

#### SOCIOECONOMIC TRACK



Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Candidate or Medical Student Fee: \$0

**Co-Directors:** *Joseph S. Cheng, MD, MS, FAANS; John Kevin Ratliff, MD, FAANS*

**Faculty:** *Peter Douglas Angevine, MD, MPH, FAANS; Robert R. Johnson II, MD, FAANS; Alexander M. Mason, MD, FAANS; John G. Piper, MD, FAANS; Kim Pollock, RN, MBA; Teri Romano, RN, MBA, CPC; Clemens M. Schirmer, MD, PhD; Scott Douglas Simon, MD; Karin R. Swartz, MD, FAANS; Luis Manuel Tumialan, MD, FAANS*

This newly revised AANS Coding and Reimbursement course provides a summary of the 2015 CPT coding changes including the upcoming ICD-10 implementation, and also reviews the up-to-date coding rules that affect neurosurgeons. The faculty are key figures in the development, revision and valuation of CPT codes, and offer insight into current coding rules.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Apply new and revised neurosurgical 2015 CPT codes to key neurosurgical services;
- Discuss key concepts in reporting neurosurgical CPT codes and modifiers to effectively describe their professional surgical and E&M work; and
- Explain fundamental differences in using ICD-10 nomenclature in reporting neurosurgical diagnoses, compared to the ICD-9 nomenclature.

## MORNING PRACTICAL CLINICS

7:30-11:30 a.m.

### 023 Goodman Oral Board Review

#### SOCIOECONOMIC TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Co-Directors: Thomas J. Leipzig, MD, FAANS; Allan D. Levi, MD, PhD, FAANS

Faculty: James S. Harrop, MD, FAANS; Robert J. Spinner, MD, FAANS

The clinic is designed for residents, fellows and young neurosurgeons in their first five years of practice who will eventually prepare for the ABNS Oral Board certification exam. Course attendees who want to learn more about the ABNS certification process, including how to best prepare for the oral board and techniques on how to answer oral format questions, are encouraged to attend. This course provides insight into the design and format of the Goodman Oral Board Review course.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss contemporary neurosurgery topics, including cerebrovascular disease, tumors, spine and peripheral nerves;
- Comprehend the format of the board exam; and
- Identify those areas of neurosurgery where further study would be beneficial in preparation for the board exam.



7:30-11:30 a.m.

### 025 Negotiating Strategies in Neurosurgery

#### SOCIOECONOMIC TRACK



Clinic Fee: \$450

Co-Directors: E. Hunter Dyer, MD, FAANS; M. Sean Grady, MD, FAANS

Faculty: Kim J. Burchiel, MD, FAANS; Dong H. Kim, MD, FAANS; L. Madison Michael II, MD, FAANS; Troy D. Payner, MD, FAANS; Jonathan R. Slotkin, MD

This course will provide case studies of both success and failure from neurosurgeons who negotiated with hospitals. It will allow participants important insight into how and why strategies succeeded or failed. Each case study evaluates approaches to ensure neurosurgical career satisfaction, financial stability, expansion of practice opportunities and availability for patient care, with special attention paid to the financial relationships between hospitals and neurosurgeons, and how best to leverage a neurosurgeon's value to his/her hospital. All course participants will be requested to submit their own hospital-negotiation case studies for discussion in the interactive and results-oriented portion of the course.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Assess the direct and indirect financial contribution neurosurgeons make to a hospital, and explain administrative "financial speak" essential to successful negotiations;
- Define alternative revenue sources for neurosurgeons in your hospital and community; and
- Determine practical approaches for solving current dilemmas in neurosurgeon/hospital relationships.

7:30-11:30 a.m.

## 026 Update on Malignant Brain Tumors for the General Neurosurgeon

TUMOR TRACK



Clinic Fee: \$570

Candidate or Medical Student Fee: \$0

**Co-Directors:** Mitchel S. Berger, MD, FAANS; Andrew Thomas Parsa, MD, PhD, FAANS; Michael William Weaver, MD, FAANS

**Faculty:** Manish K. Aghi, MD, FAANS; Katharine J. Drummond, MBBS, FRACS; Alexandra J. Golby, MD, FAANS; Russell R. Lonser, MD, FAANS; Charles L. Rosen, MD, PhD, FAANS; Mark L. Rosenblum, MD, FAANS; Matthew Christopher Tate, MD, PhD; L. Gerard Toussaint III, MD, FAANS; Isaac Yang, MD

This course will provide the practicing clinician with an up-to-date overview of current management strategies for all types of benign and malignant brain tumors. This seminar includes current research topics, but emphasizes practical management issues.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the state-of-the-art management of malignant brain tumors, including glial tumors, meningiomas and skull base tumors;
- Discuss current concepts in glioma management; and
- Apply current updates about brain tumors to daily clinical practice decision-making.

7:30-11:30 a.m.

## 027 Deep Brain Stimulation: Update and New Directions

STEREOTACTIC AND FUNCTIONAL TRACK



Clinic Fee: \$450

**Co-Directors:** Aviva Abosch, MD, PhD, FAANS; Parag G. Patil, MD, PhD, FAANS

**Faculty:** Nicholas M. Boulis, MD, FAANS; Terence J. Coyne, MD; Michael G. Kaplitt, MD, PhD, FAANS; Peter E. Konrad, MD, PhD, FAANS; Brian H. Kopell, MD, FAANS; Paul S. Larson, MD, FAANS; James McInerney, MD, FAANS; Joshua M. Rosenow, MD, FAANS; Donald M. Whiting, MD, FAANS

Practical aspects of surgery for the treatment of Parkinson's disease, tremor and dystonia will be presented. Emphasis will be on anatomical and physiological targeting strategies, intraoperative decision-making, troubleshooting, complication avoidance and management. Cases and intraoperative scenarios will be presented for interactive discussion between the audience and faculty.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Evaluate patients with Parkinson's disease, tremor and dystonia for surgical management;
- Apply the principles and techniques of deep brain stimulation and lesioning surgeries; and
- Discuss emerging indications for DBS, such as medically-refractory obsessive compulsive disorder.



7:30-11:30 a.m.

## 029 Incorporation of Electronic Technology to Improve Clinical Practice: Current Uses and Future Directions

### SOCIOECONOMIC TRACK



Clinic Fee: \$450

**Co-Directors:** *Richard C. E. Anderson, MD, FAANS; Neil Arthur Feldstein, MD, FAANS*

**Faculty:** *Christopher Paul Kellner, MD; Clemens M. Schirmer, MD, PhD; Nicholas J. Szerlip, MD, FAANS ; A. Samy Youssef, MD, FAANS*

This seminar is geared toward those interested in expanding their use of computers, tablets, smartphones and Web-based technology to improve clinical practice. Focusing primarily on Mac/PC operating systems and smartphone and tablet technology, the seminar will demonstrate how to enhance the day-to-day practice of neurosurgery through the use of readily available programs, including cloud computing. A significant portion of the program will discuss mobile computing and security with remote-image review and hospital network access. In addition, applications that optimize teleconferencing with colleagues, facilitate medical dictation, and allow simultaneous review of images, case presentations and telemedicine in real time will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Use mobile devices (laptop computers, smartphones and tablets) to access work computers and hospital networks for EMRs and diagnostic imaging;
- Edit both still images and video sequences for presentations;
- Manipulate DiCom images of radiographs in clinical practice; and
- Describe online security and safeguarding of data.

## AFTERNOON PRACTICAL CLINICS

12:30-4:30 p.m.

## NEW 024 EVD Insertions: Hands-on Practicum Course

### NEUROTRAUMA TRACK



Clinic Fee: \$570

**Advanced Practice Providers Fee:** \$399

**Director:** *Marianne E. Langlois, PA-C*

**Faculty:** *Brian Korn, PA-C; Gregory J. A. Murad, MD, FAANS*

Intracranial monitoring devices, including ventriculostomies, ICP and brain oxygenation catheters, are widely used in the critical care of the neurologically compromised patient. The purpose of this course is to discuss the various monitoring devices available for this patient population, indications for insertion, insertion techniques and potential complications. The course will consist of a didactic lecture, followed by hands-on training with ventriculostomy simulation, during which course attendees will practice ventriculostomy insertion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Acquire knowledge of neurosurgical conditions that are appropriate for placement of intracranial monitoring devices;
- Review pertinent neuro-anatomy as it pertains to placement of intracranial monitoring devices;
- Develop an understanding of techniques used to place intracranial monitoring devices; and
- Describe risks and complications of these neurosurgical procedures.

12:30-4:30 p.m.

## 028 Brain Neoplasms: Updates on Diagnostics Through Therapeutics

TUMOR TRACK



Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

**Co-Directors:** Christi DeLemos, RN, NP; Nader Sanai, MD, FAANS

**Faculty:** Manmeet Ahluwalia, MD; Frederick G. Barker II, MD, FAANS; Clark C. Chen, MD, PhD, FAANS; Steven N. Kalkanis, MD, FAANS; Douglas S. Kondziolka, MD, FAANS; Kathy Lupica, NP; Michael W. McDermott, MD, FAANS; Guy M. McKhann II, MD, FAANS; Ganesh Rao, MD, FAANS

This course will provide the general neurosurgeon, resident neurosurgeon and neurosurgical advanced practice provider with brief overviews of modern principles and practice paradigms for brain tumor patient management. Our global emphasis will focus on common clinical scenarios and management dilemmas that specialists and non-specialists alike encounter. The course will highlight surgical and medical strategies that have emerged over the past 12 months, as well review the expanding roles for radiosurgery, functional mapping, molecular profiling and adjuvant therapy in this patient population. We will also review practical methods to manage and enhance quality of life among survivors.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Evaluate recent results of clinical trials related to the diagnosis, treatment and management of patients with brain tumors;
- Outline validated strategies to improve quality of life and symptom-management for brain tumor patients;
- Compare and contrast targeted radiation treatment options for brain tumor patients; and
- Identify the roles for molecular profiling in customizing adjuvant therapy choices in neuro-oncology.

12:30-4:30 p.m.

## 030 Spinal Image Guidance and Advanced Intraoperative Imaging Techniques

SPINE TRACK



Clinic Fee: \$1,500

**Co-Directors:** Eric W. Nottmeier, MD, FAANS; Eric A. Potts, MD, FAANS

**Faculty:** Roger Hartl, MD, FAANS; Robert E. Isaacs, MD, FAANS; Iain H. Kalfas, MD, FAANS; Dean G. Karahalios, MD, FAANS; Jean-Pierre Mobasser, MD, FAANS; Stephen M. Pirris, MD, FAANS; James M. Schuster, MD, PhD, FAANS; Thomas B. Scully, MD, FAANS

The caveats and pitfalls of this technology, as well as proper operating room setup, will be discussed. Participants will learn the applications of image guidance to cervical, thoracic, lumbar, minimally invasive, revision and deformity spinal surgery procedures. Advanced intraoperative techniques both for localization and for assessment of decompression will be discussed. A review of the published literature on spinal image guidance and operating room radiation exposure will be presented. At the conclusion of the symposium, cases will be presented and discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify and perform the different registration techniques used in image-guided spinal surgery and describe methods to maintain navigation accuracy;
- List the types of spinal fusion procedures in which image guidance can be the most advantageous; and
- Name the most common pitfalls of spinal image guidance and identify methods to avoid these pitfalls.



12:30-4:30 p.m.

## 031 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation

### SPINE TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Advanced Practice Providers Fee: \$315

**Co-Directors:** Line Jacques, MD, FAANS; Robert J. Spinner, MD, FAANS

**Faculty:** Kimberly S. Harbaugh, MD, FAANS; Marie-Noelle Hebert-Blouin, MD; Allen H. Maniker, MD, FAANS; Rajiv Midha, MD, MS, FAANS; Vikram C. Prabhu, MD, FAANS; Lynda Jun-San Yang, MD, PhD, FAANS; Eric L. Zager, MD, FAANS

This clinic will provide an overview of the neurosurgeon's approach to the patients with peripheral nerve disorders.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the indications, the timing and the types of surgical intervention to treat peripheral nerve injuries and entrapment;
- Discuss the anatomy, clinical presentation and management of the most common entrapments in the upper and the lower extremity;
- Discuss the indications and surgical management of benign and malignant peripheral nerve tumors; and
- Review the management of peripheral nerve cases.



12:30-4:30 p.m.

## 032 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon

### NEUROTRAUMA TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Advanced Practice Providers Fee: \$315

**Co-Directors:** Patricia B. Raksin, MD, FAANS; Philip Andrew Villanueva, MD, FAANS

**Faculty:** Perry A. Ball, MD, FAANS; M. Ross Bullock, MD, PhD; William M. Coplin, MD; Kevin J. Gibbons, MD, FAANS; Peter John Hutchinson, MD; Joshua Eric Medow, MD, MS, FAANS; David O. Okonkwo, MD, PhD, FAANS; Andres Mariano Rubiano, MD; Franco Servadei, MD; Sherry L. Taylor, MD, PhD, FAANS; Andreas W. Unterberg, MD, PhD; Alex B. Valadka, MD, FAANS

This course is designed to provide a review and update for practicing neurosurgeons attending to trauma patients with neurologic injury in the ICU setting. The course will focus on aspects of general critical-care management — including ventilator management, blood-pressure considerations, fluid resuscitation, nosocomial infection, sedation and analgesia, hematologic issues, and nutrition — as they pertain to neurosurgical patients. A case-based format will facilitate discussion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss considerations for fluid resuscitation and blood-pressure management, as well as strategies for management of sedation and analgesia, in the trauma patient with neurologic injury;
- Describe the contemporary diagnosis and management of a broad spectrum of medical issues as they pertain to neurosurgical trauma patients, including coagulopathy, nosocomial infections, endocrinopathy, renal function, nutrition and “never” events; and
- Discuss recently published and ongoing clinical trials with relevance to the care of severe traumatic brain injury patients.

12:30-4:30 p.m.

## 033 Alternatives to Transpedicular Approaches to Achieving Arthrodesis

SPINE TRACK



Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Co-Directors: *Edward C. Benzel, MD, FAANS; Neil R. Malhotra, MD*

Faculty: *Charles L. Branch, Jr. MD, FAANS; Marc E. Eichler, MD, FAANS; Bruce M. Frankel, MD, FAANS; Jean-Marc Voyadzis, MD, FAANS*

Both the biomechanical properties and clinical applications of lumbar fixation and stabilization technologies will be discussed as they relate to ALIF, TLIF and PLIF procedures. Alternatives to transpedicular approaches are emphasized and compared and contrasted with transpedicular approaches. During the hands-on portion, participants will perform procedures, using the alternative technologies discussed, on sawbone models.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the biomechanical properties of transpedicular and alternative lumbar fixation and stabilization technologies;
- Discuss clinical applications and indications of the alternative technologies; and
- Discuss and perform the techniques presented in a hands-on sawbone model setting.



12:30-4:30 p.m.

## 034 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base

CEREBROVASCULAR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

Co-Directors: *Evandro Pinto da Luz de Oliveira, MD, PhD; Juan Carlos Fernandez-Miranda, MD; Jeffrey M. Sorenson, MD, FAANS*

This course will review relevant surgical neuroanatomy using 3D stereoscopic projection. The areas to cover will be surgical anatomy and approaches to the cerebellum and fourth ventricle; microsurgical and endoscopic approaches to the cerebellopontine angle and beyond; posterior circulation surgical anatomy; transpetrosal approaches; surgical anatomy and approaches to the jugular foramen; far lateral and transcondylar approaches; endoscopic endonasal transclival approaches. There will be an emphasis on illustrating the importance of surgical neuroanatomy for clinical practice and approach selection with surgical cases and 3D video case presentations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss surgical anatomy and approaches to the cerebellum, fourth ventricle and cerebellopontine angle;
- Review anterior and posterior transpetrosal approaches;
- Recognize surgical anatomy and approaches to the jugular foramen and foramen magnum;
- Learn endoscopic endonasal approaches to the clival and petroclival regions; and
- Illustrate the application of surgical neuroanatomy for selection and/or combination of surgical approaches.

12:30-4:30 p.m.

## 035 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches

### SPINE TRACK



Clinic Fee: \$660

Candidate or Medical Student Fee: \$0

Advanced Practice Providers Fee: \$495

**Co-Directors:** Richard C. E. Anderson, MD, FAANS; Douglas L. Brockmeyer, MD, FAANS; Harel Deutsch, MD, FAANS; Michael G. Kaiser, MD, FAANS

**Faculty:** Nader Dadgar, MD; Andrew T. Dailey, MD, FAANS; James C. Miller, MD, FAANS; Justin W. Miller, MD; Noel I. Perin, MD, FAANS; Charles Sansur, MD, MHSc, FAANS

This clinic will include the evaluation of craniocervical anatomy and pathology. Formulation of a treatment for disorders and construction of physiological modes of therapy will be reviewed. The didactic program will be followed by hands-on demonstration.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Formulate craniocervical junction surgical approaches;
- Classify and differentiate craniocervical lesions; and
- Identify and treat fusions.



12:30-4:30 p.m.

## 036 Practical and Technical Aspects of Transsphenoidal Surgery

### TUMOR TRACK



Clinic Fee: \$450

Candidate or Medical Student Fee: \$0

**Co-Directors:** Gail L. Rosseau, MD, FAANS; Jason P. Sheehan, MD, PhD, FAANS

**Faculty:** David S. Baskin, MD, FAANS; Garni Barkhoudarian, MD; Aaron A. Cohen-Gadol, MD, FAANS; John A. Jane Jr., MD, FAANS; Andrew H. Kaye, MD; Andrew Scott Little, MD, FAANS; James K. Liu, MD, FAANS; Ian E. McCutcheon, MD, FAANS; Theodore H. Schwartz, MD, FAANS

This practical clinic will review traditional transsphenoidal approaches and present contemporary modifications of the technique, including extended and endoscopic approaches. The application of advanced imaging technologies, including 3D endoscopy and intraoperative MRI, will be described. In addition, this course will provide updates regarding current stereotactic radiosurgery and medical management for patients with pituitary tumors.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the transsphenoidal approach with its contemporary modifications, and outline current approaches to transsphenoidal and extended transsphenoidal surgery;
- Examine the role for advance imaging (e.g. intraoperative MRI and 3D endoscopy) in pituitary surgery;
- Outline the advantages and disadvantages of an endoscopic technique; and
- Evaluate contemporary concepts in adjunctive therapies for patients with pituitary tumors.

12:30-4:30 p.m.

## 037 MOC Prep Course

## SOCIOECONOMIC TRACK



Clinic Fee: \$450

**Co-Directors:** *Thomas J. Leipzig, MD, FAANS; Robert J. Spinner, MD, FAANS*

**Faculty:** *Cargill H. Alleyne Jr., MD, FAANS; Herbert E. Fuchs, MD, PhD, FAANS; Allan D. Levi, MD, PhD, FAANS*

This session will highlight state-of-the-art practice utilizing a broad spectrum of clinical cases. It is based on the format of the AANS MOC Preparation and Neurosurgical Update course and will allow participants to assess their knowledge and practice in comparison to fellow neurosurgeons, utilizing an audience response system.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review diagnosis and management of clinical cases covering a broad spectrum of neurosurgical practice;
- Assess your knowledge and understanding of state-of-the-art neurosurgical practice;
- Compare management decisions to those of fellow neurosurgeons; and
- Develop a better understanding of the MOC process.

12:30-4:30 p.m.

## NEW 039 Advanced Endovascular Neurosurgery

## CEREBROVASCULAR TRACK



Clinic Fee: \$1,500

**Co-Directors:** *Adam S. Arthur, MD, MPH, FAANS; Cameron G. McDougall, MD, FAANS*

**Faculty:** *Bernard R. Bendok, MD, FAANS; Brian L. Hoh, MD, FAANS; Jay U. Howington, MD, FAANS; Sean D. Lavine, MD, FAANS; J Mocco, MD, FAANS; Howard A. Riina, MD, FAANS; Andrew J. Ringer, MD, FAANS; Adnan H. Siddiqui, MD, PhD, FAANS; Erol Veznedaroglu, MD, FAANS; Henry H. Woo, MD, FAANS*

Endovascular neurosurgery is a rapidly evolving field. Newer devices and procedures may require new skill sets. Advanced techniques will be discussed and presented by experienced neurosurgeons. Hands-on exercises utilizing a variety of models will allow participants the firsthand opportunity to employ advanced techniques and gain experience with newer devices.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Gain familiarity with advanced endovascular techniques and newer devices;
- Discuss situations in which these are most useful; and
- Gain hands-on experience with new techniques and devices.





**7:25 a.m.-4:30 p.m.**

## International Symposium

**Moderators:** *Ossama Al-Mefty, MD, FAANS; Robert F. Heary, MD, FAANS; Roberto C. Heros, MD, FAANS(L); Jacques J. Morcos, MD, FAANS; Anil Nanda, MD, MPH, FAANS; Michael Y. Wang, MD, FAANS*

**7:30-7:44 a.m.**

Failed Back Syndrome  
*Claudio G. Yampolsky, MD*

**7:45-7:59 a.m.**

Surgical Management of the Rheumatoid Spine  
*Giancarlo Guizzardi, MD*

**8-8:14 a.m.**

Use of Memory Metals for Spinal Deformity Correction  
*Yan Wang, MD*

**8:15-8:29 a.m.**

Findings from the Global Spinal Tumor Study Group  
*David Choi, MD*

**8:30-8:44 a.m.**

Predicting Surgical Outcomes in Cervical Spondylotic Myelopathy  
*Vedantam Rajshekhar, MD*

**8:45-8:59 a.m.**

Treatment of C1/2 Dislocations  
*Fengzeng Jian, MD*

**9-9:14 a.m.**

Re-establishing Connections After Traumatic Spinal Cord Injury  
*Jau-ching Wu, MD*

**9:15-9:29 a.m.**

Spinal Neurosurgery: The Latin American Experience  
*Asdrubal Falavigna, MD, PhD*

**9:30-9:44 a.m.**

Beverage Break

**9:45-10:14 a.m.**

Spine Panel/Case Discussions

**10:15-10:29 a.m.**

Gliomas or Metastases  
*Ying Mao, MD*

**10:30-10:44 a.m.**

Petroclival Meningiomas: Meaning of Conservative Approach  
*Volker Seifert, MD, PhD*

**10:45-10:59 a.m.**

Gliomas  
*Andrew H. Kaye, MD*

**11-11:14 a.m.**

Acoustic Neuromas  
*Basant Kumar Misra, MD*

**11:15-11:29 a.m.**

Craniopharyngiomas: Surgical Strategies  
*Miguel A. Arraez Sanchez, MD*

**11:30-11:44 a.m.**

Preoperative Tumor Embolization: Standard or Exception?  
*George Samandouras, MD*

**11:45-11:59 a.m.**

Endonasal Endoscopic Approaches: When do they Replace Open Approaches?  
*Sebastien Froelich, MD*

**12-12:14 p.m.**

Factors Influencing Meningiomas Recurrence  
*Christianto B. Lumenta, MD, PhD*

**12:15-1:14 p.m.**

Lunch

**1:15-1:44 p.m.**

Tumor Panel/Case Discussions

**1:45-1:59 p.m.**

Dural AV Fistulae: The Endovascular Revolution  
*Ling Feng, MD*

**2-2:14 p.m.**

Management of Giant Aneurysms  
*Yong-Kwang Tu, MD*

**2:15-2:29 p.m.**

Supratentorial AVMs: State of the Art Techniques  
*John David Laidlaw, FRACS*

**2:30-2:44 p.m.**

Cavernous Angiomas in Eloquent Zones  
*Kazuhiro Hongo, MD*

**2:45-2:59 p.m.**

Role of Bypass Surgery in Ischemia  
*Rokuya Tanikawa, MD*

**3-3:14 p.m.**

Genetics of the Aneurysm Wall  
*Mika Niemela, MD, PhD*

**3:15-3:29 p.m.**

Surgical Strategies for MCA Aneurysms  
*Edgardo Spagnuolo, MD*

**3:30-3:44 p.m.**

Infratentorial AVMs: Why are They Special?  
*Evandro Pinto da Luz de Oliveira, MD, PhD*

**3:45-3:59 p.m.**

Beverage Break

**4-4:30 p.m.**

Cerebrovascular Panel/Case Discussions



**7:30-11:30 a.m.**

## APP Plenary Session II

Plenary Session II includes lectures that continue to focus on issues pertinent to neurosurgical NPs and PAs. Plenary Session II includes expert lecturers presenting topics including the pediatric spine, post op management of vasospasm, reimbursement issues and an update on functional neurosurgery.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Have an understanding of the history and use of lasers for intracranial pathologies;
- Learn to evaluate productivity in both economic and noneconomic terms, and demonstrate the contributions to increased practice efficiency made by PAs/NPs; and
- Have an understanding of common pediatric spine conditions and treatment.

**7:30-7:59 a.m.**

Abstract Presentations

**8-8:46 a.m.**

The Pediatric Spine: Tumors and Trauma  
*Rachana Tyagi, MD, FAANS*

**8:47-9:34 a.m.**

Vasospasm and Post-Op Management  
*Charles J. Prestigiacomo, MD, FAANS*

**9:35-9:54 a.m.**

Break

**9:55-10:42 a.m.**

Effective Solutions Regarding Reimbursement for PAs/NPs  
*Michael L. Powe*

**10:42-11:30 a.m.**

MRI-guided Laser Ablation for Intracranial Pathologies  
*Shabbar F. Danish, MD, FAANS*

**1-4:30 p.m.**

## Young Neurosurgeons Research Forum

Supported by the Young Neurosurgeons Committee and the AANS Mentoring Program, and endorsed by the Senior Neurosurgical Society (SNS).

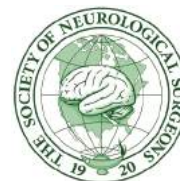
**1-1:29 p.m.**

Osler Lecture

*Lessons Learned from Halsted*

Introduced by: Jonas M. Sheehan, MD, FAANS

Speaker: A. John Popp, MD, FAANS(L)



Named in honor of Sir William Osler, a pioneer in modern medical education and personal mentor to Harvey Cushing, the Osler Lecture is intended to help encourage, educate and inspire young neurosurgeons in their careers.

**1:30-4:30 p.m.**

Abstract Presentations

Moderators: Jonas M. Sheehan, MD, FAANS; Stacey C. Quintero Wolfe, MD, FAANS



5-7:15 p.m.

## AANS Opening Ceremonies

Sharing their stories of victory and perseverance, NFL quarterback Peyton Manning and NBA Hall of Famer Bill Walton will kick off the opening ceremonies at the 2015 AANS Annual Scientific Meeting. These world-renowned athletes are sure to provide attendees a unique perspective that will inspire and entertain.

7:45-9:45 p.m.

## AANS Opening Reception

**Location:** The Smithsonian's National Museum of American History

Through unique collections and archives, rigorous research and dynamic public outreach, The National Museum of American History explores the immeasurable richness and complexity of American history by collecting and preserving more than three million artifacts. From Abraham Lincoln's top hat to Dorothy's ruby slippers from *The Wizard of Oz*, the National Museum of American History showcases a fascinating assortment of American culture and history, promising to be a spectacular venue for the 2015 AANS Opening Reception.

One ticket to the AANS Opening Reception is included with each medical attendee and guest registration. Additional tickets are also available for purchase.

# MONDAY, MAY 4

*A Map*  
of the  
CITY OF WASHINGTON  
in the District of Columbia  
established as the permanent Seat of the Government  
— of the —

MONDAY

|                  |                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-4 p.m. | AANS Registration                                                                                                                                                                                                                                                                                                                                                                     |
| 7-9 a.m.         | Breakfast Seminars (101-128)                                                                                                                                                                                                                                                                                                                                                          |
| 9 a.m.-4 p.m.    | AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                                     |
| 9-9:45 a.m.      | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                       |
| 9:30-9:45 a.m.   | Historical Vignettes:<br>Cushing/Washington                                                                                                                                                                                                                                                                                                                                           |
| 9:45 a.m.-1 p.m. | Plenary Session I <ul style="list-style-type: none"> <li>• <i>Hunt-Wilson Lecture</i><br/>Jonathan Turley</li> <li>• <i>Richard C. Schneider Lecture</i><br/>Fredric B. Meyer, MD, FAANS</li> <li>• <i>AANS Presidential Address</i><br/>Robert E. Harbaugh, MD, FAANS</li> </ul>                                                                                                     |
| 1-2 p.m.         | Lunch in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                                                        |
| 1:15-2 p.m.      | Lunch and Learn Seminars<br><i>Non-CME Event</i>                                                                                                                                                                                                                                                                                                                                      |
| 1:15-2:45 p.m.   | Advanced Practice Providers Luncheon                                                                                                                                                                                                                                                                                                                                                  |
| 2-3:30 p.m.      | Operative Nuances I: Tracking Challenging Cases 3D Video Presentation                                                                                                                                                                                                                                                                                                                 |
| 2-5:30 p.m.      | Scientific Sessions I-VI <ul style="list-style-type: none"> <li>• Scientific Session I: Tumor</li> <li>• Scientific Session II: Spine</li> <li>• Scientific Session III: Stereotactic and Functional Surgery</li> <li>• Scientific Session IV: Pediatrics</li> <li>• Scientific Session V: Cerebrovascular</li> <li>• Scientific Session VI: Neurotrauma and Critical Care</li> </ul> |

|                |                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30-4 p.m.    | Afternoon Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                                                                                                                                           |
| 5:30-6:30 p.m. | AANS Annual Business Meeting                                                                                                                                                                                                                                                                                                                                                |
| 6:30-8:30 p.m. | Dinner Symposia <ul style="list-style-type: none"> <li>• Low-grade Glioma at Fiola</li> <li>• Spinal Balance/Deformity at Bobby Van's Steakhouse</li> <li>• Contemporary Practice and New Frontiers in Stereotactic Radiosurgery at Occidental Grill &amp; Seafood</li> <li>• Aneurysm Management: An Evening Debate from a Global Perspective at Brasserie Beck</li> </ul> |
| 6-9:30 p.m.    | AANS History Section Dinner at George Washington's Mount Vernon                                                                                                                                                                                                                                                                                                             |
| 8-9:30 p.m.    | AANS International Reception at the Potomac View Terrace                                                                                                                                                                                                                                                                                                                    |



# REGISTER FOR 2 BREAKFAST SEMINARS, ATTEND THE 3RD FREE!

## BREAKFAST SEMINARS

7-9 a.m.

Fee: \$100 each, breakfast will be served in each room.

### 101 ABNS Board Preparation: What You Must Know

#### SOCIOECONOMIC TRACK



Candidate & Medical Student Fee: \$0

Moderator: Alan R. Cohen, MD, FAANS

Panelists: Jeffrey N. Bruce, MD, FAANS; E. Sander Connolly Jr., MD, FAANS; Christopher I. Shaffrey, MD, FAANS

The panelists will describe the certification process from residency to ABNS certification. Emphasis will be placed on strategies to prepare for the ABNS oral examination.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss requirements for board certification; and
- Prepare for the ABNS oral examination.



### 102 Return-to-play After Sports Injury I: Concussion

#### NEUROTRAUMA TRACK



Moderator: Mark D. Krieger, MD, FAANS

Panelists: Michael Lee Levy, MD, PhD, FAANS; Mark R. Proctor, MD, FAANS; Allen Kent Sills, MD, FAANS

The identification and management of sports-related injuries has received much recent attention in the press and in the neurosurgical literature. This seminar will address the neurosurgeon's role in evaluating and clearing children, high school athletes, college athletes and professional athletes with concussions.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the standard tests and techniques for evaluating the injured athlete;
- Describe the pathophysiology of sports-related injuries; and
- Apply the data and expert opinion on return-to-play guidelines to their practice.

## NEW 103 Spasticity Management

### PEDIATRICS TRACK



**Moderator:** Michael David Partington, MD, FAANS

**Panelists:** Michael Healy, MD; Patrick Graupman, MD

Management of spasticity in childhood crosses multiple disciplines, with patients often requiring multiple interventions in their lifetimes. This course will review the diagnosis of spasticity, the surgical options (including intrathecal Baclofen, rhizotomies and peripheral neurectomy) and the orthopedic considerations involved.

#### Learning Objectives:

- Describe the diagnosis and evaluation of spasticity versus other forms of hypertonicity;
- Explain the surgical options for managing spasticity; and
- Cite the common association with musculoskeletal abnormalities and the need for coordinated, multidisciplinary assessment.

## 104 Surgical Treatment of Parkinson's Disease

### STEREOTACTIC AND FUNCTIONAL TRACK



**Moderator:** Robert R. Goodman, MD, PhD, FAANS

**Panelists:** David Charles, MD; Stephen Grill, MD, PhD; Paul A. House, MD, FAANS; Andre Guelman Machado, MD, PhD; Julie G. Pilitsis, MD, PhD, FAANS

Participants will discuss current surgical targets for Parkinson's disease, including a variety of technical approaches and complications.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify potential brain targets for deep brain stimulation (DBS) in Parkinson's disease;
- Discuss technical alternatives in placement of DBS electrodes; and
- Review complications of DBS for Parkinson's disease.

## 105 Shoulder vs. Spine: Differentiating Shoulder and Cervical Spine Pathology

### SPINE TRACK



**Moderator:** Paul Kraemer, MD

**Panelists:** Nathaniel P. Brooks, MD, FAANS; Leigh Ann Curl, MD; Michael Louis Smith, MD, FAANS; Brian R. Subach, MD, FAANS

Differentiation between shoulder or spinal pathology, or a combination of the two, is critical for optimal patient care. This course will familiarize neurosurgeons with intrinsic shoulder pathology that may mimic radiculopathy or other cervical spine disorders, and review uncommon radiculopathies, facet syndromes and other spinal pathology presenting as shoulder pain. Faculty will include a neurosurgical spine surgeon, an orthopaedic spine surgeon and an orthopaedic shoulder specialist.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review shoulder anatomy, exam and common disorders that may mimic spinal pathology;
- Review upper cervical radicular patterns, facet dynamome maps and other spinal disorders;
- Review pain syndromes that may mimic shoulder or spinal pathology; and
- Discuss diagnostic strategies to recognize and differentiate between the shoulder and spine.



## 106 If I Could Do That Case Over Again: Discussion of Complications of Spine Surgery

### SPINE TRACK



**Moderator:** Michael G. Kaiser, MD, FAANS

**Panelists:** Paul M. Arnold, MD, FAANS; Iain H. Kalfas, MD, FAANS; Sergey Neckrysh, MD, FAANS; Gerald E. Rodts Jr., MD, FAANS

Experienced neurosurgeons of various spine specialties will discuss their own complications and how they would avoid them next time.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss complications in cases of minimally invasive spine, fusions and deformity corrections; and
- Utilize techniques to avoid complications in cases of minimally invasive spine, fusions and deformity corrections.

## 107 Intramedullary Spinal Cord Tumors

### SPINE TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** George I. Jallo, MD, FAANS

**Panelists:** Lawrence F. Borges, MD, FAANS; Jacques Brotchi, MD, PhD; Russell R. Lonser, MD, FAANS; Paul C. McCormick, MD, FAANS

This seminar will focus on the clinical evaluation and the current surgical management of intramedullary tumors of the spinal cord.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Evaluate methods and strategies to reduce peri-operative complications;
- Identify operative techniques to optimize safe achievement of optimal outcomes; and
- Assess recent technical advances in the operative management of intramedullary spinal cord tumors.

## 108 Management of Vasospasm

### CEREBROVASCULAR TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** Peter David Le Roux, MD, FAANS

**Panelists:** Rose Du, MD, PhD, FAANS; Aaron S. Dumont, MD, FAANS; Brian L. Hoh, MD, FAANS; John David Laidlaw, FRACS; R. Loch Macdonald, MD, PhD, FAANS

This seminar will present the current status of treatment measures for vasospasm. There will be presentations of cases that highlight difficulties in the treatment of cerebral vasospasm.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Cite the treatments available for cerebral vasospasm and describe common indications for their use;
- Cite levels of evidence upon which treatments for vasospasm are based; and
- Recognize experimental, clinical and laboratory assessments of treatments for vasospasm.

## 109 Lumbar Interbody Fusion: Direct Lateral Retroperitoneal Transpsoas Fusion

### SPINE TRACK



**Moderator:** Adam S. Kanter, MD, FAANS

**Panelists:** John C. Liu, MD, FAANS; John E. O'Toole, MD, FAANS; Chad J. Prusmack, MD, FAANS; Juan Santiago Uribe, MD, FAANS

This seminar will describe conditions amenable to lumbar interbody fusion (LIF) and basic surgical approaches, instrumentation and complications of LIF.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the indications for LIF and the appropriate investigations to consider in the workup of patients;
- Explain the advantages and disadvantages of various LIF techniques, including minimally invasive options; and
- Discuss the relevant approach anatomy, as well as the latest technical advances, related to LIF surgery.

## 110 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices

### SOCIOECONOMIC TRACK



**Moderator:** *Craig Andrew Van Der Veer, MD, FAANS*

**Panelists:** *Catherine Anne Mazzola, MD, FAANS; Troy D. Payner, MD, FAANS; Clarence B. Watridge, MD, FAANS*

The objective of this course is to highlight the role of various business models in the practice of neurosurgery, so neurosurgeons can adapt with the changes taking place in practices, hospitals, health-care systems, liability reform, insurances and government agencies. This course will discuss the various applications of business principles in order to protect and preserve patient care, while expanding the neurosurgical practice.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain how changes in health-care practice have imposed administrative demands on neurosurgeons;
- Assess lessons learned from various business models, liability reform and steps to decision-driven change management for health care; and
- Analyze the process of decision-making and optimize our role in evaluating future changes, including liability reform, and how these changes should be implemented.



## 111 Neurosurgical Management of Intractable Pain

### PAIN TRACK



**Moderator:** *Robert M. Levy, MD, PhD, FAANS*

**Panelists:** *Kim J. Burchiel, MD, FAANS; Dirk De Ridder, MD, PhD; Konstantin V. Slavin, MD, FAANS; Christopher J. Winfree, MD, FAANS*

This seminar will review indications, techniques and outcomes of contemporary neurosurgical procedures for the treatment of intractable pain. Attention will be directed toward practical applications of therapies that can be used in a general neurosurgical practice.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Compare the relative roles of noninvasive and invasive therapies for pain treatment;
- Contrast the common indications for stimulation and drug-delivery therapies for pain management; and
- Describe outcomes of neuromodulation therapies for pain management.

## 112 Stem Cell Therapeutics in Neurosurgery

### STEREOTACTIC AND FUNCTIONAL TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Nathan R. Selden, MD, PhD, FAANS*

**Panelists:** *John A. Boockvar, MD, FAANS; Nicholas M. Boulis, MD, FAANS; Bob S. Carter, MD, PhD, FAANS; Maciej S. Lesniak, MD, FAANS; Ann M. Parr, MD, FAANS; Gary K. Steinberg, MD, PhD, FAANS*

Stem-cell transplantation offers a new potentially revolutionary approach to currently untreatable central nervous system diseases. Speakers will report on the scientific underpinnings, delivery mechanisms and early use of stem-cell CNS transplantation to treat human disease, as well as pragmatic and societal challenges to progress

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the scientific rational for CNS stem-cell therapy, and list various transplantation delivery mechanisms; and
- Describe the design and results of early clinical trials.

## 113 Controversies in Cerebrovascular and Endovascular Neurosurgery

### CEREBROVASCULAR TRACK



**Moderator:** *Erol Veznedaroglu, MD, FAANS*

**Panelists:** *Kevin M. Cockroft, MD, FAANS; Ling Feng, MD; Michael T. Lawton, MD, FAANS; Elad I. Levy, MD, FAANS, MBA*

The introduction and acceptance of endovascular therapies for cerebrovascular disorders has revolutionized the treatment for cerebrovascular disease. With more cerebrovascular neurosurgeons becoming trained in both techniques, the treatment paradigms are changing and often controversial. This seminar will examine the different treatment modalities for carotid artery disease, intracerebral aneurysms and arteriovenous malformations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Define the indications of either carotid endarterectomy or carotid angioplasty and stenting for extracranial carotid artery stenosis;
- Describe the indications and the most effective treatment of small arteriovenous malformations and the role of preoperative embolization; and
- Use evidence-based medicine in conjunction with current practice to determine which patients will benefit most from endovascular therapies or traditional open surgeries.



## 114 Beginning Your Academic Career: Answers to Your Questions

### SOCIOECONOMIC TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Robert J. Dempsey, MD, FAANS*

**Panelists:** *Mustafa Kemal Baskaya, MD, FAANS; Todd Cameron Hankinson, MD, MBA, FAANS; Jeffrey R. Leonard, MD, FAANS; Christopher M. Loftus, MD, FAANS; Jon H. Robertson, MD, FAANS; Shenandoah Robinson, MD, FAANS*

This will be an open forum for residents and faculty in academic programs seeking advice on how to advance their careers. Faculty will include prominent heads of academic programs.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain future trends in academia and academic medicine; and
- Discuss career management in academia with experts.

## 115 The Spectrum of Adjuvant Therapy for Brain Tumors

### TUMOR TRACK



**Moderator:** *Frederick F. Lang Jr., MD, FAANS*

**Panelists:** *Erin M. Dunbar, MD; Randy Lynn Jensen, MD, PhD, FAANS; James M. Markert Jr., MD, FAANS; Andrew Morokoff, FRACS*

This seminar will provide a state-of-the-art review of the different adjuvant treatment options available for patients with malignant brain tumors. It will review current standards of care and then explore newer treatment options, including targeted therapies, intratumoral strategies, immunotherapeutic approaches and viral therapies.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe current standards of care for adjuvant therapy of malignant gliomas, as well as current scientific advances and newly developed adjuvant therapies for them;
- Discuss current problems with the design of effective therapies and recommend appropriate treatment options for patients with brain tumors; and
- Design the best treatment programs, based on current data.

## 116 Suprasellar and Juxtapellar Tumors: Complications and Avoidance

### TUMOR TRACK



Candidate & Medical Student Fee: \$0

**Moderator:** Harry R. van Loveren, MD, FAANS

**Panelists:** Khaled M. A. Aziz, MD, PhD, FAANS; Griffith R. Harsh IV, MD, FAANS; Wan Tew Seow, MD; Philip V. Theodosopoulos, MD, FAANS

This seminar will concentrate on explaining the approaches and indications for surgical therapy of lesions in the suprasellar region in adults and children. Appropriate preoperative evaluation and surgical decision-making will be discussed. Innovative surgical techniques will be presented. Management of the most common lesions arising in this area will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review the options for surgical approaches to suprasellar and juxtapellar tumors;
- Explain the options for cranial approaches to this region; and
- Describe the anatomy of the endoscopic transsphenoidal approach.

## 117 Management of Adult Scoliosis

### SPINE TRACK



**Moderator:** Christopher I. Shaffrey, MD, FAANS

**Panelists:** Peter Douglas Angevine, MD, MPH, FAANS; Tyler Robert Koski, MD, FAANS; Juan Santiago Uribe, MD, FAANS; Yan Wang, MD

This seminar will discuss the strategies, evaluation and management of adult spinal deformities. Special emphasis will be placed on the association of spinal deformities with conditions commonly treated by neurosurgeons.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss natural clinical and radiographic history of idiopathic and degenerative scoliosis in adults;
- Detail appropriate clinical and radiographic evaluation of, and determine non-operative and operative treatment options for, adult spinal deformity; and
- Identify patient-related factors that compromise surgical treatment outcomes and increase complications, and discuss treatment strategies.

## 118 New and Evolving Technologies for Minimally Invasive Lumbar Disc Surgery

### SPINE TRACK



**Moderator:** Charles L. Branch Jr., MD, FAANS

**Panelists:** Dean Chou, MD, FAANS; Larry T. Khoo, MD; Jean-Pierre Mobasser, MD, FAANS; Paul Park, MD, FAANS; Michael Y. Wang, MD, FAANS

This seminar will present and evaluate new technologies for treating pathologies of the lumbar disc.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Evaluate the safety and effectiveness of new lumbar disc technologies; and
- Describe current indications for use of new lumbar disc technologies.

## 119 Cerebral Trauma: State-of-the-art Treatment

### NEUROTRAUMA TRACK



**Moderator:** Alex B. Valadka, MD, FAANS

**Panelists:** V. K. Jain, MD; Geoffrey T. Manley, MD, PhD, FAANS; Joshua Eric Medow, MD, MS, FAANS; Jeffrey V. Rosenfeld, MD, MS

This seminar will review current and future treatment options for patients with traumatic brain injury.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss optimal management strategies for patients with traumatic brain injury; and
- Describe therapies that may become clinically available in the near future.

## 120 Tumor-Related Epilepsy

### TUMOR TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Mitchel S. Berger, MD, FAANS*

Panelists: *Edward F. Chang, MD; Hugues Duffau, MD; Jeffrey M Politsky, MD; Johannes Schramm, MD, Prof*

This seminar will provide an overview of the management of tumor-related seizures and refractory epilepsy. We will discuss how to optimize seizure control during surgical resections, including the use of pre- and intraoperative electrophysiological approaches, as well as decision-making resection strategies, such as when to perform an amygdalohippocampectomy. The use and efficacy of pre-operative and post-operative anti-epileptic medications also will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review the surgical outcomes for seizure control for patients with tumor-related epilepsy;
- Describe important technical consideration in surgical resection to optimize both tumor and seizure control, including the use of awake mapping, electrocorticography and hippocampectomy; and
- Explain the utility of pre-operative and post-operative anti-epileptic medication in controlling seizures.



## 121 Professional Issues: Challenges and Opportunities for the Neurosurgical Advanced Practice Provider

### SOCIOECONOMIC TRACK



Moderator: *Joshua J Beardsley, PA-C*

Panelists: *Dean Barone, PA-C MPAS; Kristen Butterfield, AAPA; Joseph A. Hlavin, PA-C; Ellen Rathfon, AAPA*

This interactive seminar will examine both the opportunities and challenges imposed by the New Patient Protection and Affordable Care Act on mid-level practice. It will provide a forum for discussion regarding the unique challenges of entering a neurosurgical practice and provide the participant with strategies for establishing, justifying and enhancing his or her current or future role within the neurosurgical field.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify three ways in which the new Patient Protection and Affordable Care Act will affect the neurosurgical care you currently provide; and
- Compare and contrast the choice of entering a private vs. hospital-based practice setting.

## 122 Lumbar Spine Fusion Indications and Complications

### SOCIOECONOMIC TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Joan Frances O'Shea, MD, FAANS*

Panelists: *Joseph S. Cheng, MD, MS, FAANS; Andrew T. Dailey, MD, FAANS; Eric M. Massicotte, MD, MSc, FAANS; Michael Y. Wang, MD, FAANS*

This seminar describes and discusses the issues of patient selection, surgical indication and surgical techniques as they pertain to lumbar fusion. A global approach will be provided.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the fundamentals of the surgical decision-making process;
- Discuss factors involved with patient selection for lumbar spine fusion; and
- Distinguish between the surgical strategies for lumbar spine fusion and their relative indications, as well as their pros and cons.

## NEW 123 “Rock and a Hard Place”: Management of Endovascular Neurosurgical Quandaries for the General Neurosurgeon

### CEREBROVASCULAR TRACK



**Moderator:** Adam S. Arthur, MD, MPH, FAANS

**Panelists:** Edward A. M. Duckworth, MD, MS, FAANS; Sean D. Lavine, MD, FAANS; Michael T. Lawton, MD, FAANS; Jacques J. Morcos, MD, FAANS

As neuroendovascular procedures become more prevalent, neurosurgeons are increasingly called upon to manage patients who have undergone these procedures. This course will review complications that can occur as a result of neuroendovascular procedures and helpful strategies for managing these complications.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify potential neuroendovascular complications;
- Discuss key requirements for managing antiplatelet medications in the presence of neuroendovascular devices; and
- Discuss management strategies that may be employed in these situations.

## NEW 124 Endovascular Management of Open Neurosurgical Complications

### CEREBROVASCULAR TRACK



**Moderator:** Adnan H. Siddiqui, MD, PhD, FAANS

**Panelists:** Mandy Jo Binning, MD, FAANS; Gavin W. Britz, MD, FAANS; Raymond Dwight Turner IV, MD, FAANS

Neuroendovascular techniques can provide a way to manage a variety of complications that may arise as a result of open cranial and spinal neurosurgery. This course will review these techniques and situations in which a neurosurgeon might request or employ them to good effect.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify situations in which neuroendovascular procedures are helpful in managing neurosurgical situations;
- Discuss the specifics of how these procedures may be employed; and
- Discuss patient management strategies in these situations.



## NEW 125 Selecting Anterior Approaches for Cerebrovascular Surgery: From Eyebrow to OZ – Pros and Cons of Minimally Invasive “Keyhole” Approaches for Cerebrovascular Surgery

### CEREBROVASCULAR TRACK



**Moderator:** Peter Nakaji, MD, FAANS

**Panelists:** Johnny B. Delashaw Jr., MD; Michael T. Lawton, MD, FAANS; Laligam N. Sekhar, MD, FAANS; Raymond Dwight Turner IV, MD, FAANS

A variety of craniotomies have been employed for anterior circulation aneurysm clipping. In this course, participants will become familiar with the various options, including the pterional, full and modified orbitozygomatic, mini-pterional, and supraorbital craniotomies. Participants will learn how to choose among the various options, the advantages and limitations of each and the technical nuances of performing each type of craniotomy.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the major types of craniotomies that allow access to the common sites of anterior circulation aneurysms;
- Select a specific craniotomy from among the various craniotomy options, based on the particular type of aneurysm to be clipped;
- Identify the advantages and limitations of minimally invasive craniotomies for aneurysm surgery; and
- Demonstrate the key technical steps in performing each type of craniotomy safely and efficiently.



## NEW 126 David Ferrier, Cerebral Localization, and the Origins of Brain Surgery

### HISTORY TRACK



**Moderator:** Samuel H. Greenblatt, MD, FAANS(L)

**Panelists:** Mark C. Preul, MD; Chris A. Sloffer, MD, MBA, FAANS

Historically, Sir David Ferrier (1843-1928) is one of the scientific world's best-kept secrets in plain sight. His central role in the experimental establishment of modern cortical localization is universally acknowledged and very little studied. There is no full length biography, and there are few historical analyses. For this seminar, we will read some of his early papers, as well as a book chapter in which he clearly invited surgeons to use his primate localization data to operate on the brain. The readings will be sent to participants approximately six weeks before the meeting. The panelists will be the entire audience. Dr. Greenblatt will make a few historical remarks to start, but there will be no formal presentations.

*Note: Please do not sign up for this seminar if you will not be able to read and ponder the assigned material. A quick skim on the plane to Washington, D.C., will not be sufficient.*

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Recognize the historical background to Ferrier's initial work, especially the importance of Fritsch and Hitzig and Hughlings Jackson;
- Recognize the nature and limits of what he did in his early experimental work;
- Recognize the role of Ferrier's data in the first modern brain operations; and
- Recognize why he has been neglected.

## 127 Emerging Indications in Neuromodulation Surgery

### CEREBROVASCULAR TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Joseph S. Neimat, MD, MSc, FAANS*

Panelists: *Robert E. Gross, MD, PhD, FAANS; Clement Hamani, MD; Andre Guelman Machado, MD, PhD; David W. Roberts, MD, FAANS*

The objective of this course is to discuss the culture of safety implementation in performing these minimally invasive surgeries, as well as complication avoidance with stereotactic and functional neurosurgery. This seminar also highlights the different techniques available to manage these complications.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss safety measures while performing stereotactic and functional neurosurgery;
- Identify complications associated with these surgeries; and
- Design strategies to manage these complications occurring during these surgeries.

## NEW 128 Management of Pediatric Epilepsy

### PEDIATRICS TRACK



Moderator: *Jeffrey G. Ojemann, MD, FAANS*

Surgical treatment for pediatric epilepsy can be a highly effective intervention in the appropriate candidate. The identification of a medically intractable patient and the timing of interventions may influence outcome. Surgical options range from very focal lesion treatment (resection or ablation) to hemispheric surgeries. The approach for a given patient will depend on many factors that, in turn, inform the pre-surgical work-up. This course will address these issues, focusing on the spectrum of surgical approaches and the identification of appropriate candidates. Additionally, cognitive and seizure outcome data for each approach will be reviewed in the context of both patient and surgical factors.

**Learning Objectives:**

- Describe algorithms for the identification and evaluation of candidates for surgical intervention;
- Recognize the efficacy of different surgical procedures for treating pediatric epilepsy; and
- Identify common surgical morbidities and mitigation strategies.

## LUNCH AND LEARN SEMINARS

### 1:15-2 p.m.

Up for a little learning during your lunch break? There will be several informative seminars provided by industry. Grab a free lunch and hear leaders in the neurosurgical field lead these sessions. These are non-CME events.

### The Neurosurgeon's Expanding Role in Metastatic Brain Tumor Treatment in the Era of Immunotherapy

- Targeted and Immunotherapy in Brain Metastases: Ready for Prime Time?  
*Manmeet Ahluwalia, MD*
- The Essential Role of SRS for Metastatic Tumors  
*Douglas Kondziolka, MD, FAANS*

The number of brain metastases diagnosed each year is growing, due to an aging population, ubiquitous imaging and extended survival afforded by increased use of

targeted and immunotherapies. Neurosurgeons have a key role in the care of these patients. With the advent of single-session stereotactic radiosurgery (SRS), a less nihilistic approach to the treatment of brain metastases is emerging. Experts will provide an overview of the landscape of systemic therapies and the use of SRS. Controversies, such as the maximum number of tumors treatable and the role of whole brain radiation therapy, will be addressed.

*Presented by Elekta.*

### Global Spinal Alignment: It Matters

- Clinical Importance of Global Alignment  
*Christopher I. Shaffrey, MD, FAANS*
- Lateral Lumbar Approaches  
*Juan Santiago Uribe, MD, FAANS*
- Anterior Lumbar Approaches  
*Regis W. Haid Jr., MD, FAANS*

9:45 a.m.-1 p.m.

## Plenary Session I

*Hunt-Wilson Lecture* – Jonathan Turley

*Richard C. Schneider Lecture* – Fredric B. Meyer, MD, FAANS

*AANS Presidential Address* – Robert E. Harbaugh, MD, FAANS

1:15-2:45 p.m.

## Advanced Practice Providers Luncheon

Fee: \$25

Location: Marriott Marquis Washington, D.C.

Moderator: Twyila Lay, NP, MS

Speaker: Tracey Anderson, CNRN, FNP-BC, ACNP-BC

As advanced practice providers come to play a more integral part of neurosurgical practice across all clinical settings, having the skills to negotiate for salary, benefits and perks that are important to your work-life balance will be critical to your success. Come learn ways to negotiate successfully, ask for what you want and get it and participate in a panel discussion where you will learn creative ways to get to “YES” when you ask for something.

This course will focus on the importance of spinal alignment in achieving optimal outcomes for degenerative and deformity lumbar surgery. Technical aspects and patient selection will be discussed.

*Presented by NuVasive, Inc.*

## The Neuro Suite of the Future: Real-time Navigation for Laser-ablation Therapy Moves to the OR

Participants can look forward to a didactic and case-based presentation and discussion using NeuroBlate for soft tissue lesion ablation with ClearPoint targeting in the VISIUS Surgical Theatre iMRI. Point selection, workflow and results all will be discussed.

*Presented by IMRIS Inc., Monteris Medical Inc. and MRI Interventions, Inc.*

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify steps to contract negotiation;
- Strategize ways other than salary to meet your objectives; and
- Create a win-win scenario for negotiating parties.

2-3:30 p.m.

## Operative Nuances I: Tackling Challenging Cases 3D Video Presentation

Moderator: Aaron A. Cohen-Gadol, MD, FAANS

Panelists: Frederick A. Boop, MD, FAANS; William T. Couldwell, MD, PhD, FAANS; Aaron S. Dumont, MD, FAANS; Juan Carlos Fernandez-Miranda, MD; Robert F. Spetzler, MD, FAANS

This 90-minute session will review important technical nuances for improving patient outcomes during complex cranial cases. Detailed surgical videos of different procedures (for tumorous and vascular lesions) by the surgical masters will be reviewed using 3D high-definition videos to maximize the learning experience for the viewers.

## The Hybrid OR: Planning and Execution

- **Planning: Who, What, When, Where and How?**  
Adam S. Arthur, MD, FAANS
- **Hybrid OR Enhanced Workflows**  
Yuichi Murayama, MD

Hospitals are looking to the hybrid operating room (OR) for economies of scale. Although the initial planning and execution involve budget considerations, sharing imaging capabilities among specialties promises to deliver multiple benefits. This session will provide a “lessons learned” approach to the planning and execution of a hybrid OR.

*Presented by Siemens Medical Solutions USA Inc.*

## Latest Advancements in the Management of Hydrocephalus

*Presented by Aesculap, Inc.*

See pages 94-95 for more information.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review indications for surgical treatment of complex deep-seated neoplastic and vascular lesions;
- Become familiar with general techniques for resection of complex lesions; and
- Become familiar with operative nuances to advance patient safety.

**2-5:30 p.m.**

## Scientific Sessions I-VI

- **Scientific Session I: Tumor**  
Ronald L. Bittner Lecture –  
*John H. Sampson, MD, PhD, FAANS*
- **Scientific Session II: Spine**  
*Christopher I. Shaffrey, MD, FAANS*
- **Scientific Session III: Stereotactic and Functional Surgery**  
*Kevin Tracey, MD*
- **Scientific Session IV: Pediatrics**  
Matson Lecture –  
*Mark Wietcha, President and Chief Executive Officer Children's Hospital Association*
- **Scientific Session V: Cerebrovascular**  
*Peter A. Rasmussen, MD, FAANS*
- **Scientific Session VI: Neurotrauma and Critical Care**  
*Andrew I. R. Maas, MD, PhD*

## DINNER SYMPOSIA

**6:30-8:30 p.m.**

### SE130: Low-grade Glioma

**Location:** Fiola

**Fee:** \$195

**Moderator:** *Nader Sanai, MD, FAANS*

**Panelists:** *Ennio Antonio Chiocca, MD, PhD, FAANS;*  
*Hugues Duffau, MD; Frederick F. Lang Jr., MD, FAANS*

Gliomas are one of the most vexing problems in neurosurgery, though recent work suggests that low-grade gliomas could represent a special opportunity to change the course of the disease before it runs rampant. This special dinner symposia will be convened to informally discuss emerging tactics in low-grade glioma management, including emerging surgical strategies, new methods in molecular risk-stratification for targeted therapy and mapping-based paradigms to maximize extent of resection.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the current standards for microsurgical resection of low-grade gliomas, including data investigating the value of extent of resection;
- Describe the utility of emerging molecular biomarkers in managing low-grade gliomas in eloquent territories; and
- Define the microsurgical strategies for maximal resection of challenging insular gliomas in the dominant and non-dominant hemispheres.

Fabio Trabocchi is meticulous about his cooking – from the sourcing of ingredients, to the butchering of meat, to the Italian traditions that are the foundation of his dishes. Fabio Trabocchi's flagship restaurant, Fiola, offers a refined menu inspired by the regional cuisines of Italy and a nationally recognized wine program. Centrally located between the White House and the Capitol, Fiola is a destination for politicians, diplomats, and savvy diners with an appreciation for sophisticated food and ambiance.



6:30-8:30 p.m.

## SE129: Spinal Balance/Deformity

Location: Bobby Van's Steakhouse

Fee: \$195

Moderator: *Christopher Pearson Ames, MD, FAANS*

Panelists: *Udaya Kumar Kakarla, MD; Brian A. O'Shaughnessy, MD; Daniel M. Sciubba, MD, FAANS*

The course is comprised of specialists in the field of spinal deformity. Cases will be presented with focus on spinal balance and how it relates to clinical presentation and outcomes. Panelists will present cases demonstrating specific concepts in spinal deformity, such as patient selection based on spinal balance, levels of fixation, osteotomies, complication management and avoidance.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss global sagittal balance and cervical sagittal balance;
- Explain how sagittal balance relates to clinical outcomes;
- Discuss pelvic parameters; and
- Discuss complications and avoidance.

In 1969, Bobby Van's began in Bridgehampton, New York, and is renowned for catering to the likes of Truman Capote and other literary giants. Bobby Van's became so popular that Leona Helmsley personally swayed the owners to open their first Manhattan location in 1996, and later to Washington, D.C. Located just two blocks from The White House, this elegant club attracts sports figures, media moguls, power brokers and politicians.



6-9:30 p.m.

## AANS History Section Dinner

Location: George Washington's Mount Vernon

Fee: \$150

*Bus will depart from the Marriott Marquis Washington, D.C. at 6 p.m.*

**Rengachary Lecture:** *Dale C. Smith, PhD*

Dr. Smith presents the story of head trauma, the recognition of dangers of closed and penetrating trauma, and the determination to do something for the patient. It is a story of force empiricism in practice, the application of science and research methods to improve patient care and the challenges of massive epidemics of trauma generated during war, when the structure of the profession was scoped for the limited neurological trauma of peacetime events. It will discuss the roles of World War I and World War II in shaping the specialty of neurosurgery and then how neurosurgeons shaped care in future (fortunately smaller) wars, closing with the remarkable success of recent wars in Asia.

*Dale C. Smith, PhD, is Professor of Military Medicine and History in the Department of Military and Emergency Medicine, F. Edward Hébert School of Medicine, Uniformed Services University (USU) of the Health Sciences, Bethesda, Maryland. He is also a Consulting Historian for Military Medicine, the journal of the Association of Military Surgeons of the United States, and in 1987 he received the Laurance D. Redway Award for Excellence in Medical Writing.*





**6:30-8:30 p.m.**

## SE133: Contemporary Practice and New Frontiers in Stereotactic Radiosurgery

Location: Occidental Grill & Seafood

Fee: \$195

Moderator: Jason P. Sheehan, MD, PhD, FAANS

Panelists: Gus Beute, MD; Peter C. Gerszten, MD, MPH, FAANS; Douglas S. Kondziolka, MD, FAANS; Arjun Sahgal, MD; Philip V. Theodosopoulos, MD, FAANS

The field of stereotactic radiosurgery (SRS) is rapidly evolving as a result of expanding indications and technologic advances. SRS is routinely used as a standalone technique, for salvage, or in combination with a planned subtotal resection. The seminar will detail contemporary SRS practice with a specific focus on acoustic neuromas, brain metastases, and spinal metastases. Also, the role of registries will be discussed as it relates to advancement of the field, maintenance of certification, and practice improvement in SRS.

Share in over 100 years of Washington, D.C. history while enjoying classic American cuisine with the finest local ingredients at the iconic Occidental Grill & Seafood. Delight in the atmosphere of the dining room, surrounded by photos of political powerhouses, sports figures, and celebrities who've dined right where you are sitting. Visit the Occidental for the quintessential D.C. dining experience with a modern twist.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the contemporary role of stereotactic radiosurgery in the management of acoustic neuroma, metastases, and trigeminal neuralgia patients;
- Identify indications and outcomes associated with spinal radiosurgery for metastases; and
- Discuss the utility of and avenues for participation in prospective quality neurosurgical registries.



**6:30-8:30 p.m.**

## SE135: Aneurysm Management: An Evening Debate from a Global Perspective

Location: Brasserie Beck

Fee: \$195

Moderator: Adam S. Arthur, MD, MPH, FAANS; Jacques J. Morcos, MD, FAANS

Panelists: Evandro Pinto da Luz de Oliveira, MD, PhD; Joost De Vries, MD; Monika Killer, MD; Mika Niemela, MD, PhD

This Dinner Seminar will feature world-class microsurgical and endovascular experts who will present and defend their personal views on the state-of-the-art in aneurysm treatment, microsurgically and endovascularly. The moderators will also present cases to the speakers for debate and audience participation.



**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify inclusion and exclusion criteria for selecting microsurgical versus endovascular treatment for aneurysms;
- Describe all the possible complications germane to the treatment of complex aneurysms;
- Explain the high-end techniques of clip reconstruction and bypass surgery; and
- Discuss the indications for the use of stents, flow diverters, web and other novel technologies.

Brasserie Beck is a contemporary European-style brasserie in the heart of D.C.'s burgeoning McPherson Square neighborhood. Critically-acclaimed chef and owner, Robert Wiedmaier, stays true to his Belgian roots creating and cooking casual fare in the "brasserie style" of serving all day from lunch to late night. Beck's stunning and spacious bar boasts the most comprehensive Belgian beer list outside Belgium.

**8-9:30 p.m.**

### AANS International Reception at the Potomac View Terrace

Join leaders from the AANS, international neurosurgical organizations and special dignitaries during the 2015 AANS International Reception at Washington, D.C.'s Potomac View Terrace. This venue offers spectacular views of the many landmarks along the National Mall and the magnificent evening skyline of Washington, D.C.

Come mingle among the sites of the U.S. capital. There is no fee to attend; however, a ticket is required, which may be obtained at AANS Registration at The Walter E. Washington Convention Center. The AANS welcomes all AANS Annual Scientific Meeting registered attendees — especially our colleagues from outside the United States.

Each attendee must provide date of birth and either a driver's license or passport number, due to security restrictions at the venue.

# TUESDAY, MAY 5

*A Map*  
of the  
CITY OF WASHINGTON  
in the District of Columbia  
established as the permanent Seat of the Government  
— of the —

TUESDAY



|                  |                                                                                                                                                                           |                |                                                                                                                                                                                                                                                                |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-4 p.m. | AANS Registration                                                                                                                                                         | 2-5:30 p.m.    | Section Sessions                                                                                                                                                                                                                                               |
| 7-9 a.m.         | Breakfast Seminars (201-228)                                                                                                                                              |                | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Spine Section Session</li> </ul>                                                                                                                   |
| 9 a.m.-4 p.m.    | AANS Exhibit Hall                                                                                                                                                         |                |                                                                                                                                                                                                                                                                |
| 9-9:45 a.m.      | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                           | 2-5:30 p.m.    | Section Sessions Continued                                                                                                                                                                                                                                     |
| 9:30-9:45 a.m.   | Historical Vignettes: Horsley/Jefferson                                                                                                                                   |                | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Pain</li> </ul>                                                                                                                                                                                   |
| 9:45 a.m.-1 p.m. | Plenary Session II <ul style="list-style-type: none"> <li>• Theodore Kurze Lecture<br/>James C. Capretta</li> <li>• Cushing Orator<br/>Charles Krauthammer, MD</li> </ul> |                | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Pediatric Neurological Surgery</li> <li>• AANS/CNS Section on Tumors I</li> <li>• AANS/CNS Section on Women in Neurosurgery</li> <li>• AANS Section on History of Neurological Surgery</li> </ul> |
| 1-2 p.m.         | Lunch in the AANS Exhibit Hall                                                                                                                                            |                |                                                                                                                                                                                                                                                                |
| 1:15-2 p.m.      | Lunch and Learn Seminars<br>Non-CME Event                                                                                                                                 | 2-5:30 p.m.    | Advancements in Neurotrauma Care                                                                                                                                                                                                                               |
| 1:15-2:45 p.m.   | Young Neurosurgeons Luncheon                                                                                                                                              | 3:30-4 p.m.    | Afternoon Beverage Break in the AANS Exhibit Hall                                                                                                                                                                                                              |
| 2-3:30 p.m.      | Operative Nuances II:<br>Complication Avoidance 3D Video Presentation                                                                                                     | 6:30-8:30 p.m. | Dinner Symposia                                                                                                                                                                                                                                                |
|                  |                                                                                                                                                                           |                | <ul style="list-style-type: none"> <li>• Concussion at Joe's Seafood, Prime Steak &amp; Stone Crab</li> <li>• Minimally Invasive Surgery at 1789</li> </ul>                                                                                                    |

## BREAKFAST SEMINARS

7-9 a.m.

Fee: \$100 each, breakfast will be served in each room.

### 201 Update on Rx of Nerve Tumors/MPNST/Peripheral Nerve Spinal Tumors

#### TUMOR TRACK



**Moderator:** *Rajiv Midha, MD, MS, FAANS*

**Panelists:** *Kimberly S. Harbaugh, MD, FAANS; Michel Klot, MD, FAANS; Robert J. Spinner, MD, FAANS; Olawale A. R. Sulaiman, PhD; Eric L. Zager, MD, FAANS*

This seminar will focus on the current management of peripheral-nerve sheath tumors. An expert panel will provide clinical insights, technical nuances and highlight recent developments in the treatment of nerve tumors. Specific emphasis on considerations for the management of malignant peripheral nerve sheath tumors (MPNST) and nerve (including “dumbbell”) tumors involving the spinal axis will be provided. The format will consist of slide presentations followed by interactive case discussion around a few select cases to solidify how clinical decisions are made and also to expose the learner to the areas of controversy in the field.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- List options for the management of peripheral nerve tumors, MPNSTs and nerve tumors affecting the spinal axis;
- Become familiar with indications for surgery of nerve tumors; and
- Be aware of imaging and technical advances pertinent for managing nerve tumors.

### 202 Definition and Diagnosis of Brain Death

#### NEUROTRAUMA TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Alex B. Valadka, MD, FAANS*

**Panelists:** *Ann-Christine Duhaime, MD, FAANS; Owen Bruce Samuels, MD; Stacey C. Quintero Wolfe, MD, FAANS; Joseph Christopher Zacko, MD, FAANS*

Several decades have passed since it became accepted that medical technology can preserve a patient's hemodynamic stability even after total and irreversible cessation of brain function. In many hospitals, the increasing complexity of neurocritical care has led to uncertainty about basic principles of brain death. Use of confirmatory tests varies at different facilities, potentially causing confusion and even misdiagnosis.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the concept of brain death and common sources of confusion in recognizing it; and
- Describe and contrast various approaches taken to confirm the diagnosis of brain death.



TUESDAY

REGISTER FOR 2 BREAKFAST SEMINARS,  
**ATTEND THE 3RD FREE!**

## 203 Skating to Where the Puck Will Be: Strategies for Neurosurgery Practices and Programs to Compete in Health Care's Future

### SOCIOECONOMIC TRACK



Candidate & Medical Student Fee: \$0

**Moderator:** *Edie E. Zusman, MD, FAANS*

**Panelists:** *Domagoj Coric, MD, FAANS; Doug H. Kim, MD, FAANS; Stephen M. Papadopoulos, MD, FAANS(L); Karin R. Swartz, MD, FAANS*

Faculty will discuss how to build brand recognition in a crowded market; how health systems evaluate neurosurgical practices for purchase or alignment; the role of private and group practices in the hub-and-spoke model of academic institutions; how to align with accountable care organizations without becoming an employee; leveraging philanthropy for program development; how to compete based on outcomes analysis; and how to grow a cash-based practice. By predicting the future of health care, neurosurgeons should be able to position themselves most strategically using decision-driven change management.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain how to build brand recognition; and
- Discuss the practices and programs in our future healthcare systems.



## 204 Medical Liability I: “So You’ve Been Sued: What Now?”

### SOCIOECONOMIC TRACK



**Moderator:** *James R. Bean, MD, FAANS*

**Panelists:** *Michael A. Chabreja, Esq.; Stanley W. Fronczak, MD, JD, FAANS; Frederic T. Knappe*

This seminar will provide participants with an advanced and practical understanding of medical malpractice defense. Participants will be acquainted with the initial subjective and emotional responses to being named in litigation and their effect on the practitioner. Discussants will also provide insight as to the nature and functioning of the judicial system. Topics to be discussed will include practical advice to minimize subjective and emotional responses to being sued; proper conduct to follow when presented with a malpractice lawsuit; advice regarding how to prepare and give deposition testimony; and practical proactive techniques to form a winning physician-attorney team.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Effectively deal with the initial stress and phases of litigation;
- Explain the nature and purpose of the pre-trial processes;
- Explain the practical aspects of medical defense; and
- Develop an effective pretrial strategy with defense counsel.

## 205 Humanitarian Neurosurgery

### SOCIOECONOMIC TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Merwyn Bagan, MD, MPH, FAANS*

Panelists: *Robert J. Dempsey, MD, FAANS; Dilantha B. Ellegala, MD, FAANS; Peter Nakaji, MD, FAANS; Jack P. Rock, MD, FAANS*

The objective of this course is to describe the role and opportunities for neurosurgery in the developing world. It focuses on working in parts of the world that have limited resources and access to neurosurgical expertise. The discussion will focus on working in a crisis zone, such as earthquake-stricken Haiti, for a short period of time.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Apply humanitarian medicine to neurosurgery in the developing world; and
- Identify the role of neurosurgical mentorship in the developing world.

## 206 Surgical Approaches to the Lateral Skull Base

### CEREBROVASCULAR TRACK



Moderator: *Jeffrey J. Olson, MD, FAANS*

Panelists: *Jeremy N. Ciporen, MD; John G. Golfinos, MD, FAANS; Joung H. Lee, MD, FAANS; Harry R. van Loveren, MD, FAANS; William Alexander Vandergrift III, MD, FAANS*

This seminar will focus on clinical indications, technical aspects, complication avoidance, management, and reconstructive techniques for tumors and vascular lesions involving the lateral skull base. The emphasis will be on identification of anatomic structures critical for navigating the skull base safely from a lateral approach. The applicability of adjuncts to these surgical approaches, including endoscopy, frameless-guidance, intra-operative monitoring and intra-operative imaging, will also be addressed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the indications and contra-indications for the use of individual skull base surgical approaches, their anatomic nuances, and the pre-operative, intraoperative and postoperative management of these patients; and
- Consider the appropriate use of supplementary technologies to facilitate lateral base surgery, including endoscopy, frameless-guidance, intraoperative monitoring and intraoperative imaging.



## NEW 207 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery

### SPINE TRACK & TUMOR TRACK



**Moderator:** *Francesco Sala, MD*

**Panelists:** *Vedran Deletis, MD, PhD; Karl F. Kothbauer, MD*

This Course will review and discuss the state of the art in neurophysiological monitoring and mapping during surgery for intramedullary spinal cord tumors. The participants will become familiar with the neuromonitoring techniques aimed to continuously assess the functional integrity of somatosensory and motor pathways, as well as the principles for a critical interpretation of these evoked potentials. The impact of neuromonitoring on spinal cord tumor surgery will be discussed from both a functional and oncological perspective.

#### Learning Objectives:

- Become aware of the indications, advantages and limitations of different intraoperative neurophysiology techniques during spinal cord tumor surgery;
- Integrate neurophysiological information in the decision making process during critical steps of the surgery;
- Discuss the value of different corrective measures to be taken intraoperatively to counteract an impending injury to the spinal cord, as revealed by neuromonitoring; and
- Discuss the evidence for the use of neuromonitoring and its implication in terms of neurological outcome.



## 208 Challenging Spinal Cases: Pearls and Pitfalls

### SPINE TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Edward C. Benzel, MD, FAANS*

**Panelists:** *Deb A. Bhowmick, MD; Daniel Jin Hoh, MD, FAANS; Eric J. Woodard, MD, FAANS*

This seminar is designed to present challenging “real-life” spine cases that experienced faculty encountered and to allow discussion of these cases.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss how experienced surgeons overcome decision-making obstacles; and
- Explain the nuances of the clinical decision-making process.

## 209 Developing New Technology: Bringing Device to Market

### SOCIOECONOMIC TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Matthew A. Howard III, MD, FAANS*

**Panelists:** *John R. Adler Jr., MD, FAANS; Richard D. Bucholz, MD, FAANS; Kevin T. Foley, MD, FAANS; Michael W. McDermott, MD, FAANS*

This course will discuss how neurosurgeons brought ideas for new innovation and turned them into successful products. Negotiating industry relationships also will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the steps necessary to file a patent; and
- Discuss the regulatory issues and the steps necessary to develop prototypes.

## 210 Cervical Spondylotic Myelopathy

### SPINE TRACK



**Moderator:** *Iain H. Kalfas, MD, FAANS*

**Panelists:** *Michael G. Kaiser, MD, FAANS; Junichi Mizuno, MD, PhD; Praveen V. Mummaneni, MD, FAANS; Hiroshi Nakagawa, MD; Eric J. Woodard, MD, FAANS*

This seminar will look at how cervical myelopathy can be caused by disc herniation, hard bone spurring, congenital stenosis, OPLL and subluxations. In addition, there can be instability and deformity. Multiple cases will be presented, and the participants, followed by the panel, will review treatment options and guidelines.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the various pathologies in myelopathy; and
- Distinguish the operative treatment options for cervical spondylotic myelopathy, and review those operative success/failure rates.

## 211 Measuring Outcomes and Safety in Neurosurgery

### SOCIOECONOMIC TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** *Anthony L. Asher, MD, FAANS*

**Panelists:** *Beejal Y. Amin, MD ; Alan S. Boulos, MD, FAANS; Paul Joseph Camarata, MD, FAANS; James P. Chandler, MD, FAANS; Matthew Joseph McGirt, MD, FAANS; Jonathan R. Slotkin, MD*

This course will discuss the various safety protocols and outcome measures that are used in evaluating neurosurgery patients. This seminar will also identify the outcome measure that is best suited for neurosurgical patients in routine clinical practice.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify various safety protocols and apply them in routine neurosurgical practice;
- Determine the various outcome measures utilized to evaluate neurosurgical patients; and
- Identify the differences between outcome measures and select the one which is suited for most of the neurosurgical patients.

TUESDAY



## 212 Spondylolisthesis: Controversies in Management

### SPINE TRACK



**Moderator:** Philip R. Weinstein, MD, FAANS

**Panelists:** John Matthew Caridi, MD; Robert F. Heary, MD, FAANS; Juan Santiago Uribe, MD, FAANS; Michael Y. Wang, MD, FAANS

This program will include a complete discussion of spondylolisthesis with emphasis on degenerative spondylolisthesis, including treatment and treatment failures. In addition to recognizing the different types of lumbar spondylolisthesis, the program also will review the symptoms with natural history of each type. The seminar will address recent advances in diagnosis and treatment of lumbar spondylolisthesis.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review indications for current treatment options of degenerative and congenital spondylolisthesis;
- Recognize results and potential outcomes of treatment options for spondylolisthesis; and
- Describe complications and causes of treatment failure for degenerative spondylolisthesis.

## 213 Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery

### CEREBROVASCULAR TRACK



**Moderator:** Christopher M. Loftus, MD, FAANS

**Panelists:** Bob S. Carter, MD, PhD, FAANS; Hugh J. L. Garton, MD, MHSc, FAANS; Christopher Daniel Roark, MD; Bruce Tranmer, MD, FAANS

This course will update the neurosurgeon on DVT prophylaxis, reversal of coumadin, the use of Factor 7a and restitution of coagulation after neurosurgery procedures.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss appropriate use of Factor 7a;
- Explain how to rapidly reverse the effects of, and discuss when it is safe to restart, coumadin after neurosurgery procedures; and
- Discuss the most commonly used DVT prophylaxis measures.

## 214 Return-to-play After Sports Injury II: Spine Injury

### SPINE TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** Michael W. Groff, MD, FAANS

**Panelists:** Daniel C. Lu, MD, PhD, FAANS ; Christina Marie Notarianni, MD; Srinivas K. Prasad, MD

The identification and management of sports-related injuries has received much recent attention in the press and in the neurosurgical literature. This seminar will address the neurosurgeon's role in evaluating and clearing children, high school athletes, college athletes and professional athletes who have spine injuries.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the standard tests and techniques for evaluating the injured athlete;
- Describe the pathophysiology of sports-related injuries of the spine; and
- Apply the data and expert opinion on return-to-play guidelines to their practice.



## NEW 215 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors

### PEDIATRICS TRACK & TUMOR TRACK



**Moderator:** Ian F. Pollack, MD, FAANS

**Panelists:** Jeffrey Peter Greenfield, MD, PhD; Liliana C. Goumnerova, MD, FAANS, PhD; Phillip B. Storm, MD, FAANS

The goal of this session is to review recent advances in the molecular classification of childhood brain tumors and to understand how they are coming to influence treatment planning for medulloblastoma, low-grade glioma, and other childhood brain tumors.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the major subtypes of medulloblastoma and how molecular subtypes influence outcome and risk-adapted treatment options;
- Discuss the role of alterations in MAP kinase signaling pathway components in pilocytic astrocytoma and how novel therapies are being directed at these alterations; and
- Describe recent findings on the molecular classification of childhood high-grade gliomas and how these may eventually influence treatment planning for these tumors.

## 216 If I Could Do That Case Over Again: Discussion of Complications of Cranial Surgery

### CEREBROVASCULAR TRACK



**Moderator:** Anil Nanda, MD, MPH, FAANS

**Panelists:** Oliver Bozinov, MD; Steven L. Giannotta, MD, FAANS; Peter Nakaji, MD, FAANS

The objective of this course is to highlight the cases that had complications. The discussion includes relevant anatomy, approaches to the lesion in question (open and endoscopic) and how to choose the correct approach for a given lesion, including tumors and complex aneurysms. In addition, practical aspects of how to avoid complications during surgery will be discussed. Attendees are encouraged to bring interesting and difficult cases for discussion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review the relevant anatomy and approaches to the lesion in discussion, and distinguish between various approaches;
- Identify techniques to avoid complications during surgery; and
- Manage complications once they have occurred.

TUESDAY



## 217 Contemporary Stereotactic Radiosurgery

### STEREOTACTIC AND FUNCTIONAL TRACK



Candidate & Medical Student Fee: \$0

Moderator: Jason P. Sheehan, MD, PhD, FAANS

Panelists: Douglas S. Kondziolka, MD, FAANS; Michael Schulder, MD, FAANS; Arjun Sahgal, MD; John H. Shin, MD

This seminar will focus on contemporary principles and practice of stereotactic radiosurgery. The major intracranial and spinal indications, guidelines, techniques and outcomes will be detailed. In addition, complications and managing them will be outlined by the panel.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain basic aspects of radiosurgery planning;
- Discuss radiosurgery applications for brain and spinal tumors and AVMs, as well as indications of radiosurgery for functional disease of the brain; and
- Explain differences among the various radiosurgery techniques available.

## 218 Complications of Complex Spinal Surgery: Lessons Learned

### SPINE TRACK



Moderator: Ziya L. Gokaslan, MD, FAANS

Panelists: Anthony K. Frempong-Boadu, MD, FAANS; Russ P. Nockels, MD, FAANS; Anthony H. Sin, MD, FAANS; Kevin C. Yao, MD, FAANS

This seminar will utilize distinctive presentation and panel discussion of cases to analyze complications associated with complex spine surgery. An emphasis will be placed on complication avoidance and management.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Analyze the causes of surgical complications in the spine; and
- Formulate strategies to avoid and manage spine-surgery complications, and apply these principles to one's practice.

## 219 Resective Strategies for Epilepsy

### STEREOTACTIC AND FUNCTIONAL TRACK



Moderator: Gerald A. Grant, MD, FAANS

Panelists: Frederick A. Boop, MD, FAANS; Brent Randle O'Neill, MD, FAANS; David W. Roberts, MD, FAANS; Michael David Sather, MD, FAANS; Nitin Tandon, MD, FAANS

This seminar will examine the preoperative evaluation for surgery, as well as emphasize the changing description of the epileptogenic focus and how this may alter new surgical therapies.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the common preoperative evaluations for surgery;
- Describe what each evaluation provides; and
- Recognize how surgical approaches are made, based on these evaluations.

## 220 Open vs. Endoscopic Approaches to the Anterior Skull Base

### NEUROTRAUMA TRACK



Moderator: Chandranath Sen, MD, FAANS

Panelists: Ossama Al-Mefty, MD, FAANS; Carlos A. David, MD, FAANS; James J. Evans, MD, FAANS; Fred Gentili, MD, FAANS, MSc; Theodore H. Schwartz, MD, FAANS

This seminar will review the pathologic conditions affecting the anterior cranial base and surgical strategies employed for extradural, intradural and combined compartment lesions. Panelists will discuss steps in avoidance and management of complications, demonstrate specialized (expert) surgical approaches and indicate the appropriate application of emerging technology to anterior cranial base problems.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the various approaches to the anterior skull base; and
- List pathologies that would indicate use of an anterior skull base approach.

## 221 Vertebral Column Tumors

### TUMOR TRACK



**Moderator:** Mark H. Bilsky, MD, FAANS

**Panelists:** Peter C. Gerszten, MD, MPH, FAANS; Ehud Mendel, MD, FAANS; Laurence D. Rhines, MD, FAANS; Daniel M. Sciubba, MD, FAANS

This seminar will provide an overview of the management of both metastatic and primary spine tumors. In a case-based format, emphasis will be placed on decision frameworks and technical considerations in this complicated but common patient population.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Examine stereotactic radiosurgery as a tool for spine-tumor surgeons;
- Identify when to operate or irradiate metastatic tumors;
- Identify the roles and limitations of aggressive resection and separation surgery; and
- Describe the impact of the fibula on sacral primary tumor resection.



## 222 Endovascular vs. Microsurgical Techniques for the Optimal Treatment of Intracranial Aneurysms

### CEREBROVASCULAR TRACK



**Moderator:** Adel M. Malek, MD, PhD, FAANS

**Panelists:** Rocco A. Armonda, MD, FAANS; C. Michael Cawley, MD, FAANS; David M. Hasan, MD, FAANS; Demetrius K. Lopes, MD, FAANS; Jacques J. Morcos, MD, FAANS

This seminar will highlight the current controversies surrounding the optimal treatment of ruptured and unruptured intracranial aneurysms using the latest advances and developments in both modalities. Experts in the field will present their perspectives, experience and ideas for future study.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Evaluate latest advances and available outcomes data to determine their significance for ruptured and unruptured intracranial aneurysms;
- Assess treatment failures in intracranial aneurysms treated with either modality; and
- Assemble strategies for treatment and salvage of recurrent and difficult intracranial aneurysms.

## 223 Peripheral Nerve Entrapment Syndromes

### SPINE TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** Eric L. Zager, MD, FAANS

**Panelists:** Allan J. Belzberg, MD, FAANS; Line Jacques, MD, FAANS; Daniel H. Kim, MD, FAANS; Lynda Jun-San Yang, MD, PhD, FAANS

This seminar will discuss the evaluation and management of peripheral nerve-entrapment syndromes.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the clinical presentation and diagnostic evaluation of the various entrapment syndromes;
- Discuss the conservative and surgical management options of peripheral nerve-entrapment syndromes; and
- Describe the options and management for recurrent nerve entrapments.

## 224 Osteoporosis and Spinal Fusion Surgery

### SPINE TRACK



**Moderator:** Deborah L. Benzil, MD, FAANS

**Panelists:** Marc E. Eichler, MD, FAANS; Frank La Marca, MD, FAANS; Gregory R. Trost, MD, FAANS

This course will provide a state-of-the-art update on epidemiology, diagnosis, pathophysiology, medical management and preoperative treatment of osteoporosis, as well as explore the implications for spinal fusion. It also will help neurosurgeon decision-making that occurs increasingly in everyday office practice with the aging of the population. In addition, experts' "tricks of the trade" for avoiding complication when fusions are necessary in patients with osteoporosis will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the diagnosis, pathophysiology, medical management and pre-operative treatment of osteoporosis; and
- Explain the impact of osteoporosis on everyday spine practice and decision-making and describe techniques for avoiding complications in spinal surgery when treating patients with osteoporosis.

## 225 Low-grade Gliomas

### TUMOR TRACK



**Moderator:** Linda M. Liau, MD, PhD, FAANS

**Panelists:** Daniel P. Cahill, MD, PhD, FAANS; Susan M. Chang, MD; Katharine J. Drummond, MBBS, FRACS; George Samandouras, MD; David Schiff, MD; Jeffrey H. Wisoff, MD, FAANS; Manfred Westphal, PhD, MD; Jinsong Wu, MD

This seminar will provide an update on current evaluation and management of low-grade gliomas. The panel will address the variety of tumors and compare outcomes from different treatment strategies.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the range of pathologies included in low-grade gliomas; and
- Distinguish between different management strategies for low-grade gliomas.

## 226 Multidisciplinary Management of Cerebral AVMs

### CEREBROVASCULAR TRACK



**Moderator:** Erol Veznedaroglu, MD, FAANS

**Panelists:** Peter Nakaji, MD, FAANS; Bruce E. Pollock, MD, FAANS; Andrew J. Ringer, MD, FAANS; Gary K. Steinberg, MD, PhD, FAANS

This will be a comprehensive discussion of the multidisciplinary management of complex cerebral AVMs. The perspective of neurosurgeons, radio surgeons and interventionists will be presented.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss indications for treatment of patients with AVMs; and
- Describe the role of radio surgeons and interventionists in the treatment of patients with AVMs.

## 227 Complication Management and Avoidance in Vascular Neurosurgery

### CEREBROVASCULAR TRACK



**Moderator:** Louis J. Kim, MD, FAANS

**Panelists:** Cargill H. Alleyne Jr., MD, FAANS; Sepideh Amin-Hanjani, MD, FAANS; Gerardo Legaspi, MD; Robert H. Rosenwasser, MD, FAANS

Designed as a truly interactive, graduate-level course, this Breakfast Seminar will critically explore recently completed trials in the field of cerebrovascular and endovascular surgery. Participants will be required to read and study the "core readings," to be distributed to the participants several weeks prior to the session; readings will include brief questions and thoughts to consider. Key elements to consider when reviewing the publications will revolve around the study design, the interpretation of the results and ways to design a better study.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the elements of good trial design;
- Discuss the most recent multicenter trials in cerebrovascular and endovascular surgery; and
- Present alternative trial designs or follow-up studies that would enhance the extant literature.

## 228 Fluorescence Technologies in Neurosurgery: Present and Future Directions

### TUMOR TRACK



**Moderator:** Aaron A. Cohen-Gadol, MD, FAANS

**Panelists:** Miguel A. Arraez Sanchez, MD; Costas G. Hadjipanayis, MD, PhD, FAANS; David W. Roberts, MD, FAANS; Nader Sanai, MD, FAANS

This course will review the present and future technologies for intraoperative evaluation of neoplastic and vascular lesions. The participants will become familiar with fluorescence-guided resection of high-grade gliomas and management of vascular lesions. Both 5-ALA and fluorescein fluorophores will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the advantages and disadvantages of current fluorophores;
- Discuss the details related to current intraoperative imaging technologies available for the above fluorophores; and
- Evaluate the current research aimed at advancing this field.



9:45 a.m.-1 p.m.

### Plenary Session II

- *Theodore Kurze Lecture* – James C. Capretta
- *Cushing Orator* – Charles Krauthammer, MD

1:15-2 p.m.

### Lunch and Learn Seminars

Up for a little learning during your lunch break? There will be several informative seminars provided by industry. Grab a free lunch and hear leaders in the neurosurgical field lead these sessions. **These are non-CME events.**

#### Maximizing Lumbar Lordosis with MIS Techniques

This session will demonstrate advanced techniques for maximizing lumbar lordosis using an MIS approach. It will also highlight new technology, such as steerable expandable spacers.

*Presented by Globus Medical.*

#### Medtronic Surgical Synergy™

*Presented by Medtronic, Inc.*

#### Deep Hemorrhage Evacuation: A Game-changing Surgical Approach to a Largely Untreated Condition

*Presented by Penumbra, Inc.*

#### Multimodality Imaging for the Neurosurgeon

- *Experiences with CT Sliding Gantry*  
Joerg-Christian Tonn, MD

- *The Combi Suite in Neurosurgery*

Computed tomography and magnetic resonance advanced applications are fast becoming very important imaging tools for the neurosurgeon. This session will provide insight into the basics of how these applications can enhance diagnosis and treatment.

*Presented by Siemens Medical Solutions USA Inc.*

TUESDAY

**1:15-2:45 p.m.**

## Young Neurosurgeons Luncheon

Fee: \$10

Location: Marriott Marquis Washington, D.C.

Speaker: *Nelson M. Oyesiku, MD, PhD, FAANS*

**2-3:30 p.m.**

## Operative Nuances II: Complication Avoidance 3D Video Presentation

Moderator: *Cormac O. Maher, MD, FAANS*

Panelists: *Aaron A. Cohen-Gadol, MD, FAANS; Paul K. Gardner, MD, FAANS; Michael T. Lawton, MD, FAANS; Robert F. Spetzler, MD, FAANS*

This 90-minute session will review important technical nuances for complication avoidance during complex cranial cases. Detailed surgical videos of different procedures by the surgical masters will be reviewed using 3D high definition videos to maximize the learning experience for the viewers.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review alternative approaches for resection of complex lesions to avoid complications;
- Become familiar with general techniques to handle complex vascular/neoplastic lesions; and
- Become familiar with operative nuances to avoid complications.



## SECTION SESSIONS

**2-5:30 p.m.**

## AANS/CNS Section on Disorders of the Spine and Peripheral Nerves — Spine Section Session

Moderators: *R. John Hurlbert, MD, PhD; Frank La Marca, MD, FAANS*

**2-2:14 p.m.**

Management of Spinal Trauma: Indications for Early vs. Delayed Surgical Intervention

*Joseph S. Cheng, MD, MS, FAANS*

**2:15-2:29 p.m.**

Classification Systems for Spinal Trauma: Clinical Applications

*James S. Harrop, MD, FAANS*

**2:30-2:44 p.m.**

Treatment Protocols for Spinal Cord Injury: Effects on Functional Outcome

*Allan D. Levi, MD, PhD, FAANS*

**2:45-2:59 p.m.**

Biomechanical Considerations in Surgical Decision-making

*Michael Patrick Steinmetz, MD, FAANS*

**3-3:14 p.m.**

Minimally Invasive Surgical Approaches to the Treatment of Spinal Trauma

*Paul Park, MD, FAANS*

**3:15-3:29 p.m.**

Post-traumatic Spinal Deformity: Prevention and Treatment Options

*Praveen V. Mummaneni, MD, FAANS*

**3:30-4 p.m.**

Afternoon Beverage Break in the AANS Exhibit Hall

**4:01-5:10 p.m.**

Abstract Presentations

**5:11- 5:30**

Q&A

**2-5:30 p.m.**

## AANS/CNS Section on Pain

**Moderators:** Andre Guelman Machado, MD, PhD, Julie G. Pilitsis, MD, PhD, FAANS

**2-2:34 p.m.**

John Loeser Lecture: Neuromodulation for the Future:  
Competing or Complementary Interests?  
*Elliot Krames, MD*

**2:35-2:39 p.m.**

Q&A

**2:40-2:54 p.m.**

Low Back Pain Differential Diagnosis: Syndromes  
Mimicking Degenerative Spine Symptoms  
*Michael W. Groff, MD, FAANS*

**2:55-3:09 p.m.**

Peripheral Neuropathy Deferential Diagnosis: Syndromes  
Mimicking Nerve Entrapment Syndromes  
*Holly S. Gilmer, MD, FAANS*

**3:10-3:29 p.m.**

Fibromyalgia: Diagnostic Criteria, Differential Diagnosis  
and Current Management  
*Jennifer A. Sweet, MD*

**3:30-4 p.m.**

Afternoon Beverage Break in the AANS Exhibit Hall

**4:01-4:15 p.m.**

Complex Regional Pain Syndrome: Diagnosis and  
Management  
*Alon Y. Mogilner, MD, PhD, FAANS*

**4:16-4:30 p.m.**

Psychological Assessment of the Patient with Chronic  
Pain: Which Patients Should the Surgeon Select?  
And Not?  
*Jason M. Schwalb, MD, FAANS*

**4:31-5:30 p.m.**

Abstract Presentations

**2-5:30 p.m.**

## AANS/CNS Section on Pediatric Neurological Surgery

**Moderators:** John S. Myseros, MD, FAANS; Elias B. Rizk,  
MD; Robert F. Keating, MD, FAANS

**2-2:39 p.m.**

Controversies and Face-Off: Transition of Care to  
Adulthood: Expert Discussion Based on the Cystic  
Fibrosis and/or Congenital Heart Experiences  
*Laura Tosi, MD; Karen Kuehl, MD*

**2:40-2:59 p.m.**

Transition of Neurosurgery Care  
*Shenandoah Robinson, MD, FAANS*

**3-3:20 p.m.**

Updates in Chiari I  
*Cormac O. Maher, MD, FAANS*

**3:21-3:30 p.m.**

Q & A

**3:30-4p.m.**

Afternoon Beverage Break in the AANS Exhibit Hall

**4:01-4:20 p.m.**

Updates in Endoscopy  
*Alan R. Cohen, MD, FAANS*

**4:21-4:30 p.m.**

Q & A and Case Discussion

**4:31-5:20**

Abstract Presentations

**5:21-5:30**

Q & A



2-5:30 p.m.

## AANS/CNS Section on Tumors I

Moderators: Michael Edward Sughrue, MD; Allen E. Waziri, MD, FAANS

2-2:03 p.m.

Introduction

*Michael Edward Sughrue, MD*

2:04-2:21 p.m.

Insular Gliomas

*Frederick F. Lang Jr., MD, FAANS*

2:22-2:39 p.m.

Gliomas in Eloquent Speech Areas

*Matthew Christopher Tate, MD, PhD*

2:40-2:57 p.m.

Gliomas in Eloquent Motor/Sensory Areas

*Sujit S. Prabhu, MD, FAANS*

2:58-3:15 p.m.

Butterfly Gliomas

*Charles Teo, MD*

3:16-3:29 p.m.

Radiosurgery for Gliomas in Eloquent Areas

*Jason P. Sheehan, MD, PhD, FAANS*

3:30-4 p.m.

Afternoon Beverage Break in the AANS Exhibit Hall

4-5:30 p.m.

Abstract Presentations



2-5:30 p.m.

## AANS/CNS Section on Women in Neurosurgery

Moderators: *Julie G. Pilitsis, MD, PhD, FAANS, Gail L. Rosseau, MD, FAANS*

2-2:29 p.m.

Matching in Neurosurgery

*Julie G. Pilitsis, MD, PhD, FAANS*

2:30-2:59 p.m.

Mastering Residency

*Aruna Ganju, MD, FAANS*

3-3:29 p.m.

Giving Junior Partners the Skills to Succeed

*William T. Couldwell, MD, PhD, FAANS*

3:30-4 p.m.

Afternoon Beverage Break in the AANS Exhibit Hall

4:01-4:25 p.m.

Preparing for the Oral Boards and MOC—What's New in the Specialties - Spine Update

*Marjorie C. Wang, MD, MPH, FAANS*

4:26-4:50 p.m.

Preparing for the Oral Boards and MOC—What's New in the Specialties - Vascular Update

*Sepideh Amin-Hanjani, MD, FAANS*

4:51-5:15 p.m.

Preparing for the Oral Boards and MOC—What's New in the Specialties - Functional

*Aviva Abosch, MD, PhD, FAANS*

5:16-5:30 p.m.

Q&A

2-5:30 p.m.

## Section on History of Neurological Surgery

2-2:40 p.m.

Negotiating the Social Contract: The Medical Profession and American Society Across 200 Years

*Dale Smith, PhD*

2:41-2:50 p.m.

Q&A

2:51-2:55 p.m.

Introduction: Vesalius Award

*Chris A. Soffer, MD, MBA, FAANS*

2:56-3:29 p.m.

Abstract Presentations

3:30-4 p.m.

Afternoon Beverage Break in the AANS Exhibit Hall

4:01-5:30 p.m.

Abstract Presentations



2-5:30 p.m.

## Advancements in Neurotrauma Care

NEUROTRAUMA TRACK



Fee: \$100

Moderator: Twyila Lay, NP, MS

**Panelists:** Gregory W.J. Hawryluk, MD; Michael C. Huang, MD; Peter David Le Roux, MD, FAANS; Phiroz Erach Tarapore, MD; Shelly D. Timmons, MD, PhD, FAANS; Eve C. Tsai, MD, PhD, FAANS

This course will focus on specific decision-making challenges that the neurotrauma clinician faces in caring for the traumatically injured patient. A case-based didactic will be used to explore the pathophysiologic changes and the significance of goal-directed therapy. The course will allow participants to gain important insight into how and why various management strategies are instituted.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Compare and contrast changes made to the 2015 Severe TBI Guidelines;
- Describe the contemporary diagnosis and management of a broad spectrum of medical issues as they pertain to neurosurgical trauma patients;
- Discuss the preliminary results of the "BOOST" trial and the role of brain tissue oxygen in the management of severe traumatic brain; and
- Triage neurosurgical emergencies in a mass-casualty incident.

## DINNER SYMPOSIA



6:30-8:30 p.m.

### SE131: Concussion

Location: Joe's Seafood, Prime Steak & Stone Crab

Fee: \$195

Moderator: *Gail L. Rosseau, MD, FAANS*

Panelists: *H. Hunt Batjer, MD, FAANS; Samuel R. Browd, MD, PhD, FAANS; Richard G. Ellenbogen, MD, FAANS; Michael Lee Levy, MD, PhD, FAANS; Allen Kent Sills, MD, FAANS*

Sports-related concussion can be serious or even life-threatening if not managed correctly. Recent interest and research in the area of sports-related concussion has prompted reevaluations of treatment and management recommendations. In this session, panelists will discuss the impact sports-related concussion can have on athletes, how to recognize a suspected concussion and the proper protocols to manage a concussion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Diagnose and evaluate the concussion injuries related to the contact sports;
- Describe the basic pathophysiology of these concussion injuries; and
- Formulate guidelines on return-to-play policies and apply guidelines in routine clinical practice.

The legendary Joe's Stone Crab first opened in Miami Beach in 1913. It all began when Joseph Weiss, the "Joe" of Joe's Stone Crab, and his wife Jennie set up seven or eight tables on the front porch of the house they owned. 100 years later, Joe's has become one of the most beloved and widely recognized restaurants in the world, famous for its Florida Stone crab, signature sides and Key lime pie.

6:30-8:30 p.m.

### SE132: Minimally Invasive Surgery

Location: 1789

Fee: \$195

Moderator: *Michael Y. Wang, MD, FAANS*

Panelists: *Mick J. Perez-Cruet, MD, FAANS; William R. Taylor, MD, FAANS; Juan Santiago Uribe, MD, FAANS*

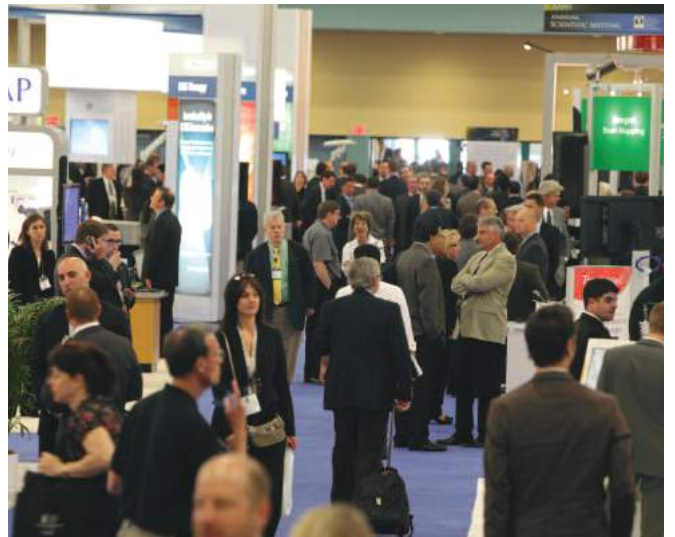
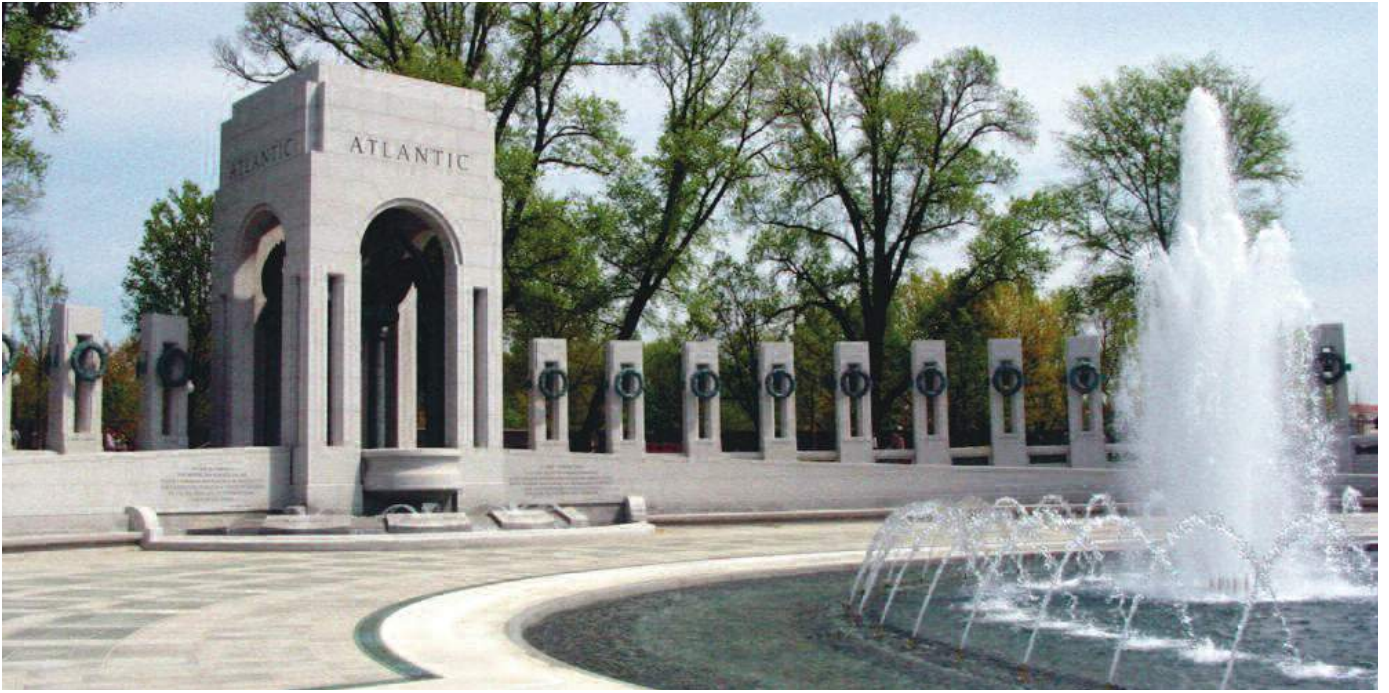
For the past 15 years, the techniques, indications and results from minimally invasive spinal (MIS) surgery have undergone a significant transformation. While MIS surgery was originally envisioned as a method for achieving surgical goals with less pain and shorter hospitalizations, the reality is that contemporary techniques now allow for the management of complex spinal conditions. The spectrum of indications where MIS surgery is likely to be beneficial now encompasses the management of professional athletes, the medically compromised and the extremely elderly.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the indications and limitations of MIS spine surgery;
- Describe the techniques for less-invasive surgery to minimize trauma to the soft tissues; and
- Discuss the economic implications of MIS spinal surgery.



1789 Restaurant is the quintessential Washington, D.C. dining experience, named for the year in which Georgetown University was founded. The restaurant was chosen by the readers of *Gourmet Magazine* as one of America's Top Tables. Decorated with American antiques, period equestrian and historical prints and Limoges china, its dining rooms offer comfortable surroundings in a renovated federal house.



# WEDNESDAY, MAY 6

WEDNESDAY



|                     |                                                                                                                                                                                                              |          |                                                                                                                                                          |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6:30 a.m.-3:30 p.m. | AANS Registration                                                                                                                                                                                            | 2-5 p.m. | Section Sessions                                                                                                                                         |
| 7-9 a.m.            | Breakfast Seminars (301-322)                                                                                                                                                                                 |          | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Peripheral Nerves Section Session</li> </ul> |
| 7:30-9 a.m.         | AANS/CNS Section on Women in Neurosurgery (WINS)<br>Breakfast with Sally Satel, MD                                                                                                                           |          |                                                                                                                                                          |
| 9 a.m.-2:15 p.m.    | AANS Exhibit Hall                                                                                                                                                                                            |          | <ul style="list-style-type: none"> <li>• AANS/CNS Cerebrovascular Section</li> </ul>                                                                     |
| 9-9:45 a.m.         | Morning Beverage Break in the AANS Exhibit Hall                                                                                                                                                              |          | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Neurotrauma and Critical Care</li> </ul>                                                    |
| 9:30-9:45 a.m.      | Historical Vignettes:<br>Leksell/Franklin                                                                                                                                                                    |          | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Stereotactic and Functional Surgery</li> </ul>                                              |
| 9:45 a.m.-1 p.m.    | Plenary Session III <ul style="list-style-type: none"> <li>• Louise Eisenhardt Lecture<br/>Sally Satel, MD</li> <li>• Rhoton Family Lecture<br/>Spencer Wells, PhD</li> <li>• Van Wagenen Lecture</li> </ul> |          | <ul style="list-style-type: none"> <li>• AANS/CNS Section on Tumors II</li> <li>• AANS/CSNS Socioeconomic</li> </ul>                                     |
| 1-2 p.m.            | Lunch in the AANS Exhibit Hall                                                                                                                                                                               |          |                                                                                                                                                          |

## BREAKFAST SEMINARS

7 a.m.-9 a.m.

Fee: \$100 each, breakfast will be served in each room.

### 301 How to Write and Publish a Successful Neurosurgical Manuscript

#### SOCIOECONOMIC TRACK



Candidate & Medical Student Fee: \$0

Moderator: Anil Nanda, MD, MPH, FAANS

Panelists: Michael L. J. Apuzzo, MD, FAANS(L); Michael Glantz, MD; Nelson M. Oyesiku, MD, PhD, FAANS; James T. Rutka, MD, PhD, FAANS

This course will familiarize neurosurgeons, residents and fellows with the art of translating scientific work into a meaningful and scientifically robust language. It will discuss the various formats of an article, as well as the ways of illustrating one's work in the form of graphs, tables, figures and artistic drawings. In addition, time will be spent on how to read an article scientifically and understand its strengths and weaknesses.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Review various types of articles, including original research, review articles and case reports;
- Review the various forms of plagiarism and how to avoid them; and
- Review how to use appropriate illustrations and statistical tests.



### 302 Chiari Malformations: Diagnosis, Treatments and Failures

#### STEREOTACTIC AND FUNCTIONAL TRACK



Moderator: Timothy B. Mapstone, MD, FAANS

Panelists: Ulrich Batzdorf, MD, FAANS(L); Mark R. Iantosca, MD, FAANS; David Delmar Limbrick Jr., MD, PhD, FAANS; Karin M. Muraszko, MD, FAANS

This seminar will focus on the pathophysiology of Chiari malformations, the indications for treatment, therapeutic options and the basis of their success and failure.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the current concepts of the pathophysiology of Chiari malformations; and
- Discuss the options and recognize the indications for treatment of Chiari malformations.

### 303 Update on Lumbar Stenosis

#### SPINE TRACK



Moderator: Robert E. Isaacs, MD, FAANS

Panelists: Maxwell Boakye, MD, FAANS; Christopher H. Comey, MD, FAANS; John E. O'Toole, MD, FAANS; Claudius Thome, MD

This seminar will evaluate short-term and long-term outcomes of both surgical and nonsurgical treatment of lumbar stenosis. It also will evaluate recently developed minimal-access treatments for stenosis.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the data underlying nonoperative therapies for spinal stenosis;
- Explain the data underlying conventional operative therapies for spinal stenosis; and
- Explain the data underlying the newer and less-conventional operative therapies for spinal stenosis.

## 304 Intracranial Endoscopy

### PEDIATRICS TRACK



Candidate & Medical Student Fee: \$0

Moderator: Alan R. Cohen, MD, FAANS

Panelists: James M. Drake, MD, FAANS, MSc; Johnathan A. Engh, MD, FAANS; David F. Jimenez, MD, FAANS; Henry W. S. Schroeder, MD, PhD; Laligam N. Sekhar, MD, FAANS

This seminar focuses on the state-of-the-art of intracranial endoscopic neurosurgery, including ventriculoscopic surgery, endoscope-assisted microsurgery, endoscopic transnasal surgery and endoscope-assisted craniosynostosis surgery.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the endoscopic treatment of hydrocephalus, cysts and tumors;
- Describe the indications for endoscopic transnasal and skull base surgery; and
- Evaluate the efficacy of endoscope assisted craniosynostosis surgery.

## 305 Management of Acute Spinal Cord Injury

### SPINE TRACK



Candidate & Medical Student Fee: \$0

Moderator: Michael G. Fehlings, MD, PhD, FAANS

Panelists: Richard C. E. Anderson, MD, FAANS; Todd Cameron Hankinson, MD, MBA, FAANS; Ann M. Parr, MD, FAANS; Joseph Christopher Zacko, MD, FAANS

This breakfast seminar will provide an up-to-date review of the pathophysiology, medical management, surgical options and recent clinical trials related to spinal cord injury.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss clinically relevant aspects of the pathophysiology of spinal cord injury, as well as the current concepts in the medical management of spinal cord injury;
- Explain the role and timing of surgical treatment for acute spinal cord injury; and
- Discuss recent developments in clinical trials for spinal cord injury.

## 306 Pituitary Tumors

### TUMOR TRACK



Candidate & Medical Student Fee: \$0

Moderator: Daniel F. Kelly, MD, FAANS

Panelists: Manish K. Aghi, MD, FAANS; William T. Couldwell, MD, PhD, FAANS; Nelson M. Oyesiku, MD, PhD, FAANS; Daniel Monte-Serrat Prevedello, MD; Jonas M. Sheehan, MD, FAANS

Participants will obtain a state-of-the-art update on endonasal surgical management of pituitary tumors, as well as medical and radiosurgical adjunctive therapies.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss surgical strategies for maximizing chances of remission in patients with acromegaly and Cushing's disease;
- Describe utility and technical nuances of endonasal endoscopic removal of pituitary adenomas; and
- Provide current treatment algorithms for patients with atypical and/or invasive pituitary adenomas.

## 307 New Innovations in Epilepsy Surgery

### STEREOTACTIC AND FUNCTIONAL TRACK



Moderator: Nicholas M. Barbaro, MD, FAANS

Panelists: P. David Adelson, MD, FAANS; Jean Regis, MD

This seminar will focus on the surgical approaches to epilepsy that do not involve removal of tissue. Various electrical stimulation techniques will be discussed, as well as procedures currently under investigation, such as radiosurgery and cerebral cooling. More traditional non-resective techniques, such as corpus callosotomy and multiple sub-pial transection, also will be included in this comprehensive discussion. Neurosurgical leaders in the respective fields will present the latest information on these topics.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe the indications and approaches to electrical stimulation in the surgical treatment of epilepsy; and
- Discuss the current experimental therapies being developed as non-resective strategies and review the currently approved non-resective surgical treatments of epilepsy.

## 308 Principles and Techniques of Deformity Correction in Adolescents and Young Adults

### PEDIATRICS TRACK & SPINE TRACK



Candidate & Medical Student Fee: \$0

**Moderator:** Amer F. Samdani, MD, FAANS

**Panelists:** Peter Douglas Angevine, MD, MPH, FAANS; Steven W. Hwang, MD, FAANS; Alexandros D. Powers, MD, FAANS; Anthony H. Sin, MD, FAANS

This seminar will discuss the classification and management of idiopathic, congenital, paralytic and iatrogenic deformity in the developing spine.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Detail appropriate clinical and radiographic evaluation of adolescents and young adult spinal deformity; and
- Identify patient-related factors that compromise surgical treatment.

## 309 Cavernous Malformation: Current Controversies in Management

### CEREBROVASCULAR TRACK



**Moderator:** Murat Gunel, MD, FAANS

**Panelists:** Helmut Bertalanffy, MD Prof; Michael T. Lawton, MD, FAANS; Robert F. Spetzler, MD, FAANS; Gary K. Steinberg, MD, PhD, FAANS

This seminar will use didactic and case-based discussion to explain the clinical diagnosis and management of patients with intracranial cavernous malformations.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the presentation, diagnosis and natural history of intracranial cavernous malformations;
- Review the expectant, surgical and radiosurgical treatment options for patients with cavernous malformations; and
- Review familiar cavernous malformation syndromes.

## 310 Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications

### SPINE TRACK



**Moderator:** Charles L. Branch Jr., MD, FAANS

**Panelists:** Richard G. Fessler, MD, PhD, FAANS; Kevin T. Foley, MD, FAANS; William R. Taylor, MD, FAANS; Luis Manuel Tumialan, MD, FAANS

This seminar will focus on endoscopic and minimally invasive techniques for cervical, thoracic and lumbar spine surgery. Techniques for decompression and fusion will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe various endoscopic and minimally invasive techniques for spinal surgery; and
- Discuss the indications, results and potential complications for these techniques.

## 311 How I Do It: Acoustic Tumors

### TUMOR TRACK



**Moderator:** Frederick G. Barker II, MD, FAANS

**Panelists:** Michael J. Link, MD, FAANS; L. Dade Lunsford, MD, FAANS; Andrew Thomas Parsa, MD, PhD, FAANS; Daniel R. Pieper, MD, FAANS; Marc S. Schwartz, MD, FAANS

The principles of selecting suitable approaches, techniques and tactics of multimodality treatment of acoustic neuromas will be described.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify the indications for operative treatment, radiation treatment, drug treatment and observation;
- Apply technical details of acoustic tumor surgery; and
- Discuss how to avoid complications and study the outcome of surgery, radiation treatment and observation.

## 312 Controversies in the Management of Intracerebral Hematomas

### NEUROTRAUMA TRACK



Candidate & Medical Student Fee: \$0

Moderator: *E. Sander Connolly Jr., MD, FAANS*

Panelists: *Neil A. Martin, MD, FAANS; Reid C. Thompson, MD, FAANS*

The pathophysiology of spontaneous intracerebral hemorrhage (ICH) will be described, as well as current treatment options. Recent ongoing clinical trials for treatment of ICH patients will be discussed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the management of intracerebral hemorrhage, according to current clinical evidence;
- Discuss rationale for current clinical studies; and
- Discuss evidence-based medicine in the management of a patient with intracerebral hemorrhage.



## 313 Spinal Motion Preservation Using the Posterior Column Implants

### SPINE TRACK



Candidate & Medical Student Fee: \$0

Moderator: *M. Samy Abdou, MD, FAANS*

Panelists: *Jean-Valery C. E. Coumans, MD, FAANS; H. Michael Mayer, MD, PhD; William C. Welch, MD, FAANS*

A wide range of treatment strategies and implantable devices have been developed to treat facet disease, spinal stenosis and other manifestations of posterior column disease. The biomechanical principle of each implant class, the results of recent clinical trials and the known limitations and failures on these implants will be presented by investigators in the field. In addition to motion preservation, the emerging practice of vertebral immobilization using spinous process fixation will be examined.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the normal anatomy of the posterior spinal column, as well as the pathophysiology of degenerative disease;
- Discuss the biomechanical basis of non-fusion technology;
- Explain the design features of both pedicle screw-based and interspinous process implants, as well as discuss their relevant clinical results; and
- Compare and contrast the differing treatment strategies.

## 314 Contemporary Management for Adult Hydrocephalus

### CEREBROVASCULAR TRACK



**Moderator:** Guy M. McKhann II, MD, FAANS

**Panelists:** Petra Margarete Klinge, MD, PhD; Mark G. Luciano, MD, PhD, FAANS; Daniele Rigamonti, MD, FAANS

This seminar will review the current management and controversies in the evaluation and treatment of adult (normal pressure) hydrocephalus.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss current pathophysiology of adult hydrocephalus;
- Describe preoperative evaluation strategies to determine surgical candidacy in adult hydrocephalus; and
- Evaluate the pros and cons of shunt surgery versus ETV in the management of adult hydrocephalus.

## 315 Management of Spinal Axis Trauma

### SPINE TRACK



**Moderator:** Gregory R. Trost, MD, FAANS

**Panelists:** Steven Casha, MD, PhD; Sanjay Dhall, MD, FAANS; Sean M. Lew, MD, FAANS; Charles Sansur, MD, FAANS

A variety of commonly encountered spine injuries/fractures will be discussed. The controversies and rationale for treatment strategies will be reviewed.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the pertinent issues and alternatives of surgery for spine injuries; and
- Review rationale for various spine trauma treatments.

## 316 Current Use of Biologic Graft Extenders for Spinal Fusion

### SPINE TRACK



**Moderator:** Nicholas Theodore, MD, FAANS

**Panelists:** Muwaffak M. Abdulhak, MD, FAANS; Allan D. Levi, MD, PhD, FAANS; Lakshmi Prasad, MD

This seminar will focus on cutting-edge strategies for spine stabilization, specifically focusing on bone-graft extenders, substitutes and biological adjuncts for fusion.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the use of biologics and graft extenders for use in spinal fusion;
- Discuss the current use of BMP for spinal arthrodesis;
- Discuss current and future use of biologics in treatments for spinal cord injury; and
- Discuss current and future use of biologics for disc disease.

## 317 Getting the Most out of Your Residency

### SOCIOECONOMIC TRACK



**Candidate & Medical Student Fee:** \$0

**Moderator:** Lawrence S. Chin, MD, FAANS

**Panelists:** Aruna Ganju, MD, FAANS; Matthew A. Howard III, MD, FAANS; B. Gregory Thompson Jr., MD, FAANS

This seminar will help medical students and beginning residents maximize their experience during residency.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Describe how to optimize your residency experience from getting in to achieving personal and academic success and finally choosing a job; and
- Discuss the challenges facing neurosurgery and how to position yourself for success in a changing health-care environment.

## 318 Functional Mapping of the Cerebral Cortex: Advantages and Limitations

### STEREOTACTIC AND FUNCTIONAL TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Richard W. Byrne, MD, FAANS*

Panelists: *Edward F. Chang, MD; Isabelle M. Germano, MD, FAANS; Alexandra J. Golby, MD, FAANS; Hiroto Kawasaki, MD; Daniel L. Silbergeld, MD, FAANS*

All aspects and methods of functional mapping for neurosurgery will be discussed, including removal of brain tumors, vascular lesions, and epilepsy for awake and asleep patients

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Identify and work within eloquent areas of the brain;
- Discuss the technologies available to localize eloquent cortex, how this can enhance the safety of the surgery and what their limitations are; and
- Describe common technical errors made in functional mapping.

## 319 Malignant Brain Tumors: State-of-the-art Treatment

### TUMOR TRACK



Moderator: *Joseph M. Piepmeier, MD, FAANS*

Panelists: *Ian F. Dunn, MD, FAANS; Michael Glantz, MD; Eric C. Holland, MD, PhD; Linda M. Liao, MD, PhD, FAANS; John H. Sampson, MD, PhD, FAANS; Graeme Woodworth, MD*

This seminar will discuss new advances in the management of malignant gliomas, including gene therapy, convection-enhanced drug delivery and immunotherapy. These advances will be discussed in the context of tumors managed by the neurosurgeon.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Examine innovative techniques for surgery;
- Review the tumor biology with gene and vaccine therapy; and
- Examine the role of stem cells in gliomas.

## 320 Cerebral Venous System: Surgical Considerations

### CEREBROVASCULAR TRACK



Candidate & Medical Student Fee: \$0

Moderator: *Jeffrey M. Sorenson, MD, FAANS*

Panelists: *Ossama Al-Mefty, MD, FAANS; Ashok R. Asthagiri, MD, FAANS; Turker Kilic, MD, PhD; Chandranath Sen, MD, FAANS*

This seminar will review the anatomy and surgery of the major venous sinuses and veins of the brain, and the approaches to the cavernous sinus and jugular foramen.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Explain the venous hazards of intracranial surgery;
- Recognize operative procedures to avoid injury and complications related to the major venous sinus intracranial veins, the cavernous sinus and jugular foramen; and
- Discuss the anatomy of the approaches to the cavernous sinus and jugular foramen.

## 322 Estate Planning and Tax Saving Strategies for the Neurosurgeon

### SOCIOECONOMIC TRACK



Moderator: *Robert Levin, MD, CFP*

Panelists: *Cynthia Hutchins, CRPC, CIMA; Michelle LaBaer Cooper; Charles Visconage, ChFC, CLU*

The course will be led by Robert Levin, MD, a certified financial planner, retired physician and former drug analyst on Wall Street who has directed a wealth-management practice for physicians and healthcare executives for the past 12 years. This course covers the current transfer tax landscape, gives strategies for reducing transfer taxes and shows how to control who receives assets and the manner in which they can be used. Safeguards for protecting assets from creditors will be discussed, along with how to set up different kinds of trusts and how to administer them. Plus, learn how to use life insurance to your advantage and how to integrate your retirement assets into your estate plan.

**Learning objectives:** After completing this educational activity, participants should be able to:

- Structure or update a basic estate plan
- Maximize the financial benefit of retirement plans, IRAs, etc.
- Incorporate philanthropy into your estate plan
- Reduce income, gift, and estate tax

## NEW 321 Neurosurgery, Psychiatry and Function: The History of Altering Behavior, Thought and Function Through Neurosurgery

### HISTORY TRACK



**Moderators:** Charles J. Prestigiacomo, MD, FAANS

**Panelist:** Michael Schulder, MD, FAANS

The history of neuroscience is full of attempts to alter behavior, thought and function through surgical treatment. From early attempts by Swiss psychiatrist Gottlieb Burckhardt in 1888 to the Nobel Prize-winning work of Egas Moniz in the early 20th century to deep brain stimulation from the 1960s onward, neurosurgeons have attempted to use surgery to influence complex brain functions. This seminar will review the efficacious as well as the dubious roles surgery has played as neuroscience has endeavored to understand the relationship between the brain and the mind.

**Learning Objectives:** After completing this educational activity, participants should be able to:

- Discuss the rise and fall of psychosurgery, including the scientific as well as the ethical and social issues; and
- Discuss the history of brain stimulation from its origins in animals to deep brain stimulation for an ever-expanding group of indications.

**7:30-9 a.m.**

### AANS/CNS Section on Women in Neurosurgery (WINS) Breakfast

**Location:** Marriott Marquis Washington, D.C.

**Fee:** \$100

**Speaker:** Sally Satel, MD

**9:45 a.m.-1 p.m.**

### Plenary Session III

- Louise Eisenhardt Lecture – Sally Satel, MD
- Rhoton Family Lecture – Spencer Wells, PhD
- Van Wagenen Lecture

## SECTION SESSIONS

**2-5 p.m.**

### AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Peripheral Nerves Section Session

**Moderators:** Line Jacques, MD, FAANS; Robert Spinner, MD, FAANS; Kimberly S. Harbaugh, MD, FAANS; Holly S. Gilmer, MD

**2-2:03 p.m.**

Introduction of the Kline Lecturer  
Lynda Jun-San Yang, PhD, FAANS

**Kline Lecture**

**2:04-3:05 p.m.**

Preferential Motor Reinnervation in Perspective  
Thomas M. Brushhart, MD

**Report from 2014 Kline Research Awardee**

**3:06-3:29 p.m.**

Therapies to Reduce Axonal Attrition and Misdirection Following Experimental Neuroma-in-continuity Nerve Injury  
Yuval Shapira, MD; Rajiv Midha, MD, FAANS

**Innovations in Surgical Treatment and Pain Management**

**3:30-3:33 p.m.**

Autograft vs. Tube/Allograft for the Repair of Major Nerves Case Presentation  
Wilson Ray, MD

**3:34-3:39 p.m.**

Autograft vs. Tube/Allograft for the Repair of Major Nerves  
Treatment1: Autograft  
Thomas Brushhart, MD

**3:40-3:45 p.m.**

Autograft vs Tube/Allograft for the Repair of Major Nerves  
Treatment 2: Tube/Allograft  
Rajiv Midha, MD, FAANS

**3:46-3:52 p.m.**

**Panel Discussants:** Allan Belzberg, MD, FAANS; Allen Maniker, MD, FAANS, Eric L. Zager, MD, FAANS

**3:53-3:56 p.m.**

Peripheral Nerve Pain Management: Case Presentation  
Shaun Thomas O'Leary, MD, PhD, FAANS

**3:57-4:02 p.m.**

Peripheral Nerve Pain Management  
Neuromodulation/Stimulation  
Christopher J. Winfree, MD, FAANS

4:03-4:08 p.m.

Peripheral Nerve Pain Management  
Ablation/Drez

*Amgad Saddik Hanna, MD, FAANS*

4:09-4:14

Panel Discussants: *Allan J. Belzberg, MD, FAANS; Allen H. Maniker, MD, FAANS; Eric L. Zager, MD, FAANS*

4:15-5:30 p.m.

Abstract Presentations

## 2-5 p.m.

### AANS/CNS Cerebrovascular Section

Moderators: *Peter Nakaji, MD, FAANS; Adam S. Arthur, MD, FAANS; Jonathan Russin, MD; Adnan Adib Abl, MD, FAANS*

2:00-2:05 p.m.

Introduction of Donaghy Lecture  
*Brian L. Hoh, MD, FAANS*

2:06-2:35 p.m.

Donaghy Lecture  
*Christopher S. Ogilvy, MD, FAANS*

2:36-2:50 p.m.

Debate I: Mastery Technical Cerebrovascular  
Neurosurgery: Shortening the Learning Curve

2:51-3:05 p.m.

Abstract Presentations

3:06-3:10 p.m.

Discussion

3:11-3:25 p.m.

Abstract Presentations

3:26-3:30 p.m.

Discussion

3:31-3:50 p.m.

Debate II: Optimizing Cerebrovascular Treatment - Early  
Adoption vs. Clinical Trials

3:51-4:15 p.m.

Abstract Presentations

4:16-4:20 p.m.

Discussion

4:21-4:40 p.m.

Special Lecture: Developing a Cerebrovascular System  
of Care

4:41-4:59 p.m.

Debate II: Ruptured Middle Cerebral Artery Aneurysms -  
Evidence for a "Coil First" versus "Clip First" Strategy

5-5:30 p.m.

Business Meeting

## 2-5 p.m.

### AANS/CNS Section on Neurotrauma and Critical Care

Moderator: *Kathryn Marie Beauchamp, MD, FAANS*

*Charles Tator Lecture*

*Susan Harkema, PhD*

*J. Douglas Miller lecture*

*Peter John Hutchinson, MD*

## 2-5 p.m.

### AANS/CNS Section on Stereotactic and Functional Surgery

Moderators: *Douglas S. Kondziolka, MD, FAANS; Nader  
Pouratian, MD, PhD, FAANS*

2-2:14 p.m.

Laser Ablation for Tumors  
*Eric Claude Leuthardt, MD, FAANS*

2:15-2:29 p.m.

Laser Ablation for Epilepsy  
*Robert E. Gross, MD, PhD, FAANS*

2:30-2:44 p.m.

FUS Ablation for Tremor  
*William Jeffrey Elias, MD, FAANS*

2:45 2:50 p.m.

Neurosurgical Face-off Case Discussion: Ablation for  
Movement Disorders  
*Takaomi Taira, MD, PhD*

2:51-3:00 p.m.

Neurosurgical Face-off Case Discussion: Stimulation for  
Movement Disorders  
*Philip A. Starr, MD, PhD, FAANS*

3:01-3:15 p.m.

Stimulation vs. Ablation for Cancer Pain  
*Dirk De Ridder, MD, PhD*

3:16-5:00 p.m.

Abstract Presentations

2-5 p.m.

## AANS/CNS Section on Tumors II

Moderators: *Randy Lynn Jensen, MD, PhD, FAANS;*  
*Sarah C. Fouke, MD, FAANS*

2-2:19 p.m.

Genomic Landscape of Glioblastomas  
*Cameron Walter Brennan, MD, FAANS*

2:20-2:39 p.m.

Intratumor Heterogeneity in Primary Glioblastoma  
*Anoop Premswaroop Patel, MD*

2:40-2:59 p.m.

Fusion Proteins as Unique Therapeutic Targets in Glioblastoma  
*Clark C. Chen, MD, PhD, FAANS*

3-3:19 p.m.

Immunology and Genomics  
*Gavin Peter Dunn, MD, PhD*

3:20-3:39 p.m.

Neurosurgeons Contributions to Clinical Trials  
*Andrew E. Sloan, MD, FAANS*

3:40-5 p.m.

Abstract Presentations

2-5 p.m.

## AANS/CSNS Socioeconomic

Moderator: *AJ Brown*

2-2:20 p.m.

Understanding Generational Communication Differences  
*Allan H. Friedman, MD, FAANS*

2:21-2:40 p.m.

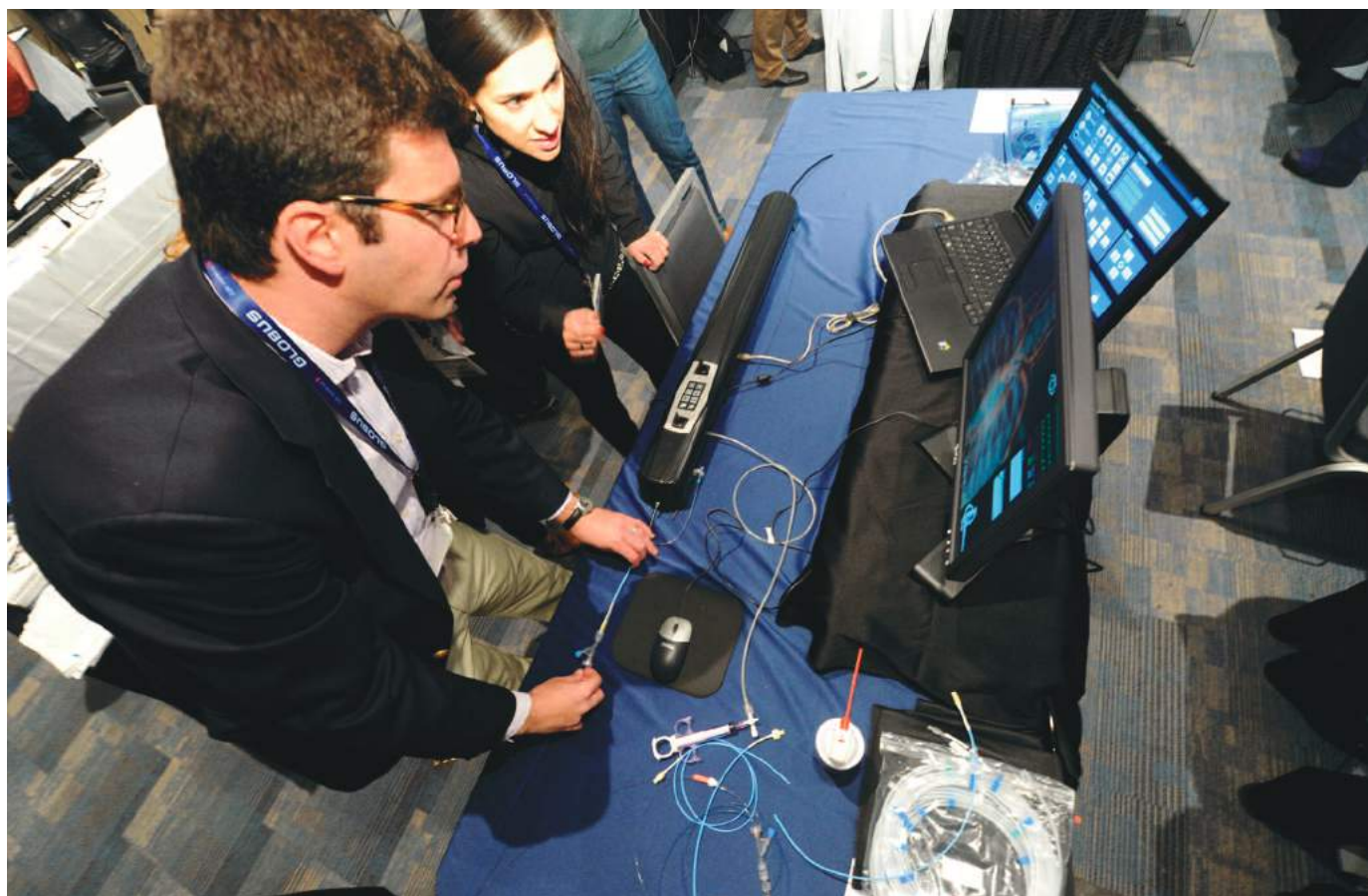
Applications to Patient and Provider-to-Provider Communication  
*Jeremy Todd Phelps, MD*

2:41-3 p.m.

Implications for Recruitment and Panel Discussion  
*AJ Brown*

3:01-5:00

Abstract Presentations



# SECTION ACTIVITIES

## AANS/CNS Cerebrovascular Section

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session V: Cerebrovascular

### WEDNESDAY, MAY 6

2–5 p.m.

Section Session

5–5:30 p.m.

Business Meeting

## AANS/CNS Section on Disorders of the Spine and Peripheral Nerves

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session II: Spine

### TUESDAY, MAY 5

2–5:30 p.m.

Spine Section Session

### WEDNESDAY, MAY 6

2–5 p.m.

Peripheral Nerves Section Session

## AANS/CNS Section on Neurotrauma and Critical Care

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session VI: Neurotrauma and Critical Care

### WEDNESDAY, MAY 6

2–5 p.m.

Section Session



## AANS/CNS Section on Pain

### TUESDAY, MAY 5

2–5:30 p.m.

Section Session

## AANS/CNS Section on Pediatric Neurological Surgery

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session IV: Pediatrics

### TUESDAY, MAY 5

2–5:30 p.m.

Section Session

## AANS/CNS Section on Stereotactic and Functional Surgery

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session III: Stereotactic and Functional Surgery

### WEDNESDAY, MAY 6

2–5 p.m.

Section Session



## AANS/CNS Section on Tumors

### MONDAY, MAY 4

2–5:30 p.m.

Scientific Session: Tumor

### TUESDAY, MAY 5

2–5:30 p.m.

Section Session: Tumor I

### WEDNESDAY, MAY 6

2–5 p.m.

Section Session: Tumor II

## AANS/CNS Section on Women in Neurosurgery

### TUESDAY, MAY 5

2–5:30 p.m.

Section Session

### WEDNESDAY, MAY 6

7:30–9 a.m.

Breakfast

Fee: \$100

Location: Marriott Marquis Washington, D.C.

(see page 83)

## AANS Section on the History of Neurological Surgery

### MONDAY, MAY 4

6–9:30 p.m.

AANS History Section Dinner

Fee: \$150

Location: George Washington's Mount Vernon  
(see page 55)

### TUESDAY, MAY 5

2–5:30 p.m.

Section Session

## AANS/CSNS Socioeconomic

### WEDNESDAY, MAY 6

2–5 p.m.

Section Session



# RELATED ORGANIZATIONS

## RELATED ORGANIZATIONS



### COUNCIL OF STATE NEUROSURGICAL SOCIETIES (CSNS)

May 2-3, 2015

Location: Marriott Marquis  
Washington, D.C.

Registration information at  
[http://www.aans.org/Annual%  
20Meeting/2015/Main/Section%20and  
%20CSNS%20Programs.aspx](http://www.aans.org/Annual%20Meeting/2015/Main/Section%20and%20CSNS%20Programs.aspx)



### NEUROSURGERY EXECUTIVES' RESOURCE VALUE & EDUCATION SOCIETY (NERVES)

April 30-May 2, 2015

Location: The Mayflower Renaissance  
Hotel in Washington, D.C.

Registration information at  
[http://www.nervesadmin.com/  
registration/](http://www.nervesadmin.com/registration/)



### AANS/CNS SECTION ON TUMORS 11TH BIENNIAL SATELLITE SYMPOSIUM

May 1-2, 2015

Location: Walter E. Washington  
Convention Center

Abstract Submission Deadline:  
Wednesday, Jan. 14, 2015 at 5 p.m. (CST)

[http://www.aans.org/en/Education%20a  
nd%20Meetings/Annual%20Meetings/A  
bstract%20Center.aspx](http://www.aans.org/en/Education%20and%20Meetings/Annual%20Meetings/Abstract%20Center.aspx)

Registration information at  
<http://tumorsection.org/>

# CANDIDATE (RESIDENT/FELLOW) AND MEDICAL STUDENT PROGRAMMING

## 10TH ANNUAL RESIDENT & FELLOW NEUROSURGICAL TOP GUN COMPETITION

Represent your residency program and face off against your colleagues in a challenging competition of neurosurgical skills, hosted by the Young Neurosurgeons Committee at the 83rd AANS Annual Scientific Meeting.

Along with bragging rights, prizes are awarded for the top-performing residency teams and top individual scores during the AANS Annual Scientific Meeting.

### TRAINING PROGRAM WINNER (1):

- \$1,500 for the Residency Training Program
- Official Recognition in the AANS Annual Report and Post-meeting communications to AANS members.

### INDIVIDUAL WINNERS (5):

- \$1,000 Cash Prize to Individual with Highest Combined Score
- \$200 Cash Prize for the Top Scorer at Each Station
- Official Recognition in the AANS Annual Report and Post-meeting communications to AANS members

## MARSHALS PROGRAM

In 2015, volunteers can again participate in another innovative AANS Annual Scientific Meeting that will feature the delivery and accessibility of all meeting content via the AANS Annual Scientific Meeting App.

The Annual Scientific Meeting Marshals Subcommittee has long depended on volunteers to ensure the quality and success of the Practical Clinics, Breakfast Seminars and AANS Annual Business Meeting.

As a volunteer, you can:

- Attend Practical Clinics or Breakfast Seminars, free of charge; and

- Meet senior members of the organization while serving in a leadership capacity within the AANS.

Responsibilities include:

- Answering questions related to the AANS Meeting App;
- Marshaling the Practical Clinic or Breakfast Seminar you attend (instructions will be provided);
- Assisting in session operation during Practical Clinics or Breakfast Seminars as directed; and
- Assisting with the AANS Annual Business Meeting.

For those interested in volunteering to serve as a marshal, please contact the AANS Department of Education and Meetings at [aansam@aans.org](mailto:aansam@aans.org), or check off the appropriate box on the registration form. Priority will be given to medical students and residents, especially those who have marshaled in the past. Early in 2015, you will receive a form to complete and submit, indicating your session preferences.

## SUNDAY, MAY 3

1-4:30 p.m. Young Neurosurgeons Research Forum  
Osler Lecture – A. John Popp,  
MD, FAANS(L)  
(see page 40)

## TUESDAY, MAY 5

1:15-2:30 p.m. Young Neurosurgeons Luncheon  
Fee: \$10

Location: Marriott Marquis Washington, D.C.

Speaker: Nelson M. Oyesiku, MD, PhD, FAANS

(see page 70)

## SESSIONS FOR CANDIDATES AND MEDICAL STUDENTS

Nineteen Practical Clinics and 28 Breakfast Seminars are being offered complimentary to residents, fellows and medical students.

Limited number of seats are available based on a first come first served basis.

## PRACTICAL CLINICS

- 001 Introduction to Cerebrovascular Neurosurgery for Residents (page 18)
- 003 Invention and Innovation in Neurosurgery (page 19)
- 005 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management (page 20)
- 006 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents (page 20)
- 007 Nuts and Bolts of Posterior Fossa Surgery: How I Do It (page 21)
- 008 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base (page 21)
- 013 Management of Incidental Imaging Findings (page 23)
- 014 Neurosurgeon Team Physician (page 24)
- 015 Update on Spinal Radiosurgery (page 24)
- 017 How to Tackle Difficult Cranial Cases: A Step-by-step 3D Case-based Presentation (page 25)
- 019 Brain Mapping and Awake Mapping Techniques (page 26)
- 022 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example (page 30)
- 023 Goodman Oral Board Review (page 31)
- 026 Update on Malignant Brain Tumors for the General Neurosurgeon (page 32)
- 031 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation (page 35)
- 032 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon (page 35)
- 034 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base (page 36)
- 035 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches (page 37)
- 036 Practical and Technical Aspects of Transsphenoidal Surgery (page 37)

## BREAKFAST SEMINARS

- 101 ABNS Board Preparation: What You Must Know (page 43)
- 107 Intramedullary Spinal Cord Tumors (page 45)
- 108 Management of Vasospasm (page 45)

- 112 Stem Cell Therapeutics in Neurosurgery (page 46)
- 114 Beginning Your Academic Career: Answers to Your Questions (page 47)
- 116 Suprasellar and Juxtapellar Tumors: Complications and Avoidance (page 48)
- 120 Tumor-related Epilepsy (page 49)
- 122 Lumbar Spine Fusion Indications and Complications (page 49)
- 127 Emerging Indications in Neuromodulation Surgery (page 52)
- 202 Definition and Diagnosis of Brain Death (page 59)
- 203 Skating to Where the Puck Will Be: Strategies for Neurosurgery Practices and Programs to Compete in Health Care's Future (page 60)
- 205 Humanitarian Neurosurgery (page 61)
- 208 Challenging Spinal Cases: Pearls and Pitfalls (page 62)
- 209 Developing New Technology: Bringing Device to Market (page 62)
- 211 Measuring Outcomes and Safety in Neurosurgery (page 63)
- 214 Return-to-play After Sports Injury II: Spine Injury (page 64)
- 217 Contemporary Stereotactic Radiosurgery (page 66)
- 223 Peripheral Nerve Entrapment Syndromes (page 67)
- 301 How to Write and Publish a Successful Neurosurgical Manuscript (page 77)
- 304 Intracranial Endoscopy (page 78)
- 305 Management of Acute Spinal Cord Injury (page 78)
- 306 Pituitary Tumors (page 78)
- 308 Principles and Techniques of Deformity Correction in Adolescents and Young Adults (page 79)
- 312 Controversies in the Management of Intracerebral Hematomas (page 80)
- 313 Spinal Motion Preservation Using the Posterior Column Implants (page 80)
- 317 Getting the Most out of Your Residency (page 81)
- 318 Functional Mapping of the Cerebral Cortex: Advantages and Limitations (page 82)
- 320 Cerebral Venous System: Surgical Considerations (page 82)

# ADVANCED PRACTICE PROVIDERS PROGRAMMING



## ADVANCED PRACTICE PROVIDERS PROGRAMMING

Saturday, May 2

8 a.m.-12 p.m.

Advanced Practice Providers Plenary Session I  
(see page 28)

Sunday, May 3

7:30-11:30 a.m.

Advanced Practice Providers Plenary Session II  
(see page 40)

Monday, May 4

1:15-2:45 p.m.

Advanced Practice Providers Luncheon

Fee: \$25

Location: Marriott Marquis Washington, D.C.  
(see page 53)

Tuesday, May 5

2-5:30 p.m.

Advancements in Neurotrauma Care

Fee: \$100

(see page 73)

## SESSIONS FOR ADVANCED PRACTICE PROVIDERS

Twelve Practical Clinics are being offered at a 15-percent discount.

### PRACTICAL CLINICS

- 002 Current Treatments and Controversies in Traumatic Brain Injury (page 18)
- 006 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents (page 20)
- 011 Update on the Management of Spine and Spinal Cord Injury (page 22)
- 013 Management of Incidental Imaging Findings (page 23)
- 018 Spinal Alignment Strategies: Thoracic Lumbar Sacral (page 26)
- 020 Spine Management in the Aging Population (page 27)
- 024 EVD Insertions: Hands-on Practicum Course (page 33)



- 028 Brain Neoplasms: Updates on Diagnostics Through Therapeutics (page 34)
- 022 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example (page 30)
- 031 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation (page 35)
- 032 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon (page 35)
- 033 Alternatives to Transpedicular Approaches to Achieving Arthrodesis (page 36)
- 035 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches (page 37)

#### **BREAKFAST SEMINAR**

- 121 Professional Issues: Challenges and Opportunities for the Neurosurgical Advanced Practice Provider (page 49)

#### **SPECIAL PACKAGES FOR ADVANCED PRACTICE PROVIDERS**

The AANS is pleased to offer special, value-added packages as incentives for Advanced Practice Providers attending the 2015 Annual Scientific Meeting in Washington, D.C. The two packages cover the registration fee and robust educational opportunities, including choices among 12 Practical Clinics and any Breakfast Seminars.

The Weekend Package includes the registration fee and one Practical Clinic (earmarked as a course for Advanced Practice Providers).

**Member = \$500 (a \$660 value)**

**Non-member = \$600 (a \$760 value)**

The Jumbo Package includes registration, one Practical Clinic (earmarked as a course for Advanced Practice Providers) and two Breakfast Seminars.

**Member = \$625 (a \$860 value)**

**Non-member = \$725 (a \$960 value)**

Of course, if you choose not to take advantage of one of these special opportunities, you still may register as a member (\$345) or non-member (\$445).

# EXHIBITS



This year, more than 200 companies will showcase their products and services at the 83rd AANS Annual Scientific Meeting. The health-care industry is changing rapidly; visit the exhibit hall to learn about new technology available and evaluate the most up-to-date devices and services all in one convenient place. Registration fees at the meeting would be considerably higher without the income generated from exhibitor participation. Please set aside dedicated time to visit with exhibitors and let them know you value their participation at the meeting.

## EXHIBIT HOURS

|                  |               |
|------------------|---------------|
| Monday, May 4    | 9 a.m.-4 p.m. |
| Tuesday, May 5   | 9 a.m.-4 p.m. |
| Wednesday, May 6 | 9 a.m.-2 p.m. |

## LUNCH IN THE EXHIBIT HALL

Tired of the same old box lunches at meetings? We will offer a hot meal Monday, Tuesday and Wednesday in the exhibit hall. Each medical attendee will be provided with a ticket for a complimentary lunch. Please be sure to join us in the exhibit hall to have lunch and interact with your colleagues and exhibitors.





## LUNCH AND LEARN SEMINARS

Up for a little learning during your lunch break? There will be several informative seminars provided by industry. Grab a free lunch and hear leaders in the neurosurgical field lead these sessions. These are non-CME events.

**Monday, May 4, 2015**

1:15-2 p.m.

### The Neurosurgeon's Expanding Role in Metastatic Brain Tumor Treatment in the Era of Immunotherapy

- Targeted and Immunotherapy in Brain Metastases: Ready for Prime Time?

*Manmeet Ahluwalia, MD*

- The Essential Role of SRS for Metastatic Tumors

*Douglas Kondziolka, MD, FAANS*

The number of brain metastases diagnosed each year is growing, due to an aging population, ubiquitous imaging and extended survival afforded by increased use of targeted and immunotherapies. Neurosurgeons have a key role in the care of these patients. With the advent of single-session stereotactic radiosurgery (SRS), a less nihilistic approach to the treatment of brain metastases is emerging. Experts will provide an overview of the landscape of systemic therapies and the use of SRS. Controversies, such as the maximum number of tumors treatable and the role of whole brain radiation therapy, will be addressed.

*Presented by Elekta.*

### Global Spinal Alignment: It Matters

- Clinical Importance of Global Alignment

*Christopher I. Shaffrey, MD, FAANS*

- Lateral Lumbar Approaches

*Juan Santiago Uribe, MD, FAANS*

- Anterior Lumbar Approaches

*Regis W. Haid Jr., MD, FAANS*

This course will focus on the importance of spinal alignment in achieving optimal outcomes for degenerative and deformity lumbar surgery. Technical aspects and patient selection will be discussed.

*Presented by NuVasive, Inc.*

### The Neuro Suite of the Future: Real-time Navigation for Laser-ablation Therapy Moves to the OR

Participants can look forward to a didactic and case-based presentation and discussion using NeuroBlate for soft tissue lesion ablation with ClearPoint targeting in the VISIUS Surgical Theatre iMRI. Point selection, workflow and results all will be discussed.

*Presented by IMRIS Inc., Monteris Medical Inc. and MRI Interventions, Inc.*



## The Hybrid OR: Planning and Execution

- Planning: Who, What, When, Where and How?  
*Adam S. Arthur, MD, FAANS*
- Hybrid OR Enhanced Workflows  
*Yuichi Murayama, MD*

Hospitals are looking to the hybrid operating room (OR) for economies of scale. Although the initial planning and execution involve budget considerations, sharing imaging capabilities among specialties promises to deliver multiple benefits. This session will provide a “lessons learned” approach to the planning and execution of a hybrid OR.

*Presented by Siemens Medical Solutions USA Inc.*

## Latest Advancements in the Management of Hydrocephalus

*Presented by Aesculap, Inc.*

**Tuesday, May 5, 2015**

1:15-2 p.m.

## Maximizing Lumbar Lordosis with MIS Techniques

This session will demonstrate advanced techniques for maximizing lumbar lordosis using an MIS approach. It will also highlight new technology, such as steerable expandable spacers.

*Presented by Globus Medical.*

## Medtronic Surgical Synergy™

*Presented by Medtronic, Inc.*

## Deep Hemorrhage Evacuation: A Game-changing Surgical Approach to a Largely Untreated Condition

*Presented by Penumbra, Inc.*

## Multimodality Imaging for the Neurosurgeon

- Experiences with CT Sliding Gantry  
*Joerg-Christian Tonn, MD*

- The Combi Suite in Neurosurgery

Computed tomography and magnetic resonance advanced applications are fast becoming very important imaging tools for the neurosurgeon. This session will provide insight into the basics of how these applications can enhance diagnosis and treatment.

*Presented by Siemens Medical Solutions USA Inc.*

# CONTINUING MEDICAL EDUCATION (CME)



The main goals of the American Association of Neurological Surgeons' Annual Scientific Meeting are to serve as a primary source of continuing medical education tailored specifically to our specialty; to advance neuroscience research; integrate the patient safety movement into neurosurgical practice; and to promote a climate conducive to excellence in clinical practice. The Annual Scientific Meeting Committee is dedicated to meeting these goals. The AANS Annual Scientific Meeting is the principal mechanism for the transfer of scientific, technical and intellectual information to the neurosurgical community. Feedback obtained from the online attendee evaluation survey is one important factor in determining the program content of this meeting. Special recognition is extended to the individuals of the 83rd Annual Scientific Meeting Committee and the committees they represent for their perseverance and commitment to making the Annual Scientific Meeting of the American Association of Neurological Surgeons a success.

## CONTINUING MEDICAL EDUCATION (CME)

The AANS is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The AANS designates this live activity for a maximum of 45.25 AMA PRA Category 1 Credits™.

Physicians should claim only the credit commensurate with the extent of their participation in the activity.

## CME CREDIT FOR PRACTICAL CLINICS

Attendees will receive a maximum of four AMA PRA Category 1 Credits™ for all eligible half-day clinics and eight AMA PRA Category 1 Credits™ for all eligible full day clinics. Physicians should only claim the credit commensurate with the extent of their participation in the activity.

## CME CREDIT FOR BREAKFAST SEMINARS

Attendees will receive a maximum of two AMA PRA Category 1 Credits™ for each breakfast seminar they attend. Physicians should only claim the credit commensurate with the extent of their participation in the activity.

## CME CREDIT FOR DINNER SYMPOSIA

Attendees will receive a maximum of two *AMA PRA Category 1 Credits™* for all eligible dinner symposia.

## CME CREDIT FOR ELECTRONIC POSTERS

Physicians may claim *AMA PRA Category 1 Credits™* directly with the AMA for preparing an electronic poster presentation, which is also included in the published abstracts. To obtain credit from the AMA for this, physicians can either claim them on their AMA PRA certificate application or apply directly to the AMA for an *AMA PRA Category Credit(s)™* certificate. Physicians may claim *AMA PRA Category 2 Credit(s)™* for viewing scientific posters. Physicians should self-claim credit to the AMA on their AMA PRA certificate application form.

## CONTINUING EDUCATION FOR ADVANCED PRACTICE PROVIDERS

Practical clinics and afternoon sessions listed on pages 91-92 are designed with the advanced practice provider in mind.

This activity has been submitted to the Ohio Nurses Association (OBN-001-91) for approval to award contact hours. The Ohio Nurses Association is accredited as an approver of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

For more information regarding contact hours, please call AANS at 888.566.2267.

Physician assistants must self-report their credit on [www.MyAANS.org](http://www.MyAANS.org) after completion of the meeting. They will receive a certificate of attendance that can be submitted to the American Academy of Physician Assistants for acceptance toward the Physician Assistant Category I (pre-approved) CME requirement.

## DISCLOSURES

ACCME Updated Standards for Commercial Support require that anyone in a position to control the content of this or any CME activity has disclosed all of his or her relevant financial relationships with any commercial interest. The ACCME defines a "commercial interest" as any entity producing, marketing, re-selling or distributing health-care goods or services consumed by, or used on, patients. Failure or refusal to disclose will result in the withdrawal of the invitation to participate in this or any AANS CME activity. Similarly, should AANS be unable to satisfactorily resolve an identified conflict of interest, this may result in the withdrawal of the invitation to participate in this or any AANS CME activity.

Disclosures will be published in the AANS Annual Scientific Meeting App.

## DISCLAIMER

The material presented at the 83rd AANS Annual Scientific Meeting has been made available by AANS for educational purposes only. The material is not intended to represent the only, nor necessarily the best, method or procedure appropriate for the medical situations discussed, but rather it is intended to present an approach, view, statement or opinion of the faculty, which may be helpful to others who face similar situations.

Neither the content (whether written or oral) of any course, seminar or other presentation in the program, nor the use of a specific product in conjunction therewith, nor the exhibition of any materials by any parties coincident with the program should be construed as indicating endorsement or approval of the views presented, the products used or the material exhibited by the AANS, or its committees, commissions or affiliates.

The AANS makes no statements, representations or warranties (whether written or oral) regarding the Food and Drug Administration (FDA) status of any product used or referred to in conjunction with any course, seminar or other presentation being made available as part of the 83rd AANS Annual Scientific Meeting. Faculty members shall have sole responsibility to inform attendees of the FDA status of each product that is used in conjunction with any course, seminar or presentation and whether such use of the product is in compliance with FDA regulations. The AANS disclaims any and all liability for injury or damages to any individual attending the 83rd AANS Annual Scientific Meeting, and for all claims that may arise out of the use of the techniques demonstrated therein by such individuals, whether these claims shall be asserted by physicians or any other person. There may be, on occasion, changes in faculty and program content. AANS is not responsible for expenses incurred by an individual who is not confirmed and for whom space is not available at the meeting. Costs incurred by the registrant, such as airline or hotel fees or penalties, are the responsibility of the registrant.

## AANS CME CYCLE

The AANS CME cycle mirrors the American Board of Neurological Surgery (ABNS) Maintenance of Certification (MOC) cycle for those members who are participating in MOC. For all other members, the current cycle is Jan. 1, 2014, through Dec. 31, 2016. AANS FAANS, Provisional and Affiliate members are required to document receipt of the Continuing Education Award in Neurosurgery to maintain membership. This award is earned by documenting at least 60 *AMA PRA Category 1 Credit(s)™* during each CME cycle.

# GENERAL INFORMATION

## AGE RESTRICTIONS

Children under the age of 18 will not be admitted in the AANS Exhibit Hall. Please make necessary arrangements for your child's supervision prior to visiting the AANS Exhibit Hall. For all other official AANS activities, children under the age of 18 must be accompanied by an adult.

## AMERICAN WITH DISABILITIES ACT

AANS wishes to take those steps to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids or services. If you require any of the auxiliary aids or services identified in the Americans with Disabilities Act in order to attend any program, please include this information with your advance registration.

## ATTENDEE ONSITE REGISTRATION HOURS

|                  |                     |
|------------------|---------------------|
| Friday, May 1    | 5-7 p.m.            |
| Saturday, May 2  | 6:30 a.m.-5:30 p.m. |
| Sunday, May 3    | 6:30 a.m.-6:30 p.m. |
| Monday, May 4    | 6:30 a.m.-4 p.m.    |
| Tuesday, May 5   | 6:30 a.m.-4 p.m.    |
| Wednesday, May 6 | 6:30 a.m.-3:30 p.m. |

## ATTIRE

Attire for the 83rd AANS Annual Scientific Meeting is business or business casual, depending on the nature of the event or unless otherwise indicated.

## NO SMOKING POLICY

Smoking is not permitted at any official AANS events, The Walter E. Washington Convention Center or the majority of the official AANS hotels.

## CLIMATE/TIME ZONE

Located on the Potomac River between the Blue Ridge Mountains and the Atlantic Ocean, Washington is known for its hot, humid summers, pleasant springs and autumns, and mild winters with seasonal snowfall averaging just over 17 inches. Carved from south-central Maryland, Washington is bordered on three sides by that state and sits across the Potomac River from Virginia on its fourth side. The District is also divided by the Anacostia River and Rock Creek. One fourth of the District is park land. The city is divided artificially into four quadrants: northeast, northwest, southeast, and southwest.

The city's climate is unpredictably changeable, particularly in April; the weather this month may be warm and sunny, cool and rainy or some combination therein, even differing considerably neighborhood to neighborhood. In May, the average high generally hovers around 65 degrees Fahrenheit, with low temperatures reaching 50 degrees Fahrenheit; the average rainfall is 1.5 inches, with an average of 73 percent sunshine. Despite the averages, however, visitors should anticipate that they may experience warmer or cooler conditions. All-weather clothing that can be layered and removed if necessary, such as sweaters and jackets, is strongly recommended. Please consider checking [www.weather.com](http://www.weather.com) two days before your flight for the latest on the weather and temperature, and using this information to pack appropriately. Washington, D.C. is located in the Eastern Time Zone.

## MEETING LOCATION

Walter E. Washington Convention Center  
801 Mt. Vernon Place NW  
Washington, D.C. 20001  
202.249.3000

## HEADQUARTERS HOTEL

Marriott Marquis Washington, D.C.  
901 Massachusetts Avenue NW  
Washington, D.C. 20001  
202.824.9200



### **INTERNATIONAL TRAVEL INFORMATION**

International attendees traveling to the United States from countries in the Visa Waiver Program must apply for entry online as part of the Electronic System for Travel Authorization. The program does not apply to travelers entering by land from Canada or Mexico. The authorization is valid for two years or until your passport expires, whichever comes first. Note: Authorization does not guarantee entry into the United States; that decision rests with the immigration official at the port of entry. Visit the Electronic System for Travel Authorization to apply for entry. To request a visa letter of invitation, email [aansannual@compusystems.com](mailto:aansannual@compusystems.com).

### **DEVELOPING COUNTRIES REGISTRATION INFORMATION**

The American Association of Neurological Surgeons (AANS) is committed to the international neurosurgical community and strengthening the specialty around the world. One area of particular emphasis for the AANS in its international efforts is the furthering of educational opportunities for neurosurgical practitioners in developing countries. A new initiative developed by the AANS Scientific Program Committee offers neurosurgeons from 84 countries the opportunity to attend the AANS Annual Scientific Meeting at a reduced rate of just \$100 (U.S.). For more information on what countries are included in this new initiative, please visit <http://www.aans.org/pdf/Membership/2014%20-%20International.pdf> and click on the Developing Countries category for a complete list.

# REGISTRATION

## HOW TO REGISTER

Complete the 83rd AANS Annual Scientific Meeting Online Advance Registration Form, using a major credit card for payment. This is the most immediate and secure method of registration.

Download and complete the Advance Registration Form with credit card information and send by one of the following methods:

- Fax: 708.344.4444
- Email: [aansannual@compusystems.com](mailto:aansannual@compusystems.com)
- Mail with check or credit card information to:  
AANS Registrations Department  
c/o CompuSystems  
P.O. Box 6271  
Broadview, IL 60155

For wire transfers or questions regarding the 83rd AANS Annual Scientific Meeting, call 708.450.5882.

**Important:** Do not send forms to the AANS Registration Department via Federal Express, UPS, Airborne or DHL. The only overnight service that will deliver to a P.O. Box address is the U.S. Postal Service (Express Mail).

A letter of confirmation will be sent to you via email or fax (if no email address is supplied) or via mail (if no email or fax number is supplied) within 48 hours of receipt of your registration.

You will receive a separate confirmation for your hotel reservation.

## CANCELLATIONS/REFUNDS

Requests for registration cancellation must be made in writing and sent to:

AANS Registrations Department  
c/o CompuSystems  
P.O. Box 6271  
Broadview, IL 60155

Or faxed to: 708.344.4444

All refunds will be processed and mailed following the 83rd AANS Annual Scientific Meeting. Please allow four to six weeks for processing.

Refunds will be made in accordance with the following schedule:

- Cancellations received on or before April 6, 2015, will receive a full refund less a \$50 processing fee.
- Cancellations received between April 7, 2015, and April 26, 2015, will receive a full refund less a \$100 processing fee.
- No refunds will be made for cancellations received after April 27, 2015, or no-shows.



## REGISTRATION FEES

Members of the Asian Australasian Society of Neurological Surgeons (AASNS) will be registered at discounted AANS member rates, thanks to a collaboration with the AANS for the 83rd AANS Annual Scientific Meeting.

AANS Annual Scientific Meeting registration includes free online access to the full compilation of recorded meeting content. Recorded presentations are planned for 2015, offered as online videos that can be streamed online or downloaded.

|                                                                | ON OR BEFORE APRIL 6, 2015 | AFTER APRIL 6, 2015 |
|----------------------------------------------------------------|----------------------------|---------------------|
| AANS Neurosurgeon Member<br>Member (901)                       | \$699                      | \$799               |
| AANS Neurosurgeon Retired<br>or Lifetime Member (927)          | \$395                      | \$495               |
| Non-Member Neurosurgeon (902)                                  | \$899                      | \$999               |
| Non-Member Physician – Other (903)                             | \$899                      | \$999               |
| Non-Member/Non-Physician (904)                                 | \$899                      | \$999               |
| Military AANS Neurosurgeon Member (905)                        | \$0                        | \$0                 |
| Non-member U.S. Armed Forces Neurosurgeon (974)                | \$470                      | \$570               |
| Resident/Candidate Member (906)                                | \$100                      | \$100               |
| Resident/Candidate Non-Member <sup>1</sup> (908)               | \$340                      | \$440               |
| International Resident/Candidate Member (907)                  | \$150                      | \$250               |
| International Resident/Candidate Non-Member <sup>1</sup> (909) | \$340                      | \$440               |
| Developing Countries <sup>6</sup> (973)                        | \$100                      | \$100               |
| Medical Student Member (929)                                   | \$0                        | \$0                 |
| Medical Student Non-Member <sup>3</sup> (971)                  | \$100                      | \$100               |
| Physician Assistant Member (911)                               | \$345                      | \$445               |
| Physician Assistant Non-Member <sup>5</sup> (912)              | \$455                      | \$555               |
| Nurse Member (913)                                             | \$345                      | \$445               |
| Nurse Non-Member <sup>5</sup> (914)                            | \$455                      | \$555               |
| Commercial Press <sup>4</sup> (915)                            | \$375                      | \$425               |
| Spouse <sup>2</sup> (950)                                      | \$150                      | \$150               |
| Guest <sup>2</sup> (951)                                       | \$150                      | \$150               |

<sup>1</sup> Letter of recommendation from Program Director required. Details will be provided in registration form.

<sup>2</sup> Spouse/Guests cannot earn CME credits nor attend any Practical Clinics or Breakfast Seminars.

<sup>3</sup> Every medical student must include a photocopy of his/her current medical student ID card.

<sup>4</sup> The commercial press category encompasses those writers and editors who represent for-profit publications that are circulated among the medical device industry and the business community. Their attendance at the 2015 AANS Annual Scientific Meeting is to network and highlight the activities of device or pharmaceutical companies. Business, medical device and manufacturing

publications that do not contain editorial content related to the scientific program (research) presented at the meeting fall into the category of "commercial press" publications. In addition, to qualify for this registration category, you must be on the editorial staff of the publication you represent. Sales or marketing personnel do not qualify for this reduced-fee registration category.

<sup>5</sup> Physician assistants and nurses must provide a copy of his/her medical credentials.

<sup>6</sup> Every individual applying for the Developing Countries registration rate must provide a photocopy of his/her passport.

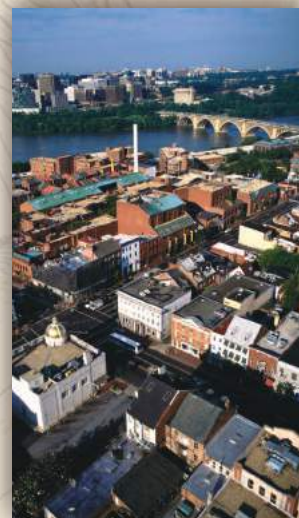
# HOUSING

## HEADQUARTERS HOTEL

Marriott Marquis Washington, D.C.  
901 Massachusetts Avenue NW  
Washington, D.C. 20001  
[www.marriott.com](http://www.marriott.com)

## ADDITIONAL HOUSING

For other hotel options and costs, please refer to the 83rd AANS Annual Scientific Meeting Housing Page at <http://www.aans.org/Annual%20Meeting/2015/Main/Housing.aspx>



83RD AANS ANNUAL SCIENTIFIC MEETING  
MAY 2-6, 2015 • WASHINGTON, D.C.