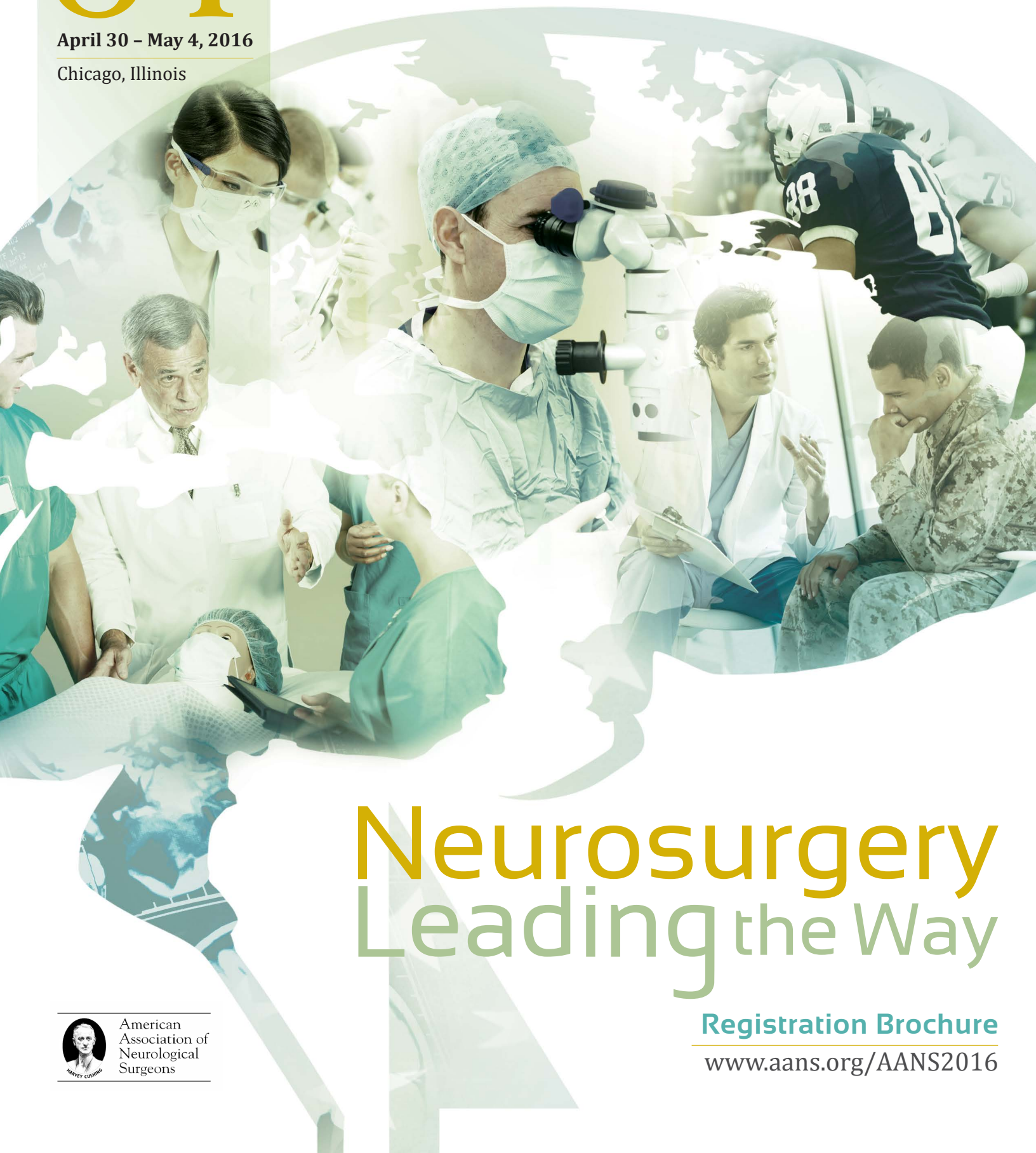


84th AANS Annual Scientific Meeting

April 30 – May 4, 2016

Chicago, Illinois



Neurosurgery Leading the Way



American
Association of
Neurological
Surgeons

Registration Brochure

www.aans.org/AANS2016



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Letter From AANS President, Scientific Program Committee Chair and Annual Scientific Meeting Chair

Dear Colleagues,

It is our great pleasure to invite you to the 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, April 30-May 4, 2016, in Chicago. The meeting theme is *Neurosurgery Leading the Way*. Along with cutting-edge presentations on neurosurgical science and practice, the 2016 AANS Annual Scientific Meeting features speakers who advance neuroscience and neurosurgery through their leadership across many disciplines including education, military operations, athletics, research, art, technology and politics.

As professionals in neurosurgery, we are often called to take a leadership role. In Chicago, we will explore the concept of leadership as it relates to neurosurgery and be inspired by some of the foremost innovators within our discipline and beyond its boundaries.

A Focus on Leadership

You are invited to attend the AANS Opening Ceremonies to hear from a slate of fascinating presenters. Speakers Gen. Peter W. Chiarelli, the 32nd Vice Chief of Staff of the U.S. Army and current leader of ONE MIND, a non-profit dedicated to research of mental illness and brain disease and injury; Geoffrey Ling, MD, PhD, Col., founding director of the Biological Technologies Office at DARPA; Russell R. Lonser, MD, FAANS, President of the Congress of Neurological Surgeons; and Walter Koroshetz, MD, the current Director of the National Institute of Neurological Disorders and Stroke (NINDS) will be joined by NFL Hall of Fame linebacker Mike Singletary. Each brings a unique perspective to the topic of leadership.

Practical Clinics and Breakfast Seminars

The AANS Annual Scientific Meeting offers the opportunity for hands-on guidance from some of the most accomplished teachers in neurosurgery. New Practical Clinics for 2016 include workshops for endoscopic lumbar spinal surgery, neurosurgical device programming and pediatric endoscopic craniostomy repair. New Breakfast Seminars highlight interventional facial pain management, functional mapping of the cortex and other timely topics.

Access to Industry Leaders

Collaboration between industry and neurosurgeons is responsible for much of the innovation in neurosurgery's history. The meeting provides a venue to visit with more than 200 exhibiting companies in the AANS Annual Scientific Meeting Exhibit Hall.

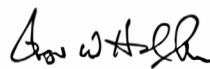
The 84th AANS Annual Scientific Meeting is an opportunity for learning and professional growth for neurosurgeons, medical students, residents, fellows, nurse practitioners, physician assistants and other researchers and physicians with an interest in neurosurgery. We hope you can join your colleagues in Chicago for this exploration of leadership in neurosurgery.

Sincerely,




H. Hunt Batjer, MD, FAANS
AANS President




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




Aviva Abosch, MD, PhD, FAANS
Scientific Program Committee Chair

Letter from AANS President, FLANC President, PANS President and AANS Chair of International Programs



American
Association of
Neurological
Surgeons



Federación Latinoamericana de
Sociedades de Neurocirugía



Dear Colleagues,

It is with great pleasure that the leaders of the American Association of Neurological Surgeons (AANS) welcome the Federación Latinoamericana de Sociedades de Neurocirugía (FLANC) to the 2016 AANS Annual Scientific Meeting, which features a collaboration between these two leading societies of the Americas.

Attendees at this year's meeting will have the opportunity to hear from some of the most renowned neurosurgeons in all of Latin America alongside their North American colleagues during the International Symposium. The International Symposium will also feature a collaboration with the Pan Arab Neurosurgical Society (PANS). Given its popularity last year, the International Symposium has been extended to two full days to incorporate more neurosurgeons and new topics from around the world. All international attendees are invited to the AANS International Reception on Monday, May 2, 2016, to enjoy an evening among friends.

In addition to a wide array of international programming, the 2016 AANS Annual Scientific Meeting includes extensive educational programming and networking opportunities for neurosurgeons from all parts of the world and from each subspecialty. Members of FLANC member societies who choose to attend the meeting may register at the AANS member rate.

Every year our international colleagues bring a wealth of experience and a depth of knowledge about the latest issues in the international field of neurosurgery. This year we continue this strong tradition with neurosurgeons worldwide who join us to lead the way in the world-class city of Chicago, April 30 - May 4, 2016.

Sincerely,



H. Hunt Batjer, MD, FAANS
AANS President



Edgardo Spagnuolo, MD
FLANC President



Amr El Shawarby, MD
PANS President



Christopher M. Loftus, MD, FAANS
AANS Chair of International Programs

Week At-A-Glance

Thursday, April 28

1-5:10 p.m.	International Brain Mapping Course <i>Separate Registration Required</i>
5:30-6:30 p.m.	Cocktail Reception
6:30-8 p.m.	Dinner

Friday, April 29

7:30 a.m. -5:30 p.m.	International Brain Mapping Course <i>Separate Registration Required</i>
5-7 p.m.	AANS Registration

Saturday, April 30

6:30 a.m.-5:30 p.m.	AANS Registration
8 a.m.-5 p.m.	All-day Practical Clinics (001-003)
8 a.m.-5 p.m.	International Symposium
8 a.m.-12 p.m.	Morning Practical Clinics (004-008)
1-5 p.m.	Afternoon Practical Clinics (009-016)
1-5 p.m.	Leadership Development Course <i>By Nomination Only</i>

Sunday, May 1

6:30 a.m.-6:30 p.m.	AANS Registration
7:30 a.m.-4:30 p.m.	All-Day Practical Clinics (017-018)
7:30 a.m.-4:30 p.m.	International Symposium
7:30 a.m.-4:30 p.m.	Advanced Practice Providers Plenary Session
7:30-11:30 a.m.	Morning Practical Clinics (019-026)
12:30-4:30 p.m.	Afternoon Practical Clinics (027-033)
1-4:30 p.m.	Young Neurosurgeons Research Forum <i>Osler Lecture</i> Duke S. Samson, MD, FAANS
5-6:30 p.m.	AANS Opening Ceremonies Gen. Peter W. Chiarelli Walter Koroshetz, MD Geoffrey Ling, MD, PhD, Col. (Ret.) Russell R. Lonser, MD, FAANS Mike Singletary
7-9 p.m.	AANS Opening Reception at Soldier Field

Monday, May 2

6:30 a.m.-4 p.m.	AANS Registration
7-9 a.m.	Breakfast Seminars (101-125)
9 a.m.-4:15p.m.	AANS Exhibit Hall
9-9:45 a.m.	Morning Beverage Break in the AANS Exhibit Hall
9:40-9:45 a.m.	Historical Vignette
9:45 a.m.-1 p.m.	Plenary Session I <i>Hunt-Wilson Lecture</i> Gen. Peter W. Chiarelli <i>Richard C. Schneider Lecture</i> Alim L. Benabid, MD, PhD, IFAANS <i>AANS Presidential Address</i> H. Hunt Batjer, MD, FAANS
1-2 p.m.	Lunch in the AANS Exhibit Hall
1:10-2 p.m.	Neurosurgery "In Press": Latest Results of Clinical Trials in Neurosurgery and Allied Fields
1:10-1:55 p.m.	Lunch-and-learn Seminars <i>Non-CME Events</i>
1:15-2:45 p.m.	Advanced Practice Providers Luncheon
2-3:30 p.m.	Operative Nuances I: Tackling Challenging Cases 3D Video Presentation
2-5:30 p.m.	Scientific Sessions I-VII Scientific Session I: Tumor Scientific Session II: Spine Scientific Session III: Stereotactic and Functional Surgery Scientific Session IV: Pediatrics Scientific Session V: Cerebrovascular Scientific Session VI: Neurotrauma and Critical Care Scientific Session VII: AANS/CSNS Socioeconomic
3:30-4 p.m.	Afternoon Beverage Break in the AANS Exhibit Hall
5:30-6:30 p.m.	Joint Annual Business Meeting of the American Association of Neurological Surgeons and the American Association of Neurosurgeons
6:30-8:30 p.m.	Dinner Symposium: Cutting Edge Stereotactic Radiosurgery
6:30-9:30 p.m.	AANS History Section Dinner at University Club of Chicago
8-9:30 p.m.	AANS International Reception at the Chicago Cultural Center

Week At-A-Glance

Tuesday, May 3

6:30 a.m.-4 p.m.	AANS Registration
7-9 a.m.	Breakfast Seminars (201-225)
9 a.m.-4:15 p.m.	AANS Exhibit Hall
9-9:45 a.m.	Morning Beverage Break in the AANS Exhibit Hall
9:40-9:45 a.m.	Historical Vignette
9:45 a.m.-1 p.m.	Plenary Session II <i>Theodore Kurze Lecture</i> Thomas J. Nasca, MD <i>Cushing Orator</i> Special Invited Guest
1-2 p.m.	Lunch in the AANS Exhibit Hall
1:10-1:55 p.m.	Lunch-and-learn Seminars <i>Non-CME Events</i>
1:15-2:45 p.m.	Young Neurosurgeons Luncheon
2-3:30 p.m.	Operative Nuances II: Complication Avoidance 3D Video Presentation
2-5:30 p.m.	Section Sessions AANS/CNS Cerebrovascular Section AANS/CNS Section on Disorders of the Spine and Peripheral Nerves – Peripheral Nerves Section Session AANS/CNS Section on Neurotrauma and Critical Care AANS/CNS Section on Stereotactic and Functional Surgery AANS/CNS Section on Tumors I AANS/CNS Section on Women in Neurosurgery (WINS)
2-5:30 p.m.	Advancements in Neurotrauma Care
3:30-4 p.m.	Afternoon Beverage Break in the AANS Exhibit Hall
6-8 p.m.	Dinner Symposium The FDA: Investigational Device Exemptions, Regulatory Process and Moving Medical Devices to Patients
6:30-8:30 p.m.	Dinner Symposium Practical Management Topics in Spine and Cranial Trauma

Wednesday, May 4

6:30 a.m.-3:30 p.m.	AANS Registration
7-9 a.m.	Breakfast Seminars (301-322)
7-8:30 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
9:40-9:45 a.m.	Historical Vignette
9:45 a.m.-1 p.m.	Plenary Session III <i>Louise Eisenhardt Lecture</i> Petra Kaufmann, MD, MSc <i>Rhodon Family Lecture</i> José Francisco Salgado, PhD <i>Van Wagenen Lecture</i> Geoffrey Ling, MD, PhD, Col. (Ret.)
1-2 p.m.	Lunch in the AANS Exhibit Hall
2-5 p.m.	Section Sessions AANS/CNS Section on Disorders of the Spine and Peripheral Nerves — Spine Section Session AANS/CNS Section on Pediatric Neurological Surgery AANS/CNS Section on Pain AANS/CNS Section on Tumors II AANS Section on History of Neurological Surgery



AANS Opening Ceremonies and Reception

Sunday, May 1 | 5-6:30 p.m. AANS Opening Ceremonies

Moderator: Sanjay K. Gupta, MD, FAANS

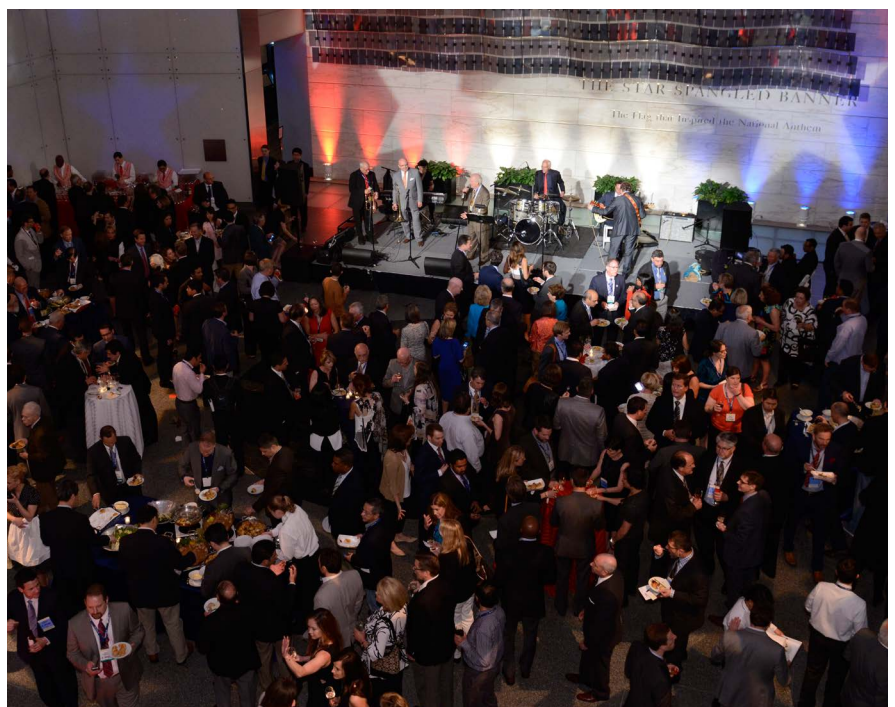
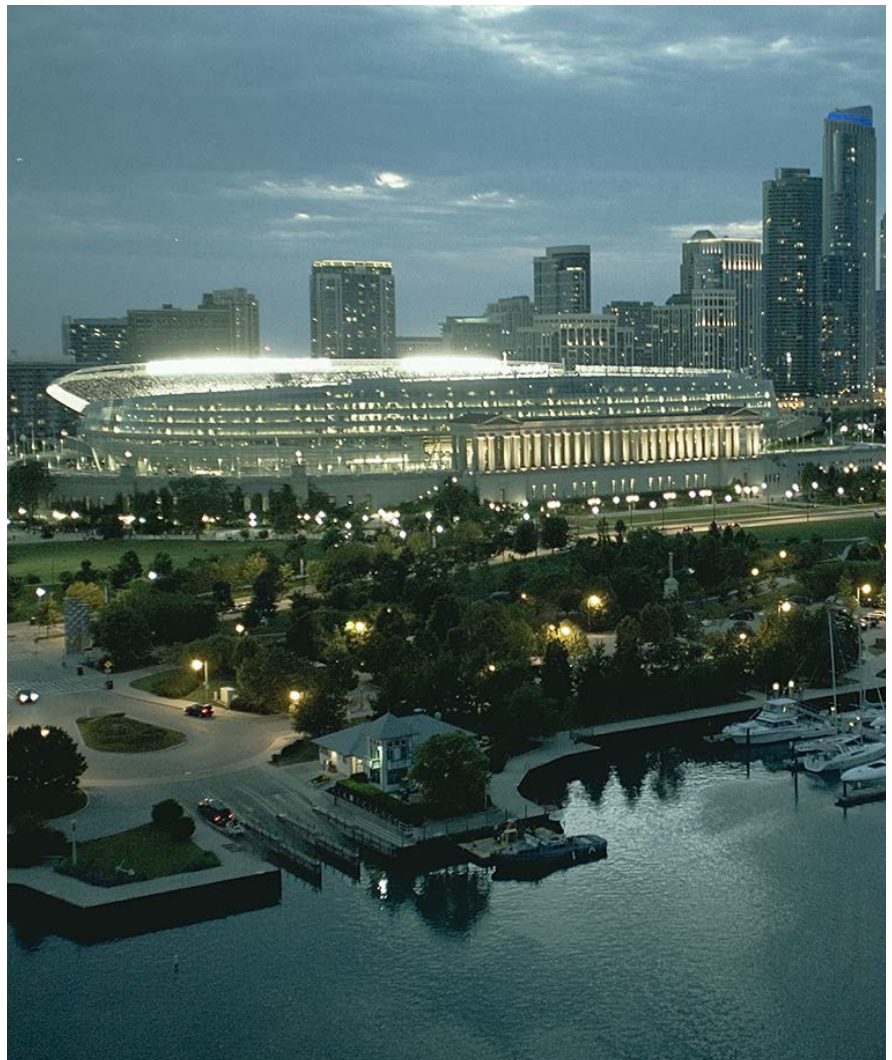
To highlight the theme of *Neurosurgery Leading the Way*, hear from several notable leaders on how neuroscience and neurosurgery have helped advance their fields. Speakers include Gen. Peter W. Chiarelli, former vice chief of staff of the U.S. army and recipient of the Patriot Award for his continued dedication to advancing research of mental illness and brain injuries, and Geoffrey Ling, MD, PhD, Col. (Ret.), the founding director of the Biological Technologies Office at DARPA. Also speaking are Walter J. Koroshetz, MD, Director of the National Institute of Neurological Disorders and Stroke (NINDS) and Russell R. Lonser, MD, FAANS. The National Football League (NFL) will be represented by Football Hall of Famer and former Chicago Bear, Mike Singletary.

The AANS Opening Ceremonies will be moderated by CNN's chief medical correspondent and Emory University Assistant Professor of Neurological Surgery, Sanjay K. Gupta, MD, FAANS.

7-9 p.m. Soldier Field

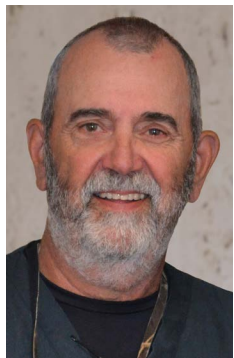
With its stately roman columns and panoramic view of Lake Michigan, Soldier Field functions as the perfect welcome to Chicago and kick-off for the 2016 AANS Annual Scientific Meeting. Join your colleagues on Sunday evening for a chance to enjoy this historic venue with refreshments and hors d'oeuvres.

Opened to the public in 1924, Soldier Field stands as one of the oldest and most storied stadiums in professional sports. Prior to its current role as home field of the Chicago Bears, the stadium hosted crowds in excess of 100,000 for civic events, heavyweight matches, college football games and even a presidential visit from President Franklin Roosevelt.



Invited Speakers

Sunday, May 1 | Young Neurosurgeons Research Forum



Osler Lecture

Duke S. Samson, MD, FAANS

After majoring in psychology at Stanford and then graduating from Washington University Medical School, Dr. Samson completed a surgical internship at Duke University Medical Center. His neurosurgical residency at the University of Texas (UT) Southwestern Medical School, Dallas, was highlighted

by fellowships with Prof. Gerard Guiot, MD, in Paris and Prof. M. Gazi Yasargil, MD, in Zurich.

After serving in the U.S. Army Medical Corps, he joined the faculty at UT Southwestern in 1977, focusing on vascular diseases of the nervous system. Dr. Samson was promoted to professor of surgery in 1984 and assumed the chairmanship of the division of neurological surgery the following year. In 1987, neurosurgery at UT Southwestern achieved departmental status, and he accepted the W. Kemp Clark Chair. In 1998, Dr. Samson was named director of the Mobility Foundation Center, a multi-disciplinary center dedicated to clinical research in cerebrovascular diseases and spinal cord injury.

Monday, May 2 | Plenary Session I

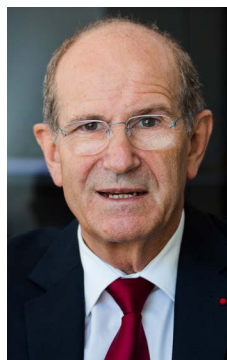


Hunt-Wilson Lecture

Gen. Peter W. Chiarelli

Gen. Peter Chiarelli, a retired U.S. Army general, served as the 32nd vice chief of staff of the U.S. Army from 2008-2012, where he was responsible for its day-to-day operations. This included implementation of recommendations related to its behavioral health programs.

As the CEO of ONE MIND, a non-profit organization dedicated to the research of mental illness and brain injuries, Chiarelli continues his advocacy to benefit all affected by brain disease and injury. In 2013, Chiarelli received the Patriot Award, the Congressional Medal of Honor Society's highest honor for his dedication and ongoing efforts to help soldiers, civilians and families suffering from the invisible wounds of war.



Richard C. Schneider Lecture

Alim L. Benabid, MD, PhD, IFAANS

Dr. Benabid is a professor emeritus, neurosurgeon and member of the Academy of Sciences in France, who has had a global impact in the development of deep brain stimulation (DBS) for Parkinson's disease and other movement disorders through

the creation of an effective and reversible intervention that remedies neuronal misfirings.

He developed stereotactic surgery methods for brain surgery in patients who had brain tumors or certain types of movement disorders. As part of his work, he created tissue banks, which have helped to characterize brain tumors by oncogenic mapping. Dr. Benabid has published more than 520 scientific papers, achieving an H Index of 67. He has given 18 honorary lectures and has received 23 medals and prizes, including the 2014 Lasker Award and the 2015 Breakthrough Prize in Life Sciences.



AANS Presidential Address

H. Hunt Batjer, MD, FAANS

Dr. Batjer recently returned to the University of Texas (UT) Southwestern Medical Center, as Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Surgery. He served on the faculty at UT Southwestern until 1995, when he joined Northwestern University

as chair of neurological surgery until 2012.

Dr. Batjer has served in leadership positions in a large number of other national organizations including as Immediate Past President of the Society of Neurological Surgeons, as well as past roles as President of the Congress of Neurological Surgeons, the Society of University Neurosurgeons, Neurosurgical Society of America, Chair of the American Board of Neurological Surgery and Chair of the Residency Review Committee for Neurological Surgery under the ACGME.

His academic pursuits and research in ischemic and hemorrhagic stroke have resulted in nearly 400 publications, including nine books. He has presented 42 endowed lectureships and served as visiting professor in 57 medical institutions worldwide.

Invited Speakers [continued]

Tuesday, May 3 | Plenary Session II



Theodore Kurze Lecture

Thomas J. Nasca, MD

Dr. Nasca is the chief executive officer of the Accreditation Council for Graduate Medical Education (ACGME) and chief executive officer of ACGME International. He is a professor of medicine and molecular physiology and biophysics (vol.) at the Sidney Kimmel Medical College of Thomas Jefferson University

and senior scholar in the department of medical education at the University of Illinois at Chicago.

Dr. Nasca was elected to mastership by the American College of Physicians in 2006. The recipient of numerous honors and awards, he was named one of the 50 most powerful/influential physician executives in 2009 through 2013 by *Modern Healthcare*. The author of more than 150 peer reviewed articles, chapters and other publications, Dr. Nasca has delivered more than 400 invited lectures on topics related to medical education.

Wednesday, May 4 | Plenary Session III



Louise Eisenhardt Lecture

Petra Kaufmann, MD, MSc

Dr. Kaufmann is the director of both the Office of Rare Diseases Research and the Division of Clinical Innovation at the National Center for Advancing Translational Sciences (NCATS). In this capacity, she oversees NCATS' Rare Diseases Clinical Research Network, Genetic and Rare Diseases Information

Center, and Clinical and Translational Science Awards Program as well as the NIH/NCATS Global Rare Diseases Patient Registry Data Repository/GRDR® program. She engages a broad range of stakeholders to accelerate translation from discovery to health benefits through innovative methods and tools in translational research and training.

Before joining NCATS, Kaufmann was director of the Office of Clinical Research at the National Institute of Neurological Disorders and Stroke (NINDS), where she worked with investigators to plan and execute a large portfolio of clinical research studies and trials in neurological disorders.

A native of Germany, she earned her MD from the University of Bonn and her MSc in biostatistics from Columbia's Mailman School of Public Health. She completed a postdoctoral fellowship in molecular biology of mitochondrial diseases at Columbia's H. Houston Merritt Center for Muscular Dystrophy and Related Diseases.



Rhoton Family Lecture

José Francisco Salgado, PhD

José Francisco Salgado is an Emmy-nominated astronomer (BS in Physics, Univ. of Puerto Rico; PhD in Astronomy, Univ. of Michigan), experimental photographer, visual artist and public speaker who creates multimedia works that communicate science in engaging ways. As the executive director and

co-founder of KV 265, a non-profit science and arts education organization, Dr. Salgado collaborates with orchestras, composers and musicians to present films that provoke curiosity and a sense of wonder about the Earth and the Universe.

His Science & Symphony films have been presented in more than 100 concerts and have reached a combined audience of more than 250,000 people in concert halls, museums and lecture halls spanning 45 cities in 15 countries. His first two films were named by the International Astronomical Union and UNESCO as Special Projects for the International Year of Astronomy (IYA2009). In 2014, his collaboration with composer Chris Theofanidis, "The Legend of the Northern Lights" was premiered with Grant Park Orchestra to critical acclaim in front of 32,000 people. Dr. Salgado also produces and presents short science films with musician/composer Tom Bailey as part of the audiovisual ensemble Bailey-Salgado Project, and with harp duo Beyond Pluck.



Van Wagenen Lecture

Geoffrey Ling, MD, PhD, Col. (Ret.)

Geoffrey Ling, MD, PhD, Col. (Ret.) is the founding director of the Biological Technologies Office (BTO) at the Defense Advanced Research Projects Agency (DARPA), a government agency responsible for the development of emerging military technology. Having managed a research portfolio with more

than \$400 million in funding, his most prominent programs include an effort to develop a brain-controlled, robotic prosthetic arm for amputees and a program seeking new understanding and treatment of blast-induced traumatic brain injury (TBI).

Dr. Ling also serves as an attending neurocritical care physician at The Johns Hopkins Hospital, having retired from the U.S. Army in 2012 after serving as a military intensive-care physician with multiple deployments to Iraq and Afghanistan.

Scientific Session Lectures

Monday, May 2 | Scientific Session I: Tumor



Ronald L. Bittner Lecture Michael D. Taylor, MD, PhD

Dr. Taylor was born in Calgary, Alberta and obtained his MD in 1994 from the University of Western Ontario. He completed his PhD in Molecular Pathology at the University of Toronto during the course of his neurosurgery residency, followed by a pediatric neurosurgical fellowship and a post-

doctoral research fellowship at St. Jude Children's Research Hospital in Memphis, Tennessee. In 2004 he joined the neurosurgical staff at the Hospital for Sick Children in Toronto where he is Professor and Senior Scientist, focusing on pediatric neuro-oncology.

Dr. Taylor's laboratory has identified new, molecularly-defined classes of medulloblastoma and ependymoma and has gone on to identify clinical syndromes and refine treatment choices for these diseases. As creator and leader of the international MAGIC consortium, he has revolutionized our basic understanding through analysis of over 1,400 fresh-frozen tumor samples collected from more than 60 centers throughout the world. These studies should result in more rational choices in the current treatment of medulloblastoma and help determine the direction of future research.

Monday, May 2 | Scientific Session II: Spine



Sonntag Lecture Charles L. Branch Jr., MD, FAANS

Born in Montreal, Quebec, Canada, Dr. Branch earned his medical degree from University of Texas Southwestern Medical School in 1981. He completed his neurosurgical training at Wake Forest University in 1987, followed by a clinical fellowship in the Department of Neurological Surgery at the University

of California in San Francisco. In 1987, he returned to Wake Forest as a faculty member in the Department of Neurosurgery. In June, 2000, Dr. Branch was appointed to the position of the Eben Alexander, Jr. Professor and Chairman of the Department of Neurological Surgery, a position that he currently holds.

Branch has served as the Chair of the American Board of Neurological Surgery, the President of the North American Spine Society and Chair of the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves. He served as editor-in-chief of *The Spine Journal*, the official journal of the North American Spine Society, from 2004-2009 and is currently on the Editorial Board of the *Journal of Neurosurgery: Spine*.

He has been a pioneer in the development of a posterior lumbar interbody fusion technique and was instrumental in bringing the only Gamma Knife in the state of North Carolina to Wake Forest.



Scientific Session Lectures [continued]

Monday, May 2 | Scientific Session IV: Pediatrics



Matson Lecture Cesario Borlongan, PhD

Dr. Borlongan is a world leader in stem cell therapy for stroke. His translational bench to clinic research has led to five FDA-approved clinical trials of cell transplantation, including the world's first cell therapy in stroke patients. He served as an NIH Staff

Fellow for five years and joined the academe in 2002, becoming a professor in the Department of Neurology at the Medical College of Georgia.

Author of more than 310 peer-reviewed publications, lead editor of two books and editor of many scientific journals, including *Stem Cells*, *Stroke*, *JCBFM*, *PLoS One* and *Brain Research*, he is also a regular study section member of NIH, VA, DOD, and AHA and chairs the State of Maryland Stem Cell Research Funds. He is an AAAS Fellow and serves as President of the American Society for Neural Therapy and Repair and the International Placenta Stem Cell Society.

Monday, May 2 | Scientific Session V: Cerebrovascular



Yasargil Lecture Steven L. Giannotta, MD, FAANS

Dr. Giannotta is currently Professor and Chairman of Neurological Surgery at the University of Southern California's Department of Neurosurgery. He earned his medical degree from the University of Michigan, where he also

completed his neurosurgical residency. Dr. Giannotta has gained recognition for his work in cerebrovascular disease of the brain and spinal cord, with special expertise in surgical approaches to the cranial base. His current laboratory work involves the study of basic cellular and epigenetic mechanisms of human cerebral arteriovenous malformations.



Section Session Lectures

Tuesday, May 3 | AANS/CNS Cerebrovascular Section



Donaghy Lecture

**William T. Couldwell, MD, PhD,
FAANS**

A native Canadian, Dr. Couldwell is a 1984 medical graduate of McGill University in Montreal. After completing his neurosurgical residency at the University of Southern California in 1989, he obtained his doctorate degree in neuroimmunology/molecular biology from McGill in 1991. He is currently professor and chairman of the Department of Neurosurgery at the University of Utah, a position he assumed in 2001. Dr. Couldwell is currently (or has served) on the Editorial Boards of several journals (including the *Journal of Neurosurgery*, Chairman 2007-2008). He serves on the Board of Directors of the AANS, and is a Former Director of the American Board of Neurological Surgery (ABNS). He served as Vice President of the Society of Neurological Surgeons (2008-2009) and as President of the AANS (2013-2014). His clinical interests are in skull base and vascular neurosurgery, with a secondary interest in functional neurosurgery. Dr. Couldwell's research focuses on signal transduction and apoptosis in gliomas, pituitary tumors and meningiomas. He has published over 325 peer-reviewed manuscripts, 85 book chapters and three books.

Tuesday, May 3 | AANS/CNS Section on Disorders of the Spine and Peripheral Nerves - Peripheral Nerves Section Session



Kline Lecture

Robert J. Spinner, MD, FAANS

Dr. Spinner completed his medical degree at the Mayo Clinic in 1989 and his full residency training in orthopedics at Duke University (1990-1996). He then completed his residency in neurosurgery at the Mayo Clinic (1996-2000). He received training in peripheral nerve surgery with David Kline (1998-99) and at several international centers of excellence as a CNS Cushing Fellow (2001).

He joined the neurosurgical faculty at Mayo Clinic in 2001 and developed a practice limited to peripheral nerve surgery. There he ascended the academic ranks, becoming Professor of Neurologic Surgery, Orthopedics and Anatomy in 2007 and the Burton M. Onofrio, MD Chair in Neurosurgery in 2011. He is the chairman of research in the Department of Neurologic

Surgery, chair of the Academic Appointments and Promotions Committee, and the director of clinical and basic science fellows in peripheral nerve. He is a journal editor and an active member of surgical societies in both specialties. He has more than 250 publications and has given over 600 presentations in his subspecialty. Most recently, he served as the President of the American Society for Peripheral Nerve.

Tuesday, May 3 | AANS/CNS Section on Neurotrauma and Critical Care



Miller Lecture

Jamshid Ghajar, MD, PhD, FAANS

Dr. Ghajar is Clinical Professor of Neurosurgery and Director of the Concussion and Brain Performance Center at Stanford University. Dr. Ghajar is also the Founder and President of the Brain Trauma Foundation (BTF). He completed his MD/PhD at Cornell University Medical College, with his

PhD dissertation on neuro-chemistry and brain metabolism during coma. During his residency training at Cornell-New York Presbyterian Hospital, he invented and patented several neurosurgical devices which are currently used worldwide.

Dr. Ghajar is the principal investigator on the U.S. Department of Defense funded, 10,000 subjects EYE-TRAC Advance study, to test normal and concussed subjects using a novel goggle eye-tracking technology capable of assessing visual attention focus precisely and reliably, within a minute. He is also the principal investigator for the Brain Trauma Evidence-based Consortium (B-TEC), which is developing an evidence-based classification for concussion and traumatic brain injury (TBI), to model post-TBI trajectories and outcomes.

The BTF severe TBI guidelines are standard of care for U.S. trauma centers and have led to a 45-percent decline in deaths. Dr. Ghajar has dedicated his life to improving the quality of life and outcomes for traumatic brain injury patients.

Section Session Lectures [continued]

Wednesday, May 4 | AANS/CNS Section on Pain



John Loeser Lecture

A. Vania Apkarian, PhD

Dr. A. Vania Apkarian is a professor in the Department of Physiology at Northwestern University Feinberg School of Medicine. He holds a bachelor's degree in Electrical Engineering, a Master's Degree in Biomedical Engineering and a PhD in neuroscience from SUNY Upstate

Medical University. Dr. Apkarian's work focuses on pain perception in health and disease as a means of studying consciousness. He has pioneered the use of brain imaging technology to peer into the brains of individuals who suffer from chronic pain conditions, resulting in seminal observations of how brain function and structure adapt to the chronic presence of pain. His more recent work has included the first prospective prediction of pain chronicity using brain properties and the first description of brain activity that predicts placebo response in pain patients. Dr. Apkarian's current focus is the use of brain imaging in animals and humans to determine critical mechanisms that drive the propensity for developing chronic pain, its long-term maintenance and therapeutic interventions aimed at treating and ultimately preventing development of chronic pain.

Wednesday, May 4 | AANS Section on the History of Neurological Surgery



History Lecture

Walter Whisler, MD, PhD, FAANS(L)

Walter W. Whisler, MD, PhD, FAANS(L) Chairman Emeritus of Neurosurgery at Rush received his medical degree from the University of Illinois College of Medicine in 1959, completed a residency in neurosurgery at the University of Illinois and received his PhD degree in

biochemistry in 1969. Dr. Whisler has had a brilliant career as a surgeon, educator, researcher and author. He is a pioneer and innovator in epilepsy surgery and, with the Department of Neurology, established the Rush Epilepsy Center. Dr. Whisler founded the Department of Neurosurgery at Rush and led it through its formative years.

Dr. Whisler will be sharing the story of the first neurosurgical practitioners and the formation of Chicago's five medical schools and respective neurosurgical training programs. Over a period of 80 years, starting at the time of Chicago's Charter in 1830, six medical schools were founded. During that same period Chicago saw its population increase from 4,000 to 2,700,000. Ten years later, with a population of 3,400,000, five neurosurgery training programs were established. Dr. Whisler will examine the results of this expanding caldron of migrants and entrepreneurs as medical schools are formed and the first neurosurgical training programs are established.



First International Brain Mapping Course

A Masters Course Held in Conjunction with AANS and NREF

April 28-29, 2016, Hyatt Regency, Chicago



Course Directors

- Mitchel S. Berger, MD, FAANS, University of California San Francisco (UCSF)
- Richard W. Byrne, MD, FAANS, Rush University Medical Center
- Hugues Duffau, MD, Hôpital Gui de Chauliac

Honored Guest

- George A. Ojemann, MD, FAANS(L), University of Washington

The American Association of Neurological Surgeons (AANS) in collaboration with Neurosurgery Research and Education Foundation (NREF) invites you to attend the First International Brain Mapping Course, hosted the two days immediately prior to the 2016 AANS Annual Scientific Meeting in Chicago.

At this course, an international faculty present advances, advantages and practical issues in contemporary pre-operative and intra-operative brain mapping applications in brain tumor and functional neurosurgery.

Led by faculty from major brain mapping centers in Europe, North America and Asia, the First International Brain Mapping Course will be presented in five sessions over two days.

Thursday, April 28, 2016

1-5:10 p.m.

Session 1: Functional Anatomy, Physiology and Brain Mapping with Imaging

6:30-8 p.m.

Session 2: Dinner Session: Neuroanatomy of Speech and Historical Perspective on Cortical Stimulation Mapping

Friday, April 29, 2016

7:30-11:30 a.m.

Session 3: Cortical Stimulation Mapping: How We Do It

11:30a.m.-1:30 p.m.

Session 4: Lunch Session: Practical Aspects of Cortical Mapping, Discussion of Protocols and Algorithms, and Standard and Invited Cases

1:30-5:40 p.m.

Session 5: Special Topics in Stimulation Research Techniques, the Future of Brain Mapping

Learning Objectives

Upon completion of this CME activity, learners should be able to:

- Describe both the anatomic and functional anatomy of eloquent cortex.
- Explain the indications for brain mapping in neurosurgery.
- List the potential pitfalls in sensitivity and specificity in each brain mapping technique.
- Describe areas of developing research in brain mapping techniques and technology.

CME Credit

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 15.5 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



New Sessions in 2016

- Leadership Development Course ([page 29](#))
- 011 Comprehensive Interventional Facial Pain Management ([page 26](#))
- 024 Endoscopic Lumbar Spinal Surgery: Cadaveric Hands-on Course ([page 37](#))
- 025 Pediatric Endoscopic Craniosynostosis Repair ([page 38](#))
- 113 Wilder Penfield and the Mapping of Mid-century Neurosurgery: Neurosurgery Becomes Truly Modern ([page 49](#))
- 121 Becoming an Exceptional Advanced Practice Provider in Neurosurgery - Pearls from Your Peers ([page 51](#))
- Neurosurgery "In Press": Latest Results of Clinical Trials in Neurosurgery and Allied Fields ([page 53](#))
- Dinner Symposium: Cutting Edge Stereotactic Radiosurgery ([page 56](#))
- Dinner Symposium: The FDA: Investigational Device Exemptions, Regulatory Process, and Moving Medical Devices to Patients ([page 69](#))
- Dinner Symposium: Practical Management Topics in Spine and Cranial Trauma ([page 69](#))
- 315 Basics of Programming Neurosurgical Devices ([page 75](#))
- 321 Neurosurgery at the Periphery: The History of Peripheral Nerve Surgery ([page 77](#))



Cerebrovascular Track

- 001 Introduction to Cerebrovascular Neurosurgery for Residents ([page 19](#))
- 009 **Rhoton Lecture Series:** 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base ([page 25](#))
- 022 Nuts and Bolts of Posterior Fossa Surgery: How I Do It ([page 36](#))
- 023 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management ([page 37](#))
- 029 **Rhoton Lecture Series:** 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base ([page 40](#))

- 030 How to Tackle Difficult Cranial Cases: A Step-by-step 3D Case-based Presentation ([page 40](#))
- 031 State-of-the-art: Cranial Endoscopy ([page 41](#))
- 108 Endovascular vs. Microsurgical Techniques for the Optimal Treatment of Intracranial Aneurysms ([page 47](#))
- 109 Cavernous Malformation: Current Controversies in Management ([page 47](#))
- 114 Contemporary Management for Adult Hydrocephalus ([page 49](#))
- 120 Cerebral Venous System: Surgical Considerations ([page 51](#))
- 125 Management of Cranial Incidental Imaging Findings ([page 52](#))
- 208 Management of Vasospasm ([page 61](#))
- 213 Controversies in Cerebrovascular and Endovascular Neurosurgery ([page 63](#))
- 222 Selecting Anterior Approaches for Cerebrovascular Surgery: From Eyebrow to OZ - Pros and Cons of Minimally Invasive "Keyhole" Approaches for Cerebrovascular Surgery ([page 65](#))
- 302 Surgical Approaches to the Lateral Skull Base ([page 71](#))
- 308 Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery ([page 73](#))
- 310 If I Could Do That Case Over Again: Discussion of Complications of Cranial Surgery ([page 73](#))
- 319 Complication Management and Avoidance in Vascular Neurosurgery ([page 76](#))



Ethics Track

- 026 Update on the Management of Spine and Spinal Cord Injury ([page 38](#))
- 033 Neurosurgical Care of Athletes - Concussion, Spine, Peripheral Nerve and Return to Play ([page 42](#))
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- 125 Management of Cranial Incidental Imaging Findings ([page 52](#))
- 202 Return-to-play After Sports Injury I: Concussion ([page 59](#))
- 210 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices ([page 62](#))

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- 214 Beginning Your Academic Career: Answers to Your Questions ([page 63](#))
- 217 Management of Adult Scoliosis ([page 64](#))
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- 318 Adult Low-grade Gliomas ([page 75](#))



History Track

- 113 Wilder Penfield and the Mapping of Mid-century Neurosurgery: Neurosurgery Becomes Truly Modern ([page 49](#))
- 321 Neurosurgery at the Periphery: The History of Peripheral Nerve Surgery ([page 77](#))



Neurotrauma Track

- 003 You Are Never Too Old for Surgery: Spine Management in an Aging Population ([page 20](#))
- 014 Neurotrauma and Neurocritical Care for the Practicing Neurosurgeon: MOC Review and Update ([page 27](#))
- 017 Current Treatments and Controversies in Traumatic Brain Injury ([page 31](#))
- 033 Neurosurgical Care of Athletes - Concussion, Spine, Peripheral Nerve and Return to Play ([page 42](#))
- 112 Controversies in the Management of Intracerebral Hematomas ([page 48](#))
- 202 Return-to-play After Sports Injury I: Concussion ([page 59](#))
- 219 Cerebral Trauma: State-of-the-art Treatment ([page 64](#))
Advancements in Neurotrauma Care ([page 68](#))
Dinner Symposium: Practical Management Topics in Spine and Cranial Trauma ([page 69](#))
- 314 Open vs. Endoscopic Approaches to the Anterior Skull Base ([page 74](#))



Non-CME Event Track

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- 322 Advanced Estate Planning and Tax Saving Strategies for the Neurosurgeon ([page 77](#))



Pain Track

- 005 Integrating Pain Management into Your Neurosurgical Practice ([page 22](#))
- 011 Comprehensive Interventional Facial Pain Management ([page 26](#))
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- 315 Basics of Programming Neurosurgical Devices ([page 75](#))



Pediatrics Track

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- 025 Pediatric Endoscopic Craniosynostosis Repair ([page 38](#))
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- 224 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors ([page 66](#))



Peripheral Nerve Track

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- 016 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation ([page 28](#))
- 122 Update on Rx of Nerve Tumors/MPNST/Peripheral Nerve Spinal Tumors ([page 52](#))
- 315 Basics of Programming Neurosurgical Devices ([page 75](#))
- 316 Peripheral Nerve Entrapment Syndromes ([page 75](#))
- 321 Neurosurgery at the Periphery: The History of Peripheral Nerve Surgery ([page 77](#))



Socioeconomic Track

- 007 Negotiating Strategies in Neurosurgery ([page 23](#))
- 008 Goodman Oral Board Review ([page 24](#))
- 019 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example ([page 35](#))
- 021 Applications of Video and 3D Technology in Neurosurgery ([page 36](#))
- 101 How to Write and Publish a Successful Neurosurgical Manuscript ([page 45](#))
- 117 Getting the Most out of Your Residency ([page 50](#))
- 121 Becoming an Exceptional Advanced Practice Provider in Neurosurgery - Pearls from Your Peers ([page 51](#))
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- 124 Measuring Outcomes and Safety in Neurosurgery ([page 52](#))
- 201 ABNS Board Preparation: What You Must Know ([page 59](#))
- 210 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices ([page 62](#))
- 214 Beginning Your Academic Career: Answers to Your Questions ([page 63](#))
- 221 Lumbar Spine Fusion Indications and Complications ([page 65](#))
- Dinner Symposium: The FDA: Investigational Device Exemptions, Regulatory Process and Moving Medical Devices to Patients ([page 69](#))
- 301 Skating to Where the Puck Will Be: Strategies for Neurosurgery Practices and Programs to Compete in Health Care's Future ([page 71](#))
- 305 Developing New Technology: Bringing Device to Market ([page 72](#))
- 322 Advanced Estate Planning and Tax Saving Strategies for the Neurosurgeon ([page 77](#))



Spine Track

- 002 Nuances of MIS and Open Techniques ([page 19](#))
- 005 Integrating Pain Management into Your Neurosurgical Practice ([page 22](#))
- 010 Alternatives to Transpedicular Approaches to Achieving Arthrodesis ([page 25](#))

- 012 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches ([page 26](#))
- 016 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation ([page 28](#))
- 020 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents ([page 35](#))
- 024 Endoscopic Lumbar Spinal Surgery: Cadaveric Hands-on Course ([page 37](#))
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- 027 Update on Spinal Radiosurgery ([page 39](#))
- 032 Thoraco-lumbo-sacral Alignment: Indications, Techniques, and Case Discussions ([page 41](#))
- 103 Update on Lumbar Stenosis ([page 45](#))
- 105 Management of Acute Spinal Cord Injury ([page 46](#))
- 110 Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications ([page 47](#))
- 115 Management of Spinal Axis Trauma ([page 50](#))
- 116 Attaining a Solid Fusion: Evidence Review and Suggestions for Success ([page 50](#))
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- 205 Shoulder vs. Spine: Differentiating Shoulder and Cervical Spine Pathology ([page 60](#))
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- 207 Intramedullary Spinal Cord Tumors ([page 61](#))
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- 217 Management of Adult Scoliosis ([page 64](#))
- 218 New and Evolving Technologies for Minimally Invasive Lumbar Disc Surgery ([page 64](#))
- 303 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery ([page 72](#))
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- 309 Return-to-play After Sports Injury II: Spine Injury ([page 73](#))
- 312 Complications of Complex Spinal Surgery: Lessons Learned ([page 74](#))
- 316 Peripheral Nerve Entrapment Syndromes ([page 75](#))
- 317 Osteoporosis and Spinal Fusion Surgery ([page 75](#))



Stereotactic and Functional Track

- 004 Deep Brain Stimulation: Update and New Directions ([page 22](#))
- 018 Stereotactic and Functional Neurosurgery - Hands-on Workshop ([page 31](#))
- 028 Brain Mapping and Awake Mapping Techniques ([page 39](#))
- 102 Chiari Malformations: Diagnosis, Treatments and Failures ([page 45](#))
- 107 New Innovations in Epilepsy Surgery ([page 47](#))
- 113 Wilder Penfield and the Mapping of Mid-century Neurosurgery: Neurosurgery Becomes Truly Modern ([page 49](#))
- 118 Functional Mapping of the Cerebral Cortex: Advantages and Limitations ([page 50](#))
Dinner Symposium: Cutting Edge Stereotactic Radiosurgery ([page 56](#))
- 204 Surgical Treatment of Parkinson's Disease ([page 60](#))
- 212 Stem Cell Therapeutics in Neurosurgery ([page 62](#))
- 220 Tumor-related Epilepsy ([page 64](#))
- 225 Emerging Indications in Neuromodulation Surgery ([page 66](#))
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- 313 Resective Strategies for Epilepsy ([page 74](#))



Tumor Track

- 006 Update on Tumors for the General Neurosurgeon I: Adult Gliomas and Metastases ([page 23](#))
- 013 Update on Tumors for the General Neurosurgeon II: Skull Base, Pediatric and Spine Tumors ([page 27](#))
- 015 Practical and Technical Aspects of Transsphenoidal Surgery ([page 28](#))
- 016 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation ([page 28](#))
- 104 Intracranial Endoscopy ([page 46](#))
- 106 Pituitary Tumors ([page 46](#))
- 111 How I Do It: Acoustic Tumors ([page 48](#))
- 113 Wilder Penfield and the Mapping of Mid-century Neurosurgery: Neurosurgery Becomes Truly Modern ([page 49](#))

- 119 Malignant Brain Tumors: State-of-the-art Treatment ([page 51](#))
- 122 Update on Rx of Nerve Tumors/MPNST/Peripheral Nerve Spinal Tumors ([page 52](#))
Dinner Symposium: Cutting Edge Stereotactic Radiosurgery ([page 56](#))
- 215 The Spectrum of Adjuvant Therapy for Brain Tumors ([page 63](#))
- 216 Suprasellar and Juxtassellar Tumors: Complications and Avoidance ([page 63](#))
- 220 Tumor-related Epilepsy ([page 64](#))
- 224 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors ([page 66](#))
- 303 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery ([page 72](#))
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- 320 Fluorescence Technologies in Tumor Neurosurgery: Present and Future Directions ([page 76](#))





Saturday, April 30

6:30 a.m.-5:30 p.m.

8 a.m.-5 p.m.

8 a.m.-5 p.m.

8 a.m.-12 p.m.

1-5 p.m.

1-5 p.m.

AANS Registration

All-day Practical Clinics 001-003

International Symposium

Morning Practical Clinics 004-008

Afternoon Practical Clinics 009-016

Leadership Development Course (*By Nomination Only*)

All-day Practical Clinics

8 a.m.-5 p.m.

001 Introduction to Cerebrovascular Neurosurgery for Residents



Cerebrovascular Track, Non-CME Event

Candidate and Medical Student Fee: \$65**

Director: J Mocco, MD, FAANS

Assistant Director: Erol Veznedaroglu, MD, FAANS

Faculty: Adam S. Arthur, MD, 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, FAANS; Elad I. Levy, MD, FAANS; 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 (limited space available).*

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.
- 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 Nuances of MIS and Open Techniques for Adult Spinal Deformity Surgery



Spine Track

Clinic Fee: \$1,950

Director: Praveen V. Mummaneni, MD, FAANS

Assistant Director: Peter Douglas Angevine, MD, FAANS

Faculty: Sanjay Dhall, MD, FAANS; Kai-Ming Fu, MD, PhD, FAANS; Adam S. Kanter, MD, FAANS; Tyler Robert Koski, MD, FAANS; Frank La Marca, MD, FAANS; John E. O'Toole, MD, FAANS; Justin S. Smith, MD, PhD, FAANS; Juan Santiago Uribe, MD, FAANS; Eric J. Woodard, MD, FAANS

This course focuses on the rationale, indications, technique, outcomes and complications of minimally invasive (MIS) and open deformity correction surgery. Each lecture includes clinical pearls and vignettes from experienced surgeons through case-based learning. A cadaver lab enables participants to practice surgical techniques, perform MIS and open procedures and to understand pertinent anatomy.

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

- Describe the controversies in indications for MIS and open deformity surgery.
- Examine the anatomy in a cadaver and understand the limitations and constraints of MIS and open approach deformity surgery.
- Explain the varied complications of MIS and open deformity surgery and learn how to avoid these complications using a cadaveric model.



8 a.m.-5 p.m.

003 You Are Never Too Old for Surgery: Spine Management in an Aging Population



Neurotrauma Track

Clinic Fee: \$600

Advanced Practice Providers Fee: \$420

Director: Andrea L. Strayer, MS, NP, CNRN

Assistant Director: Nathaniel P. Brooks, MD, FAANS

Faculty: Basheal Mohan Agrawal, MD; Bjoern Buehring, MD; Daniel Jin Hoh, MD, FAANS; Jeffrey Holtz, PA-C; Ajit A. Krishnaney, MD, FAANS; Laura Prado, NP; Sharad Rajpal, MD, FAANS; Richard P. Schlenk, MD, FAANS; John H. Shin, MD; Kristina Shultz, NP-C; Michael Patrick Steinmetz, MD, FAANS; 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. An understanding of osteoporosis and perioperative needs of the older adult with spinal challenges is imperative. Treatment decision-making regarding common fractures and degenerative spine disorders is presented for the registered nurse and advanced practice provider, so they 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 the aging and osteoporosis epidemic and the implications for neurosurgeons and advanced practice providers.
- Assess and evaluate nutritional status, potential perioperative complications and pearls for pain management in the older spine patient population.
- Analyze diagnosis, classification and management of upper cervical spine injury, subaxial cervical spine/spinal cord injury and thoracolumbar fractures.
- Determine when the healing endpoint is reached.
- Analyze diagnosis, classification and management of degenerative challenges of the lumbar spine in the older adult patient.





Federación Latinoamericana de
Sociedades de Neurocirugía



8 a.m.-5 p.m.

International Symposium

Moderators: Stereotactic and Functional Session

Nader Pouratian, MD, PhD, FAANS; Andre Guelman Machado, MD, PhD

8-8:20 a.m.

Introduction: Stereotactic and Functional Session

Nader Pouratian, MD, PhD, FAANS; Andre Guelman Machado, MD, PhD

8:22-8:47 a.m.

DBS for Tourette Syndrome

Osvaldo Vilela Filho, MD PhD (Brazil)

8:49-9:14 a.m.

Deep Brain Stimulation in Young Children: Technical Challenge and Outcome

Faisal Al Otaibi, MD (Saudi Arabia)

9:16-9:41 a.m.

Surgical Technique for DREZ Lesions: How I do it

Fabian C. Piedimonte, MD (Argentina)

9:42-10:11 a.m.

Beverage Break

10:12-10:37 a.m.

Surgical Management of Tremor Refractory to VIM DBS: "Rescue" Procedures

Fiacro Jimenez Ponce, MD (Mexico)

10:38-11:03 a.m.

Epilepsy and Mapping

Johannes Schramm, MD (Germany)

11:04-11:29 a.m.

Central and Peripheral Ablation for the Management of Spasticity

Alexandre N. Francisco, MD (Brazil)

11:30 a.m.-12:00 p.m.

Stereotactic & Functional Panel/Case Discussions

12-1:00 p.m.

Lunch

Moderators: Pediatric Session

Gerald A. Grant, MD, FAANS; Todd Cameron Hankinson, MD, MBA, FAANS

1-1:20 p.m.

Introduction: Pediatric Session

Gerald A. Grant, MD, FAANS; Todd Cameron Hankinson, MD, MBA, FAANS

1:22-1:42 p.m.

Craniopharyngioma

Graciela N. Zuccaro, MD, IFAANS (Argentina)

1:44-2:04 p.m.

The Antisecretory Factor (AF) and ICP Management

Mohamed Al Olma, MD (United Arab Emirates)

2:06-2:26 p.m.

Management of Pilocytic and Pilocyxoid Astrocytomas

Abdulrahman Al Anizi, MD (Saudi Arabia)

2:28-2:48 p.m.

Endoscopic Removal of Third Ventricular Tumors

Sergio Cavalheiro, MD (Brazil)

2:50-3:20 p.m.

Beverage Break

3:21-3:41 p.m.

Pediatric Neurosurgery

Hamilton Matushita, PhD MD (Brazil)

3:43-4:03 p.m.

Value Based Medicine, Ethical Issues in Neurosurgical Practice/Long Term Outcome of Hydrocephalus

Ahmed Ammar, MD (Saudi Arabia)

4:05-4:25 p.m.

Folic Acid and Myelomeningocele

Adrian Caceres Chacon, MD (Costa Rica)

4:27-5:00 p.m.

Pediatric/Case Discussions

Morning Practical Clinics

8 a.m.-12 p.m.

004 Deep Brain Stimulation: Update and New Directions



Stereotactic and Functional Track

Clinic Fee: \$450

Director: Aviva Abosch, MD, PhD, FAANS

Assistant Director: Sameer A. Sheth, MD, PhD

Faculty: Casey Harrison Halpern, MD; Michael G. Kaplitt, MD, PhD, FAANS; Brian H. Kopell, MD, FAANS; Paul S. Larson, MD, FAANS; Erika Anne Petersen, MD, FAANS; Nader Pouratian, MD, PhD, 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.
- Discuss emerging indications for DBS, such as medically-refractory obsessive compulsive disorder.

8 a.m.-12 p.m.

005 Integrating Pain Management into Your Neurosurgical Practice



Pain Track; Spine Track

Clinic Fee: \$1,500

Director: Jennifer A. Sweet, MD

Assistant Director: Steven M. Falowski, MD

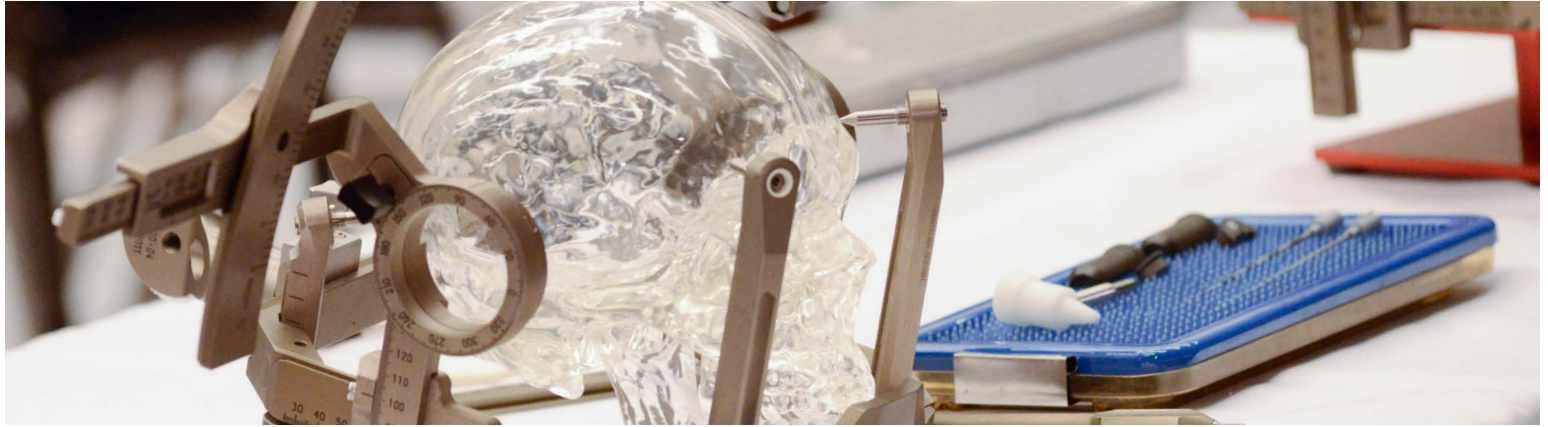
Faculty: John W. German, MD, FAANS; Andre Guelman Machado, MD, PhD; Julie G. Pilitsis, MD, PhD, FAANS; Jason E. Pope, MD; Ashwin Viswanathan, MD

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.
- Apply techniques of spinal cord simulation.





8 a.m.-12 p.m.

006 Update on Tumors for the General Neurosurgeon I: Adult Gliomas and Metastases



Tumor Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Mitchel S. Berger, MD, FAANS

Assistant Director: Nader Sanai, MD, FAANS

Faculty: Susan M. Chang, MD; Peter Edward Fecci, MD; Steven N. Kalkanis, MD, FAANS; George Samandouras, MD, FRCS; Jason P. Sheehan, MD, PhD, FAANS; Andrew E. Sloan, MD, FAANS; Jeffrey S. Weinberg, MD, FAANS

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.
- Apply current updates about brain tumors to daily clinical practice decision-making.

8 a.m.-12 p.m.

007 Negotiating Strategies in Neurosurgery



Socioeconomic Track

Clinic Fee: \$450

Director: E. Hunter Dyer, MD, FAANS

Assistant Director: M. Sean Grady, MD, FAANS

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

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.
- Determine practical approaches for solving current dilemmas in neurosurgeon/hospital relationships.

8 a.m.-12 p.m.

008 Goodman Oral Board Review



Socioeconomic Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Allan D. Levi, MD, PhD, FAANS

Assistant Director: Thomas J. Leipzig, MD, FAANS

Faculty: James S. Harrop, MD, FAANS; Ricardo Jorge Komotar, 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 Preparation 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.
- Recognize the format of the board exam.
- Identify those areas of neurosurgery where further study would be beneficial in preparation for the board exam.



Afternoon Practical Clinics

1-5 p.m.

009 RHOTON LECTURE SERIES: 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base



Cerebrovascular Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

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

Faculty: Paul A. Gardner, MD, FAANS; Pablo Rubino, MD

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.
- Identify surgical anatomy and approaches to the jugular foramen and foramen magnum.
- Describe endoscopic endonasal approaches to the clival and petroclival regions.
- Illustrate the application of surgical neuroanatomy for selection and/or combination of surgical approaches.



1-5 p.m.

010 Alternatives to Transpedicular Approaches to Achieving Arthrodesis



Spine Track

Clinic Fee: \$650

Advanced Practice Providers Fee: \$455

Director: Edward C. Benzel, MD, FAANS

Assistant Director: Neil R. Malhotra, MD, FAANS

Faculty: Charles L. Branch Jr., MD, FAANS; Marc E. Eichler, MD, FAANS; Bruce M. Frankel, MD, FAANS; Ali Kemal Ozturk, MD; Faheem A. Sandhu, MD, PhD, FAANS; Michael Patrick Steinmetz, 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.
- Discuss and perform the techniques presented in a hands-on sawbone model setting.

1-5 p.m.

O11 Comprehensive Interventional Facial Pain Management



New; Pain Track; Peripheral Nerve Track

Clinic Fee: \$1,500

Director: Jonathan P. Miller, MD, FAANS

Assistant Director: Ashwin Viswanathan, MD

Faculty: Kim J. Burchiel, MD, FAANS; Douglas S. Kondziolka, MD, FAANS; Raymond Francis Sekula Jr., MD, FAANS

This practical course provides comprehensive instruction in the neurosurgical management of various facial pain syndromes, including trigeminal neuralgia, trigeminal neuropathic pain, deafferentation pain/anesthesia dolorosa and nociceptive facial pain. Participants learn multiple interventions, including open and percutaneous surgical techniques, radiosurgical treatment and neuromodulation approaches.

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

- Describe facial pain syndromes, including symptoms, signs, natural history, pathophysiology and response to surgical treatment.
- Discuss the technical aspects of surgical, radiosurgical and neuromodulation approaches for facial pain.
- Recognize expected outcomes and complication profile for surgical, radiosurgical and neuromodulation approaches.

1-5 p.m.

O12 Cranio-cervical and CIC2 Stabilization Techniques, Surgical Approaches



Spine Track

Clinic Fee: \$650

Candidate and Medical Student Fee: \$65

Advanced Practice Providers Fee: \$455

Director: Richard C. E. Anderson, MD, FAANS

Assistant Director: Michael G. Kaiser, MD, FAANS

Faculty: Douglas L. Brockmeyer, MD, FAANS; Andrew T. Dailey, MD, FAANS; Harel Deutsch, MD, FAANS; Asdrubal Falavigna, MD, PhD, IFAANS; Wayne M. Gluf, MD, FAANS; Justin W. Miller, MD; Noel I. Perin, MD, FAANS; Charles Sansur, MD, MHSc, FAANS; Juan Santiago Uribe, MD, 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 craniovertebral junction surgical approaches.
- Classify and differentiate craniocervical lesions.
- Identify and treat fusions.



1-5 p.m.

O13 Update on Tumors for the General Neurosurgeon II: Skull Base, Pediatric and Spine Tumors



Tumor Track

Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Director: Michael J. Link, MD, FAANS

Assistant Director: Manish K. Aghi, MD, PhD, FAANS

Faculty: Franco De Monte, MD, FAANS; Ian F. Dunn, MD, FAANS; Ziya L. Gokaslan, MD, FAANS; Ian F. Pollack, MD, FAANS; Jeffrey Raizer, MD; Theodore H. Schwartz, MD, FAANS; John H. Shin, MD; Robert J. Spinner, 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 are encountered by specialists and non-specialists alike. 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.
- Identify the roles for molecular profiling in customizing adjuvant therapy choices in neuro-oncology.

1-5 p.m.

O14 Neurotrauma and Neurocritical Care for the Practicing Neurosurgeon: MOC Review and Update



Neurotrauma Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Advanced Practice Providers Fee: \$315

Director: Patricia B. Raksin, MD, FAANS

Assistant Director: Philip Andrew Villanueva, MD, FAANS

Faculty: Perry A. Ball, MD, FAANS; William M. Coplin, MD; Peter John Hutchinson, MD, FRCS; Joshua Eric Medow, MD, FAANS; David O. Okonkwo, MD, PhD, FAANS; Alex B. Valadka, MD, FAANS

This course offers a review and update of essential concepts in neurotrauma and neurocritical care for providers attending to patients with neurologic injury in the ICU setting. The course is designed with an emphasis on preparation for the MOC exam, but those preparing for the oral board exam or who desire a general overview of neurocritical care topics should find it informative as well. The course focuses 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. Experts present clinical case vignettes, each linked to a series of questions designed to test the provider's understanding of treatment concepts. Discussion and self-assessment will be enhanced through the use of an interactive audience response system (ARS), allowing participants to enter responses and view the range of peer answers in real-time.

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

- Review the mechanics of contemporary ventilator management, fluid resuscitation and hemodynamic management in the trauma patient with neurologic injury.
- Discuss strategies for management of sedation and analgesia in the neurosurgical trauma patient.
- 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.
- Apply relevant evidence-based guidelines for the management of critically ill patients with neurologic injury.
- Review end-of-life and ethical considerations in the management of critically ill neurosurgical patients.

1-3 p.m.

O15 Practical and Technical Aspects of Transsphenoidal Surgery



Tumor Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

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

Assistant Director: Aaron A. Cohen-Gadol, MD, FAANS

Faculty: Garni Barkhoudarian, MD; David S. Baskin, MD, FAANS; John A. Jane Jr., MD, FAANS; 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.
- Evaluate contemporary concepts in adjunctive therapies for patients with pituitary tumors.

1-5 p.m.

O16 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation



Peripheral Nerve Track; Spine Track; Tumor Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Advanced Practice Providers Fee: \$315

Director: Robert J. Spinner, MD, FAANS

Assistant Director: Line Jacques, MD, FAANS

Faculty: Kimberly S. Harbaugh, MD, FAANS; Marie-Noelle Hebert-Blouin, MD, FAANS; Rajiv Midha, MD, 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, 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.
- Review the management of peripheral nerve cases.



1-5 p.m.

Leadership Development Course

(By Nomination Only)



New

Fee: \$450

Directors: Aviva Abosch, MD, PhD, FAANS; William T. Couldwell, MD, PhD, FAANS

Faculty: H. Hunt Batjer, MD, FAANS; Mitchel S. Berger, MD, FAANS; Robert E. Harbaugh, MD, FAANS; Russell R. Lonser, MD, FAANS; Fredric B. Meyer, MD, FAANS; Donald O. Quest, MD, FAANS(L); Jon H. Robertson, MD, FAANS; James T. Rutka, MD, PhD, FAANS; Christopher I. Shaffrey, MD, FAANS; Alex B. Valadka, MD, FAANS

This course provides a mentoring forum to help develop leadership skills among a group of junior or mid-career neurosurgeons, or new chairmen. Registrants must be nominated by the Chairman of their institution, or by senior leadership in their private group. Registrants will be outstanding clinical neurosurgeons with a good academic track record, who possess significant leadership potential. Through participation in this program, the AANS provides a list of individuals appropriate for leadership positions in academic institutions during national searches and presents potential nominees for leadership positions in other societies.

Through this leadership development course, the experienced faculty will walk attendees through four major topic areas pertinent to neurosurgical leaders:

- The Successful Department Chair
- Practice Groups
- Organizational Structure of U.S. Neurosurgery
- Personal Career Development and Growth

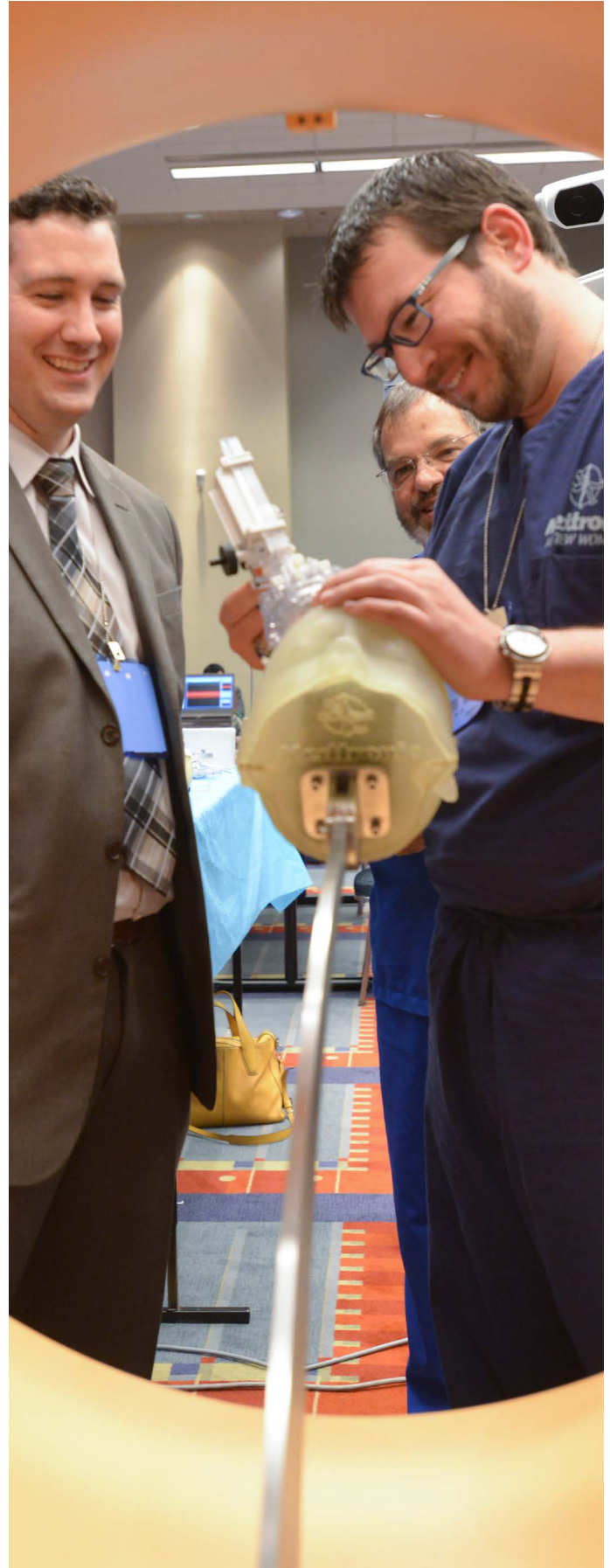
Learning Objectives: After completing this educational activity, participants should be able to:

- Explain the attributes of a solid neurosurgical leader within an academic institution.
- Differentiate the roles and responsibilities of the various neurosurgical leadership organizations.
- Distinguish the neurosurgical practice types and how each leads to career growth.

Nomination request letters will be sent to Directors and Chairmen Jan. 4, 2016

If interested in participating in this course talk to your Director or Chairman about being nominated.

Nominations will be accepted until January 25, 2016.





Sunday, May 1

6:30 a.m.-6:30 p.m.

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

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

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

7:30-11:30 a.m.

12:30-4:30 p.m.

1-4:30 p.m.

5-6:30 p.m.

7-9 p.m.

AANS Registration

All-Day Practical Clinics (017-018)

International Symposium

Advanced Practice Providers Plenary Session

Morning Practical Clinics (019-026)

Afternoon Practical Clinics (027-033)

Young Neurosurgeons Research Forum

Osler Lecture

Duke S. Samson, MD, FAANS

AANS Opening Ceremonies

Gen. Peter W. Chiarelli

Walter Koroshetz

Geoffrey Ling, MD, PhD, Col. (Ret.)

Russell R. Lonser, MD, FAANS

Mike Singletary

AANS Opening Reception at Soldier Field

All-day Practical Clinics

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

017 Current Treatments and Controversies in Traumatic Brain Injury



Neurotrauma Track; Pediatrics Track

Clinic Fee: \$600

Advanced Practice Providers Fee: \$420

Director: Shelly D. Timmons, MD, PhD, FAANS

Assistant Director: David O. Okonkwo, MD, PhD, FAANS

Faculty: Kevin J. Gibbons, MD, FAANS; Gregory W.J. Hawryluk, MD, FAANS; Jack I. Jallo, MD, PhD, FAANS; Ryan Kitagawa, MD; Joshua Eric Medow, MD, FAANS; Jonathan R. Slotkin, MD, FAANS; Martina Stippler, MD, FAANS; Joseph Christopher Zacko, MD, FAANS

This clinic covers the significant breadth of the field of neurotrauma and critical care. It will emphasize practical as well as complex case management issues. Participants will have access to devices for ICP monitoring, parenchymal oxygen monitoring and cerebral blood flow monitoring.

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 advanced neuromonitoring.



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

018 Stereotactic and Functional Neurosurgery - Hands-on Workshop



Stereotactic and Functional Track

Clinic Fee: \$900

Director: Robert E. Gross, MD, PhD, FAANS

Assistant Director: Steven G. Ojemann, MD, FAANS

Faculty: Aviva Abosch, MD, PhD, FAANS; Kathryn Lois Holloway, MD, FAANS; Willard S. Kasoff, MD; 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; Jon T. Willie, MD, PhD

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 focuses 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.
- Use 2D fluorography, 3D fluorography and CT scanning intraoperatively to verify electrode position after implantation of DBS electrodes.



Federación Latinoamericana de
Sociedades de Neurocirugía



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

International Symposium

Moderators: Spine Session

Edward C. Benzel, MD, FAANS, Praveen V. Mummaneni, MD, FAANS; Michael Y. Wang, MD, FAANS

7:30-7:35 a.m.

Introduction

Jacques J. Morcos, MD, FAANS; Anil Nanda, MD, MPH, FAANS; Michael Y. Wang, MD, FAANS

7:36-7:51 a.m.

Failed Back Syndrome

Claudio G. Yampolsky, MD, IFAANS (Argentina)

7:52-8:07 a.m.

Dynamic Stabilization, Pearls and Pitfalls - Experience in Latin America

Basilio Fernandez, MD (Mexico)

8:08-8:23 a.m.

Lumbar Spinal Stenosis

Marcos Masini, MD (Brazil)

8:24-8:39 a.m.

Far Lateral Disc: Surgical Classification

Remberto Burgos, MD (Colombia)

8:40-8:55 a.m.

Minimal Invasive Extraforaminal Lumbar Interbody Fusion

Asdrubal Falavigna, MD, PhD, IFAANS (Brazil)

8:56-9:11 a.m.

Endoscopic Approaches in Lumbar Degenerative Diseases

Enrique Osorio Fonseca, MD (Colombia)

9:12-9:27 a.m.

Anterior C1/2 Transarticular Screw Fixation

Antonino Raco, MD, IFAANS (Italy)



9:28-9:43a.m

Enhancing Patient Care: Introducing a Telepresence Robot to the Neurosurgery Ward, an Australian Experience

Matthew McDonald, MD (Australia)

9:44-9:59 a.m.

Beverage Break

9:59-10:24 a.m.

Spine Panel/Case Discussions

Moderators: Tumor Session

Linda M. Liau, MD, PhD, FAANS; Anil Nanda, MD, MPH, FAANS; Lalgam N. Sekhar, MD, FAANS

10:24-10:39 a.m.

Is Aggressive Resection Beneficial in Malignant Gliomas?

José Marcus Rotta, MD (Brazil)

10:40-10:55 a.m.

Management of Craniopharyngiomas

Abdeslam El Khamlichi, MD, IFAANS (Morocco)

10:56-11:11 a.m.

Brain Metastases: Radiosurgery or Microsurgery? The Evidence

Mario Izurieta-Ulloa, MD (Ecuador)

11:12-11:27 a.m.

Acoustic Neuromas: Surgical Techniques and Results

Pablo Marcelo Ajler, MD (Argentina)

Sunday, May 1 [continued]

11:28-11:43 a.m.

Non-Acoustic Schwannomas: Surgical Techniques and Results

Ricardo Ramina, MD (Brazil)

11:44-11:59 a.m.

Anterior Skull Base Lesions: Surgical Philosophy and Techniques

Gerardo Guinto-Balazar, MD, FAANS (Mexico)

12-12:15 p.m.

Endonasal Endoscopic Approaches: When do they Replace Open Approaches?

José Alberto Landeiro, MD (Brazil)

12:16-12:31 p.m.

Glomus Tumors: Secrets to Lowering Surgical Morbidity

Luis Alencar Borba, MD (Brazil)

12:32-1:17 p.m.

Lunch

1:17-1:42 p.m.

Tumor Panel/Case Discussions

Moderators: Cerebrovascular Session

Roberto C. Heros, MD, FAANS(L); Giuseppe Lanzino, MD, FAANS; Jacques J. Morcos, MD, FAANS

1:42-1:57 p.m.

AVM Surgery: What Have I Learned in Four Decades?

Evandro Pinto da Luz de Oliveira, MD, PhD, IFAANS (Brazil)

1:58-2:13 p.m.

Bypass Surgery for Ischemia: Status in 2016

Peter Vajkoczy, MD (Germany)

2:14-2:29 p.m.

Cranial Dural AV Fistulae: When to Operate, When to Embolize, When to Observe

Luca Regli, MD, IFAANS (Switzerland)

2:30-2:45 p.m.

Microvascular Decompression: Techniques and Results

Rogelio Revuelta Gutierrez, MD, FAANS (Mexico)

2:46-3:01 p.m.

Critique of ARUBA AVM Study

Sepideh Amin-Hanjani, MD, FAANS (U.S.)

3:02-3:17 p.m.

Surgery for Paraclinoid Aneurysms in the Era of Flow Diverters

Pablo Rubino, MD (Argentina)

3:18-3:33 p.m.

Complications in Aneurysm Surgery

Francisco Papalini, MD (Argentina)

3:34-3:49 p.m.

Role of Aneurysm Clipping in Uruguay

Edgardo Spagnuolo, MD (Uruguay)

3:50-4:05 p.m.

Beverage Break

4:05-4:30 p.m.

Cerebrovascular Panel / Case Discussions





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

Advanced Practice Providers Plenary Session

Moderators: Marianne E. Langlois, MS, PA-C; Cristina Matthews, MSN, FNP-BC

7:30-7:44 a.m.

AANS Board of Directors – Welcome/ APPs in Neurosurgery

H. Hunt Batjer, MD, FAANS; Frederick A. Boop, MD, FAANS

7:45-8:44 a.m.

Update on Spine Trauma and Spinal Cord Injury

Allan D. Levi, MD, PhD, FAANS

8:45-9:44 a.m.

Update on Severe Traumatic Brain Injury

Jamie Ullman, MD, FAANS

9:45-9:59 a.m.

Break

10-10:59 a.m.

Cerebral Aneurysms and AVMs – Diagnosis and Treatment Options

Aman Patel, MD, FAANS

11-11:59 a.m.

Endovascular Stroke Care – The Evolving Landscape

Thabele M. (Bay) Leslie-Mazwi, MD

12-1 p.m.

Lunch Break

1-1:49 p.m.

Pain and Pain Management

Speaker TBA

1:50-2:39 p.m.

Spirituality in Medicine

Mahmoud Rashidi, MD, FAANS

2:40-2:54 p.m.

Break

2:55-3:34 p.m.

ICD-10 and the Neurosurgical APP

Speaker TBA

3:35-4:14 p.m.

Abstract Presentations

4:15-4:30 p.m.

Question and Answer Session

Morning Practical Clinics

7:30-11:30 a.m.

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



Socioeconomic Track

Clinic Fee: \$600

Candidate and Medical Student Fee: \$65

Advanced Practice Providers Fee: \$420

Director: John Kevin Ratliff, MD, FAANS

Assistant Director: Joseph S. Cheng, MD, MS, FAANS

Faculty: Peter Douglas Angevine, MD, FAANS; Robert R. Johnson II, MD, FAANS; Alexander M. Mason, MD, FAANS; Kim Pollock, RN, MBA; Clemens M. Schirmer, MD, PhD, FAANS; Karin R. Swartz, MD, FAANS; Luis Manuel Tumialan, MD, FAANS

This new AANS Managing Coding and Reimbursement course provides a summary of the 2016 CPT coding changes including the recent ICD-10 implementation. The course reviews 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 2016 CPT codes to key neurosurgical services.
- Discuss key concepts in reporting neurosurgical CPT codes and modifiers to effectively describe professional surgical and E&M work.
- Explain fundamental differences between ICD-10 nomenclature and ICD-9 nomenclature in reporting neurosurgical diagnoses.



7:30-11:30 a.m.

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



Spine Track

Clinic Fee: \$650

Candidate and Medical Student Fee: \$65

Advanced Practice Providers Fee: \$315

Director: Kaushik Das, MD, FAANS

Assistant Director: Langston T. Holly, MD, FAANS

Faculty: Victor Chang, MD; Virany Huynh Hillard, MD, FAANS; Saad Abul Khairi, MD, FAANS; Naresh P. Patel, MD, FAANS; Nicholas Theodore, 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.
- Describe operative approaches and surgical techniques for spinal fusion and instrumentation.



7:30-11:30 a.m.

021 Applications of Video and 3D Technology in Neurosurgery



Socioeconomic Track

Clinic Fee: \$450

Director: Jeffrey M. Sorenson, MD, FAANS

Assistant Director: Andrew W. Grande, MD

Faculty: Juan Carlos Fernandez-Miranda, MD; James K. Liu, 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.
- Evaluate applications of video conferencing.

7:30-11:30 a.m.

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



Cerebrovascular Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Anil Nanda, MD, MPH, FAANS

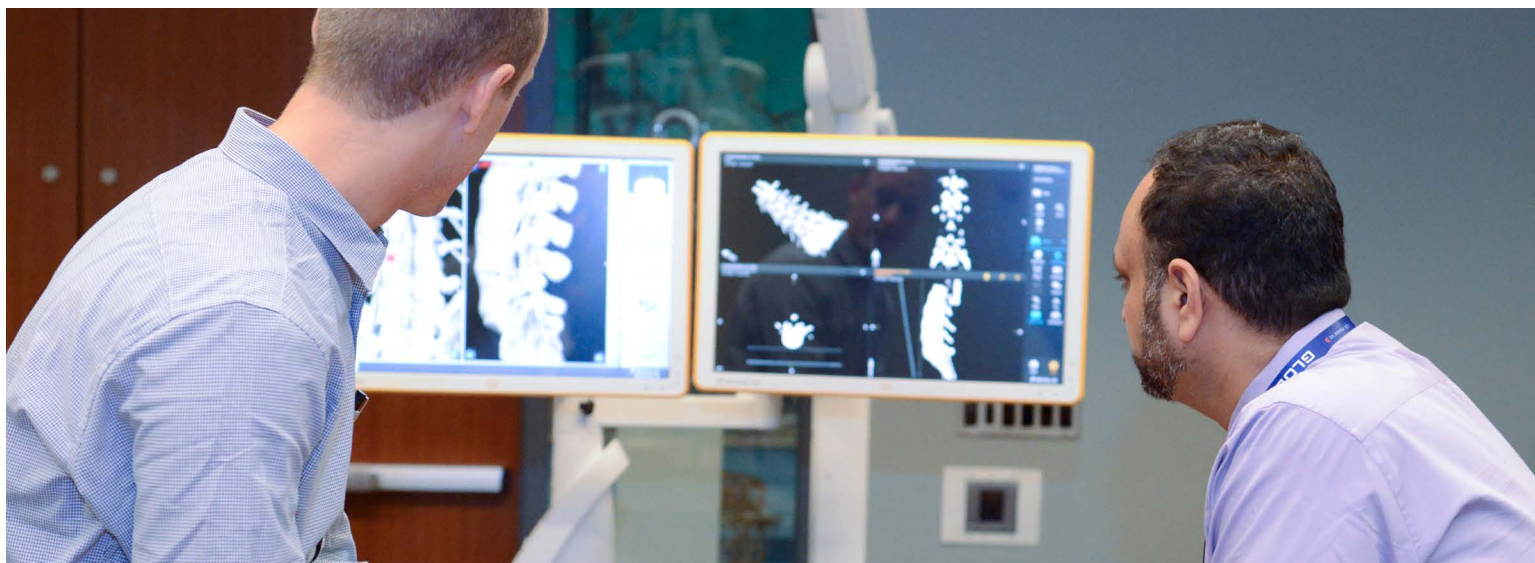
Assistant Director: William T. Couldwell, MD, PhD, FAANS

Faculty: 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.
- Distinguish safe approaches to brainstem lesions.



7:30-11:30 a.m.

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



Cerebrovascular Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Arthur L. Day, MD, FAANS

Assistant Director: Ralph G. Dacey Jr., MD, FAANS

Faculty: Steven L. Giannotta, MD, FAANS; Robert E. Replogle, MD, FAANS; Babu G. Welch, 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.
- Identify new methods of intervention for cerebral aneurysms.

7:30-11:30 a.m.

024 Endoscopic Lumbar Spinal Surgery: Cadaveric Hands-on Course



New; Spine Track

Clinic Fee: \$1,500

Director: Michael Y. Wang, MD, FAANS

Assistant Director: Peter Witt, MD, FAANS

Faculty: Christoph Paul Hofstetter, MD, PhD; Hae-Dong Jho, MD, PhD, FAANS; Daniel T. Laich, DO; Albert Telfian, MD

In this cadaveric hands-on course, participants explore the application of working-channel endoscopy for treating thoracolumbar spine disorders. Transforaminal and interlaminar discectomy techniques are applied in a lab setting for treating spinal stenosis and radiculopathy with an emphasis on safe and effective surgical technique. The course is taught by experienced endoscopists and will be of benefit to the beginning, intermediate or advanced surgeon.

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

- Discuss the indications and contraindications of working-channel spinal endoscopy.
- Apply fluoroscopic targeting techniques to safely access the disc space using the minimal access working channel.
- Perform both transforaminal and interlaminar endoscopy for removal of lumbar disc herniations.

7:30-11:30 a.m.

O25 Pediatric Endoscopic Craniosynostosis Repair



New; Pediatrics Track

Clinic Fee: \$650

Director: David F. Jimenez, MD, FAANS

Assistant Director: Todd Cameron Hankinson, MD, MBA, FAANS

Faculty: Mark R. Proctor, MD, FAANS; Ann M. Ritter, MD, FAANS; Matthew D. Smyth, MD, FAANS

This course presents the endoscopic-assisted management of craniosynostosis with a combination of didactic lectures and a hands-on workshop. Didactic lectures describe the patient selection process, surgical techniques for management of all synostosis types, expected short- and long-term outcomes and complications.

Extensive video presentations graphically describe techniques and associated nuances. The hands-on workshop will expose participants to the OR setup, instrumentation, endoscopes and techniques for performing surgery. By course's end, participants will be fully informed on how to select and perform endoscopic-assisted techniques as well as to understand the importance of post-operative cranial orthosis adjunct therapy.

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

- List the clinical indications for treating infants with craniosynostosis using minimally invasive endoscopic techniques.
- Summarize the instrumentation and surgical suite set up for endoscopic craniosynostosis surgery.
- Describe the surgical techniques used in endoscopic assisted craniosynostosis surgery.
- Discuss the principles, techniques and results associated with the postoperative use of cranial orthosis after endoscopic surgery.

7:30-11:30 a.m.

O26 Update on the Management of Spine and Spinal Cord Injury



Ethics Track; Spine Track

Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Director: James S. Harrop, MD, FAANS

Assistant Director: Daniel Jin Hoh, MD, FAANS

Faculty: Bizhan Aarabi, MD, FAANS; Michael G. Fehlings, MD, PhD, FAANS; W. Bradley Jacobs, MD, FAANS; 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.
- Discuss various spine trauma classification systems and their role in clinical decision-making.

Afternoon Practical Clinics

12:30-4:30 p.m.

027 Update on Spinal Radiosurgery



Spine Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Mark H. Bilsky, MD, FAANS

Assistant Director: 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.
- List the advantages and disadvantages of spinal radiosurgery techniques.

12:30-4:30 p.m.

028 Brain Mapping and Awake Mapping Techniques



Stereotactic and Functional Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Gerald A. Grant, MD, FAANS

Assistant Director: Guy M. McKhann II, MD, FAANS

Faculty: Nicholas M. Barbaro, MD, FAANS; Gene H. Barnett, MD, FAANS; Mitchel S. Berger, MD, FAANS; Hugues Duffau, MD; Konstantinos N. Fountas, MD, PhD, IFAANS; Jorge Alvaro Gonzalez-Martinez, MD, PhD, FAANS; Zvi Ram, MD, IFAANS; 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.
- Recognize complication avoidance in epilepsy and brain-mapping techniques.





12:30-4:30 p.m.

029 RHOTON LECTURE SERIES:
3D Anatomy and Approaches to the
Supratentorial Area and Anterior Skull Base



Cerebrovascular Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

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

Faculty: Mustafa Kemal Baskaya, MD, FAANS; Pablo Rubino,
MD; Ugur Ture, MD, IFAANS

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.
- Discuss the different routes through the anterior skull base, middle fossa and cavernous sinus, including endoscopic endonasal and transcranial approaches.

12:30-4:30 p.m.

**030 How to Tackle Difficult Cranial
Cases: A Step-by-step 3D Case-based
Presentation**



Cerebrovascular Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

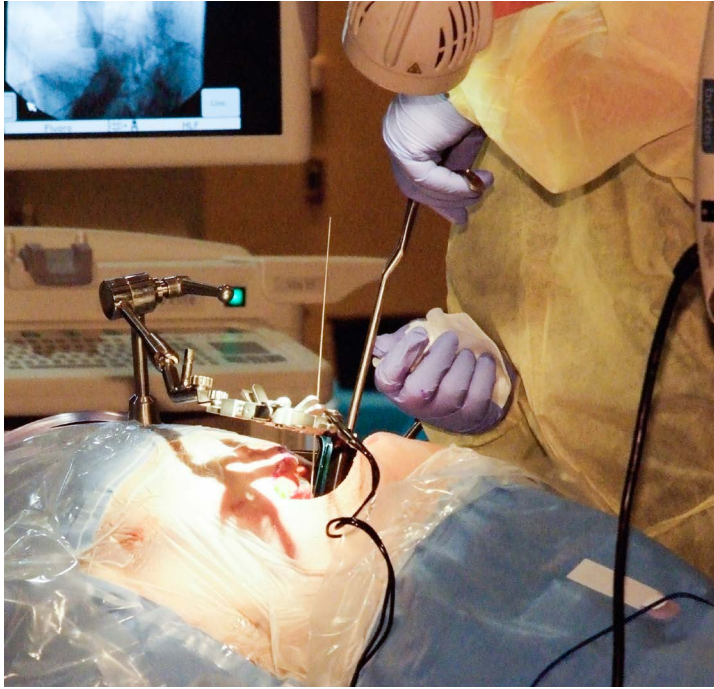
Director: Aaron A. Cohen-Gadol, MD, FAANS

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.
- Discuss the nuances of techniques for managing challenging cranial procedures.



12:30-4:30 p.m.

031 State-of-the-art: Cranial Endoscopy



Cerebrovascular Track

Clinic Fee: \$1,500

Director: Alan R. Cohen, MD, FAANS

Assistant Director: Mark M. Souweidane, MD, FAANS

Faculty: Ian F. Dunn, MD, FAANS; Johnathan A. Engh, MD, FAANS; J. Andre Grotenhuis, MD, PhD, IFAANS; Daniel James Guillaume, MD, FAANS; Carl B. Heilman, MD, FAANS; Tenoch Herrada-Pineda, MD, FAANS; Roberta Rehder, MD; Henry W. S. Schroeder, MD, PhD, IFAANS; Timothy W. Vogel, MD

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.
- Discuss strategies for avoiding complications in intracranial endoscopy.

12:30-4:30 p.m.

032 Thoraco-lumbo-sacral Alignment: Indications, Techniques and Case Discussions



Spine Track

Clinic Fee: \$450

Advanced Practice Providers Fee: \$315

Director: Regis W. Haid Jr., MD, FAANS

Assistant Director: Christopher I. Shaffrey, MD, FAANS

Faculty: Dean Chou, MD, FAANS; Domagoj Coric, MD, FAANS; Praveen V. Mummaneni, MD, FAANS; Paul Park, MD, FAANS; Justin S. Smith, MD, PhD, 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).
- Discuss common complications and management associated with thoracic and lumbar fusion.

12:30-4:30 p.m.

033 Neurosurgical Care of Athletes - Concussion, Spine, Peripheral Nerve and Return to Play



Ethics Track; Neurotrauma Track

Clinic Fee: \$450

Candidate and Medical Student Fee: \$65

Director: Allen Kent Sills, MD, FAANS

Faculty: Julian E. Bailes Jr., MD, FAANS; Gary Solomon, PhD; Robert J. Spinner, MD, FAANS; Nicholas Theodore, MD, FAANS; Alex B. Valadka, MD, FAANS

This newly updated 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.
- Discuss role of the neurosurgeon as a member of the sports medicine team and how to initiate relationships with sports organizations.

1-4:30 p.m.

Young Neurosurgeons Research Forum

Moderators: Michael Edward Ivan, MD; Krystal Lynne Tomei, MD, MPH; Stacey C. Wolfe, MD, FAANS

Osler Lecture

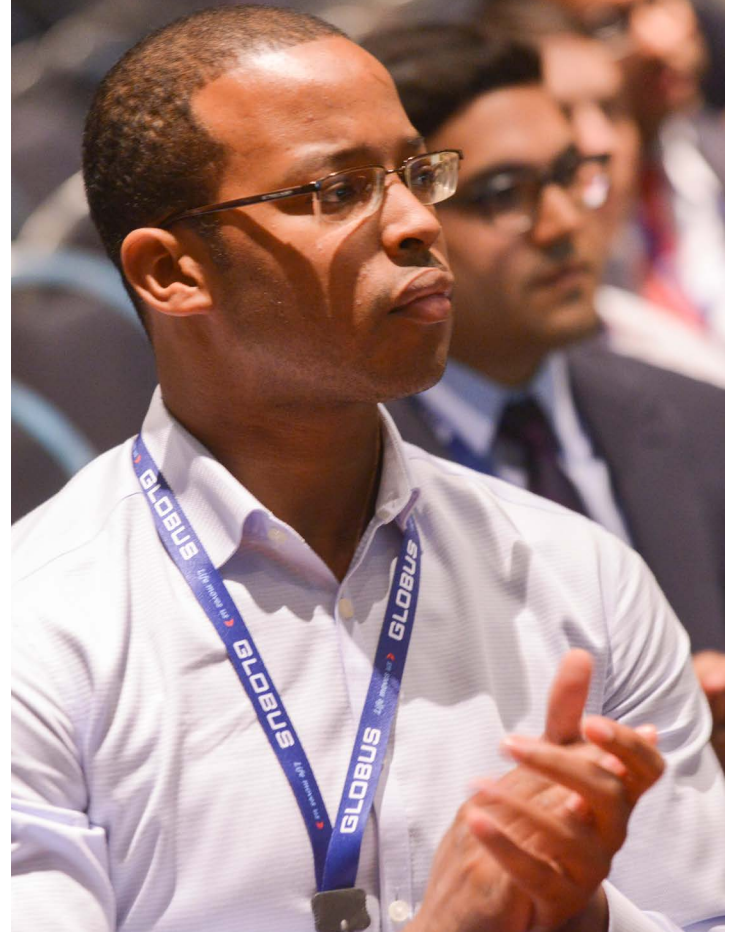
Duke S. Samson, MD, FAANS

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.

Abstract Presentations and Quest Awards

Resident, fellow and medical student abstract presentations will be evaluated by an expert panel and four Donald O. Quest Science Awards will be presented for top-scoring abstracts. A winner from each of the following categories will receive a cash prize for his or her presentation:

- Basic science abstract from a resident or fellow
- Basic science abstract from a medical student
- Clinical abstract from a resident or fellow
- Clinical abstract from a medical student





5-6:30 p.m.

AANS Opening Ceremonies

Moderator: Sanjay K. Gupta, MD, FAANS

To highlight the theme of *Neurosurgery Leading the Way*, hear from several notable leaders on how neuroscience and neurosurgery have helped advance their fields. Speakers include Gen. Peter W. Chiarelli, former vice chief of staff of the U.S. army and recipient of the Patriot Award for his continued dedication to advancing research of mental illness and brain injuries, and Geoffrey Ling, MD, PhD, Col. (Ret.), the founding director of the Biological Technologies Office at DARPA. Also speaking are Walter J. Koroshetz, MD, Director of the National Institute of Neurological Disorders and Stroke (NINDS) and Russell R. Lonser, MD, FAANS. The National Football League (NFL) Football Hall of Famer and former Chicago Bear, Mike Singletary.

The AANS Opening Ceremonies will be moderated by CNN's chief medical correspondent and Emory University Assistant Professor of Neurological Surgery, Sanjay K. Gupta, MD, FAANS.

7-9 p.m.

AANS Opening Reception at Soldier Field

With its stately roman columns and panoramic view of Lake Michigan, Soldier Field functions as the perfect welcome to Chicago and kick-off for the 2016 AANS Annual Scientific Meeting. Join your colleagues on Sunday evening for a chance to enjoy this historic venue, refreshments and hors d'oeuvres.

Opened to the public in 1924, Soldier Field stands as one of the oldest and most storied stadiums in professional sports. Prior to its current role as home field of the Chicago Bears, the stadium hosted crowds in excess of 100,000 for civic events, heavyweight matches, college football games and a presidential visit from President Franklin Roosevelt.





Monday, May 2

6:30 a.m.-4 p.m.

7-9 a.m.

9 a.m.-4:15p.m.

9-9:45 a.m.

9:40-9:45 a.m.

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

1-2 p.m.

1:10-2 p.m.

1:10-1:55 p.m.

1:15-2:45 p.m.

2-3:30 p.m.

2-5:30 p.m.

3:30-4 p.m.

5:30-6:30 p.m.

6:30-8:30 p.m.

6:30-9:30 p.m.

8-9:30 p.m.

AANS Registration

Breakfast Seminars (101-125)

AANS Exhibit Hall

Morning Beverage Break in the AANS Exhibit Hall

Historical Vignette

Plenary Session I

Hunt-Wilson Lecture

Gen. Peter W. Chiarelli

Richard C. Schneider Lecture

Alim L. Benabid, MD, PhD, IFAANS

AANS Presidential Address

H. Hunt Batjer, MD, FAANS

Lunch in the AANS Exhibit Hall

Neurosurgery "In Press": Latest Results of Clinical Trials in Neurosurgery and Allied Fields

Lunch-and-learn Seminars

Non-CME Events

Advanced Practice Providers Luncheon

Operative Nuances I: Tackling Challenging Cases 3D Video Presentation

Scientific Sessions I-VII

Scientific Session I: Tumor

Scientific Session II: Spine

Scientific Session III: Stereotactic and Functional Surgery

Scientific Session IV: Pediatrics

Scientific Session V: Cerebrovascular

Scientific Session VI: Neurotrauma and Critical Care

Scientific Session VII: AANS/CSNS Socioeconomic

Afternoon Beverage Break in the AANS Exhibit Hall

Joint Annual Business Meeting of the American Association of Neurological Surgeons and the American Association of Neurosurgeons

Dinner Symposium: Cutting Edge Stereotactic Radiosurgery

AANS History Section Dinner at University Club of Chicago

AANS International Reception at the Chicago Cultural Center

Buy Two

Breakfast Seminars

get the **Third Free**

Offer Available until Monday, April 4, 2016

7-9 a.m.

Breakfast Seminars (101-125)

\$100 each, \$65 each for Candidate and Medical Students.

Breakfast will be served in each room.

101 How to Write and Publish a Successful Neurosurgical Manuscript



Ethics Track; Socioeconomic Track

Moderator: Anil Nanda, MD, MPH, FAANS

Panelists: Edward C. Benzel, MD, FAANS; M. Necmettin Pamir, MD, IFAANS; 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.
- Recognize the various forms of plagiarism and how to avoid them.
- Identify how to use appropriate illustrations and statistical tests.

102 Chiari Malformations: Diagnosis, Treatments and Failures



Stereotactic and Functional Track

Moderator: David Delmar Limbrick Jr., MD, PhD, FAANS

Panelists: Ulrich Batzdorf, MD, FAANS(L); Gerardo Guinto-Balanzar, MD, FAANS; Mark R. Iantosca, MD, 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.
- Discuss the options and recognize the indications for treatment of Chiari malformations.

103 Update on Lumbar Stenosis



Spine Track

Moderator: Robert E. Isaacs, MD, FAANS

Panelists: John E. O'Toole, MD, FAANS; Daniel M. Sciubba, MD, FAANS; Claudius Thome, MD, IFAANS

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.
- Explain the data underlying the newer and less-conventional operative therapies for spinal stenosis.



104 Intracranial Endoscopy



Pediatrics Track; Tumor Track

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, IFAANS

This seminar focuses on the state-of-the-art of intracranial endoscopic neurosurgery, including ventriculoscopy surgery, endoscope-assisted microsurgery 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 skull base surgery.
- Evaluate the efficacy of endoscope-assisted craniosynostosis surgery.

105 Management of Acute Spinal Cord Injury



Spine Track

Moderator: Michael G. Fehlings, MD, PhD, FAANS

Panelists: Richard C.E. Anderson, MD, FAANS; Gregory W.J. Hawryluk, MD, FAANS; Eve C. Tsai, MD, PhD, 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.
- Discuss recent developments in clinical trials for spinal cord injury.

106 Pituitary Tumors



Tumor Track

Moderator: Daniel Monte-Serrat Prevedello, MD

Panelists: Manish K. Aghi, MD, PhD, FAANS; William T. Couldwell, MD, PhD, FAANS; Nelson M. Oyesiku, MD, PhD, 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.
- Provide current treatment algorithms for patients with atypical and/or invasive pituitary adenomas.

107 New Innovations in Epilepsy Surgery



Stereotactic and Functional Track

Moderator: Nicholas M. Barbaro, MD, FAANS

Panelists: P. David Adelson, MD, FAANS; Robert E. Gross, MD, PhD, FAANS; Jean Regis, MD; Matthew D. Smyth, MD, FAANS

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.
- Discuss the current experimental therapies being developed as non-resective strategies and review the currently approved non-resective surgical treatments of epilepsy.

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



Cerebrovascular Track

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

Panelists: Rocco A. Armonda, MD, FAANS; C. Michael Cawley, MD, FAANS; David M. Hasan, MD, FAANS; Jacques J. Morcos, MD, FAANS; Francisco Papalini, MD

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.
- Assemble strategies for treatment and salvage of recurrent and difficult intracranial aneurysms.

109 Cavernous Malformation: Current Controversies in Management



Cerebrovascular Track

Moderator: Murat Gunel, MD, FAANS

Panelists: Michael T. Lawton, MD, FAANS; R. Michael Scott, MD, FAANS(L); 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.
- Review familiar cavernous malformation syndromes.

110 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.
- Discuss the indications, results and potential complications for these techniques.

111 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; Ricardo Ramina, MD; 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.
- Discuss how to avoid complications and study the outcome of surgery, radiation treatment and observation.

112 Controversies in the Management of Intracerebral Hematomas



Neurotrauma Track

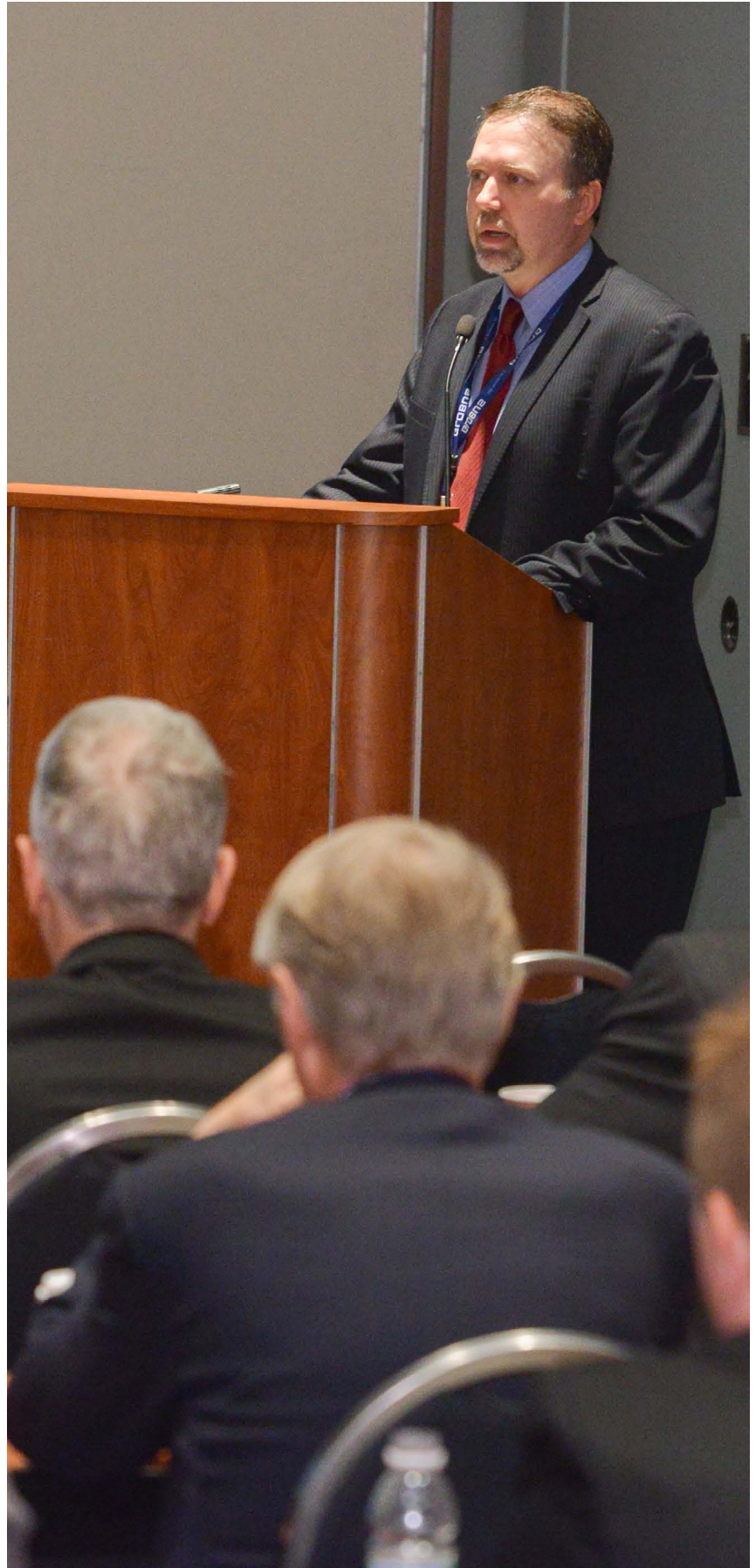
Moderator: E. Sander Connolly Jr., MD, FAANS

Panelists: Neil A. Martin, MD; Alexander David Mendelow, FRCS, PhD; 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.
- Discuss evidence-based medicine in the management of a patient with intracerebral hemorrhage.





113 Wilder Penfield and the Mapping of Mid-century Neurosurgery: Neurosurgery Becomes Truly Modern



New; History Track; Stereotactic and Functional Track; Tumor Track

Moderator: Mark C. Preul, MD

Panelists: Samuel H. Greenblatt, MD, FAANS(L); Chris A. Sloffer, MD, MBA, FAANS

Wilder Penfield effectively began his career in 1928 when he moved from New York to Montreal. From 1928 to 1934, he worked to establish a neurosurgery department with neurology and science. This work culminated in the founding of the Montreal Neurological Institute, a completely integrated clinical-scientific endeavor established with Rockefeller funding, much to the envy of Harvey Cushing. Although guided and advised by Cushing, Penfield was not his trainee and pursued an independent course. Penfield's initial goals involved brain tumor and epilepsy studies with scientists and clinicians working in collaboration. Penfield also established a training program that closely resembles modern programs. A visionary for cerebrovascular surgery, he foresaw the surgery of the arteries using endovascular techniques and specialized personnel. Perhaps his greatest contribution, however, were his singular intraoperative studies of the brain to map function and correlate findings to structure and cognition. Penfield became a leading member of many major medical and scientific organizations around the world. Perhaps no other figure was as well recognized for being the "modern" neurosurgeon as Wilder Penfield.

To prepare for this seminar, a selection of Penfield's papers will be read, especially those concerned with brain mapping and function, excerpts from his autobiography and philosophical works. The readings are sent to participants approximately six weeks before the meeting. The panelists will be the entire audience, and the interactive framework is that of a guided graduate seminar discussion. Dr. Preul will make a few historical remarks to start, but there will be no formal presentations. Drs. Greenblatt and Sloffer will guide the discussion as well. This seminar builds on previous seminars in past years, and we will quickly review those themes.

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 Chicago will not be sufficient.

Learning Objectives:

- Summarize the historical background to Penfield's initial work, especially the importance of Ferrier, Hughlings Jackson, Betz, Horsley, Sherrington, and Cushing.
- Identify the nature and limits of Penfield's early experimental work on brain mapping, viz a viz later work.
- Explain Penfield's aspirations to set up a truly modern, integrated neuroscience institute.
- Describe Penfield's impact on neurosurgery as a modern surgical specialty.

114 Contemporary Management for Adult Hydrocephalus



Cerebrovascular Track

Moderator: Guy M. McKhann II, MD, FAANS

Panelists: Mark D. Johnson, MD, FAANS; Petra Margarete Klinge, MD, PhD; Mark G. Luciano, MD, PhD, FAANS; Daniele Rigamonti, MD, FAANS; Jonathan A. White, 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.
- Evaluate the pros and cons of shunt surgery versus ETV in the management of adult hydrocephalus.



115 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; Daniel C. Lu, MD, PhD, 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.
- Review rationale for various spine trauma treatments.

116 Attaining a Solid Fusion: Evidence Review and Suggestions for Success



Spine Track

Moderator: Nicholas Theodore, MD, FAANS

Panelists: Muwaffak M. Abdulhak, MD, FAANS; Joseph S. Cheng, MD, MS, FAANS; Allan D. Levi, MD, PhD, FAANS

This seminar will focus on cutting-edge strategies for spine stabilization, specifically focusing on bone-graft extenders and 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.
- Discuss current and future use of biologics for disc disease.

117 Getting the Most Out of Your Residency



Socioeconomic Track

Moderator: Lawrence S. Chin, MD, FAANS

Panelists: Aruna Ganju, MD, FAANS; Matthew A. Howard III, MD, FAANS; Nathan R. Selden, MD, PhD, 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.
- Discuss the challenges facing neurosurgery and how to position yourself for success in a changing health-care environment.

118 Functional Mapping of the Cerebral Cortex: Advantages and Limitations



Stereotactic and Functional Track

Moderator: Richard W. Byrne, MD, FAANS

Panelists: Edward F. Chang, MD; Guillaume Herbet, MD, PhD; Toshihiro Kumabe, MD, PhD; 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.
- Describe common technical errors made in functional mapping.



119 Malignant Brain Tumors: State-of-the-art Treatment



Tumor Track

Moderator: Joseph M. Piepmeier, MD, FAANS

Panelists: Gavin Peter Dunn, MD, PhD; Peter Edward Fecci, MD; Linda M. Liau, MD, PhD, FAANS; Colin Watts, FRCS, PhD; Graeme Woodworth, MD, FAANS

This seminar discusses new advances in the management of malignant gliomas, including gene therapy, convection-enhanced drug delivery and immunotherapy. These advances are 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 tumor biology, novel delivery techniques and vaccine therapy.
- Explain the role of tumor genetics in determining treatment options and outcomes.

120 Cerebral Venous System: Surgical Considerations



Cerebrovascular Track

Moderator: Jeffrey M. Sorenson, MD, FAANS

Panelists: Ossama Al-Mefty, MD, FAANS; Ashok R. Asthagiri, MD, FAANS; Turker Kilic, MD, PhD, IFAANS; 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.
- Discuss the anatomy of the approaches to the cavernous sinus and jugular foramen.

121 Becoming an Exceptional Advanced Practice Provider in Neurosurgery - Pearls from Your Peers



New; Socioeconomic Track

Moderator: Cristina Matthews, MSN, FNP-BC; Marianne E. Langlois, MS, PA-C

Panelists: Robert James Griffin, PA-C MS; Inam U. Kureshi, MD, FAANS; David Melzack, RN, NP

The utilization of advance practice providers (APPs) in neurosurgery is increasing throughout the specialty in private practice, hospitals and academic settings. This breakfast seminar examines ways in which the APP can become a proficient and valuable provider. A panel consisting of a physician assistant, nurse practitioner and neurosurgeon will present their views on how to advance in this challenging and ever-changing surgical environment.

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

- Describe the training involved to advance in the specialty of neurosurgery.
- Summarize the challenges of integrating APPs and neurosurgical residents into a practice.
- Recognize the different roles APPs play within the operation room, clinic and ICU.

122 Update on Rx of Nerve Tumors/MPNST/Peripheral Nerve Spinal Tumors



Tumor Track; Peripheral Nerve Track

Moderator: Rajiv Midha, MD, MS, FAANS

Panelists: Kimberly S. Harbaugh, MD, FAANS; Michel Kliot, MD, FAANS; Robert J. Spinner, 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.
- Recognize indications for surgery of nerve tumors.
- Give examples of imaging and technical advances pertinent for managing nerve tumors.

123 Humanitarian Neurosurgery



Socioeconomic Track

Moderator: Merwyn Bagan, MD, FAANS(L)

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.

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

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

124 Measuring Outcomes and Safety in Neurosurgery



Socioeconomic Track

Moderator: Paul Joseph Camarata, MD, FAANS

Panelists: Alan S. Boulous, MD, FAANS; Mohamad Bydon, MD; Jonathan R. Slotkin, MD, FAANS

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.
- Identify the differences between outcome measures and select the one which is suited for most of the neurosurgical patients.

125 Management of Cranial Incidental Imaging Findings



Ethics Track; Spine Track

Moderator: Cormac O. Maher, MD, FAANS

Panelists: Sepideh Amin-Hanjani, MD, FAANS; Mitchel S. Berger, MD, FAANS; Stephen J. Haines, MD, FAANS; Satoshi Kuroda, MD, PhD

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.
- Discuss the reasons why a particular incidental finding needs intervention.



9 a.m.-4:15 p.m.

AANS Exhibit Hall

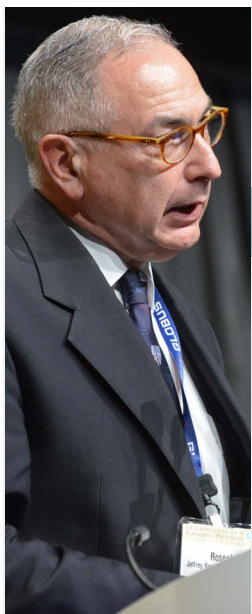
9-9:45 a.m.

Morning Beverage Break in the AANS Exhibit Hall

9:40-9:45 a.m.

Historical Vignette

Presented immediately prior to Plenary Sessions, these video vignettes examine the lives of prominent leaders in the field of neurosurgery. Written, recorded and edited by fellow neurosurgeons, these short videos are meant to expound the 2016 AANS Annual Scientific Meeting theme: *Neurosurgery Leading the Way*.



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

Plenary Session I

- **Hunt-Wilson Lecture**
Gen. Peter W. Chiarelli
- **Richard C. Schneider Lecture**
Alim L. Benabid, MD, PhD,
IFAANS
- **AANS Presidential Address**
H. Hunt Batjer, MD, FAANS

1-2 p.m.

Lunch in the AANS Exhibit Hall

1:10-2 p.m.

Neurosurgery "In Press": Latest Results of Clinical Trials in Neurosurgery and Allied Fields



New

Moderator: Frederick G. Barker II, MD, FAANS

Panelists: Aviva Abosch, MD, PhD, FAANS; Sepideh Amin-Hanjani, MD, FAANS; Daniel P. Cahill, MD, PhD, FAANS; Zoher Ghogawala, MD, FAANS; Uzma Samadani, MD, PhD, FAANS

As neurosurgeons practice increasingly as part of multidisciplinary teams, major clinical advances are sometimes reported first at meetings other than the AANS Annual Scientific Meeting. Vital information for daily neurosurgical practice might be reported at a general oncology meeting, a stroke meeting in Europe or an orthopedic spine meeting. Few neurosurgeons can attend every important allied meeting even within one narrow subspecialty, and none can keep abreast of all of the fields that make up modern neurosurgery. Yet these new advances can be central to neurosurgical practice.

In this session, section experts have combed the previous year's allied-specialty meetings across the globe for important advances every neurosurgeon should know – about brain metastases, interventional stroke treatments, spine techniques and more. Key findings are placed in context for both practicing neurosurgeons and residents in this lunchtime session, in collaboration with the Society for Neurological Surgeons.

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

- Review important advances relevant to neurosurgical clinical practice that were reported at major medical meetings (other than the AANS and CNS) during the last year.
- Apply these findings in the context of existing practice.
- Highlight ongoing trials in allied clinical fields – where neurosurgery is headed in the future.

1:10-1:55 p.m.

Lunch-and-learn Seminars

1:10-1:55 p.m.

Global Spinal Alignment I: Lateral, Anterior, Posterior



Non-CME Events

Anterior

Speaker: Regis W. Haid Jr., MD, FAANS

Lateral

Speaker: Juan Santiago Uribe, MD, FAANS

Posterior

Speaker: Christopher I. Shaffrey, MD, FAANS

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

Presented by NuVasive, Inc.

1:10-1:55 p.m.

Leveraging Imaging Technology to Advance Cranial and Spinal Neurosurgery



Non-CME Events

Neurovascular Imaging

Speaker: Raymond Dwight Turner IV, MD, FAANS

Presented by Siemens Healthcare.



1:10-1:55 p.m.

Now More Than Ever: Radiosurgery's Increasing Importance in the Neurosurgical Armamentarium



Non-CME Events

The continuing refinement of diagnostic imaging, effective systemic therapies resulting in longer survival and an increasing number of metastases, as well as growing appreciation for the low morbidity profile of radiosurgery when combined with microsurgery in the treatment of benign tumors, has resulted in its expanding inclusion as a vital technique in the neurosurgical armamentarium. This session presents a review of the current use of radiosurgery in complex neurological disorders and highlights ongoing research.

Presented by Elekta.

1:15-2:45 p.m.

Advanced Practice Providers Luncheon

Fee: \$25

Advances of Music Therapy for Patients with Brain Injuries

Speaker: Brian Harris, MA, MT-BC, NMT/F

Location: Hyatt Regency McCormick Place

Brian Harris, MA, MT-BC, NMT/F is a neurologic music therapy fellow and owner of MedRhythms, New England's first neurologic music therapy company. Brian's clinical work is focused at Spaulding Rehabilitation Hospital in Boston, where he created and implemented their first full-time neurologic music therapy program, specializing in traumatic brain injury, stroke, and neurologic disease. Brian has given numerous presentations throughout the country at venues including Berklee College of Music, Harvard University, Google and the American Congress of Rehabilitation Medicine. His work has also been featured in *Forbes*, *Mashable*, *The Boston Herald*, *Xconomy*, *MedTech Boston* and on *Chronicle Boston*.

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

- List at least two specific ways that musical stimulation is neurologically different from non-musical stimulation.
- Explain the therapeutic benefits of at least four neurologic music therapy interventions.
- Describe the role of neurologic music therapy in an interdisciplinary team.



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; Juan Carlos Fernandez-Miranda, MD; Paul A. Gardner, MD, FAANS

This 90-minute session will review the 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.

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.
- Outline general techniques for resection of complex lesions.
- Recognize operative nuances to advance patient safety.

2-5:30 p.m.

Scientific Sessions I-VII

Scientific Session I: Tumor

Ronald L. Bittner Lecture

Michael D. Taylor, MD, PhD

Scientific Session II: Spine

Sonntag Lecture

Charles L. Branch Jr., MD, FAANS

Scientific Session III: Stereotactic and Functional Surgery

Abstract Session

Scientific Session IV: Pediatrics

Donald D. Matson Lecture

Cesario Borlongan, PhD

End of Career Talk

Speaker: R. Michael Scott, MD, FAANS(L)

Cost-effectiveness of Baclofen Pump vs. Selective Dorsal Rhizotomy

Face-off: Philipp R. Aldana, MD, FAANS; Sandi K. Lam, MD, FAANS

Scientific Session V: Cerebrovascular

Yasargil Lecture

Steven L. Giannotta, MD, FAANS

Interpretation of BRAT results

Speakers: Cameron G. McDougall, MD, FAANS; Robert F. Spetzler, MD, FAANS

Scientific Session VI: Neurotrauma and Critical Care

Speaker: Robert C. Cantu, MD, FAANS(L)

Scientific Session VII: AANS/CSNS Socioeconomic

Speaker: Maya Babu, MD, MBA

3:30-4 p.m.

Afternoon Beverage Break in the AANS Exhibit Hall

5:30-6:30 p.m.

Joint Annual Business Meeting of the American Association of Neurological Surgeons and the American Association of Neurosurgeons

6:30-8:30 p.m.

Dinner Symposium: Cutting Edge Stereotactic Radiosurgery



New; Stereotactic and Functional Track; Tumor Track

Fee: \$195

Location: Sepia

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

Panelists: Mark H. Bilsky, MD, FAANS; Samuel Chao, MD; Steven N. Kalkanis, MD, FAANS; James M. Markert Jr., 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 brain metastases and spinal metastases. It will also cover the concepts of linear accelerator based plan quality, fractionation, delivery time and image guidance for SRS. Finally, the role of registries will be discussed as it relates to advancement of the field, maintenance of certification and practice improvement in SRS.

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

- Recognize the role of stereotactic radiosurgery in the management of brain metastasis patients.
- Point out the indications and outcomes associated with spinal radiosurgery for metastases.
- Outline the concepts of linear accelerator based plan quality, fractionation, delivery time and image guidance for SRS.



Sepia

Executive Chef Andrew Zimmerman has helped elevate Sepia to a nationally-recognized culinary mecca for innovative, American cuisine in the heart of the city's trendy West Loop neighborhood.

Zimmerman's menu showcases pristine, natural ingredients that are primarily organic and/or sustainable and draw upon his classic French training. Sepia is located in a former print shop from the 1890s, complete with custom tile, Art Nouveau floors and hand-crafted millwork and vintage stemware.

6:30-9:30 p.m.

AANS History Section Dinner at the University Club of Chicago



Richard Bales

Setti S. Rengachary, MD Memorial Lecture

Richard F. Bales is author of *The Great Chicago Fire and the Myth of Mrs. O'Leary's Cow*, where he investigates testimony from 50 eyewitnesses, historical records and other

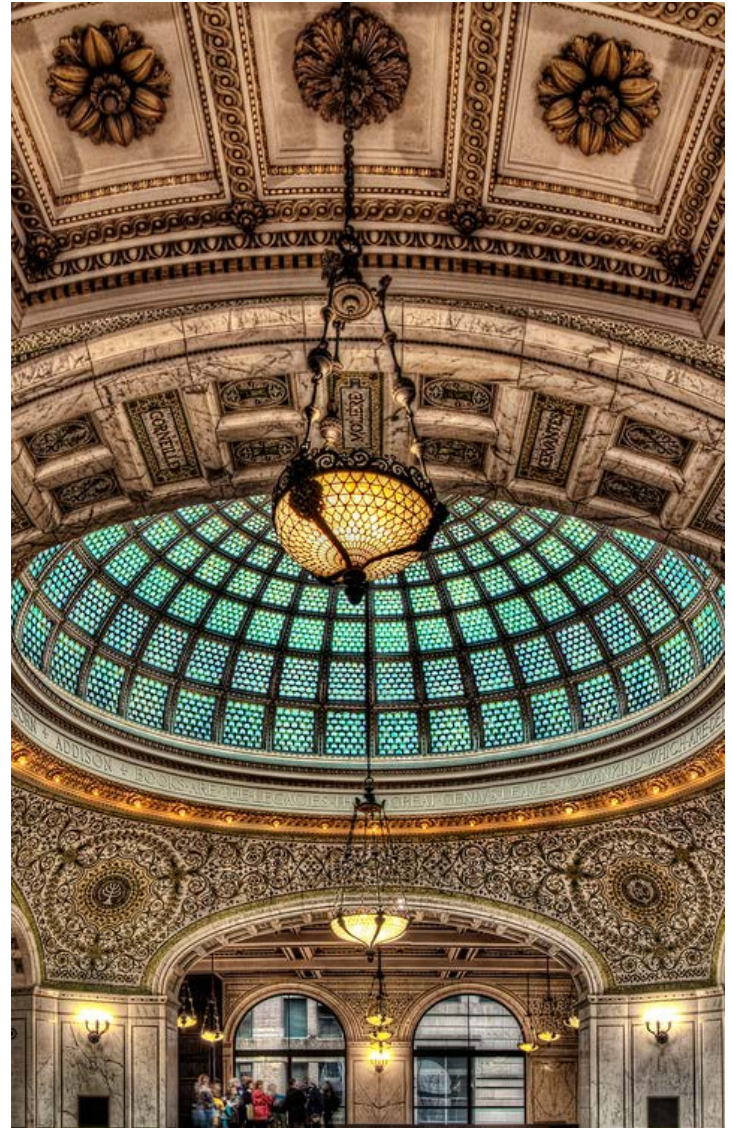
reports to uncover evidence of the true cause of the fire. Bales is currently working on two books and hopes to complete his second book, *The Other Literature of Nelson Algren*, by the end of 2015. He is also working on a biography of George Wellington "Cap" Streeter and the turbulent post-Chicago fire saga of Chicago's Streeterville neighborhood.

Richard F. Bales is the assistant regional counsel and assistant vice president of the Chicago Title Insurance Company. Bales graduated from Illinois College in 1973, received his doctorate of law from Northern Illinois University (NIU) in 1983 and has worked in the title insurance industry since 1977. In 2015 Bales was awarded the NIU College of Law Outstanding Alumni Award.



University Club of Chicago

Established in 1887 by university graduates who wanted a special place where they could enjoy intellectual pursuits, the University Club of Chicago was founded for the purpose of fostering an appreciation of literature and the arts. At the corner of Michigan Avenue and Monroe Street at the eastern gateway to the city, they established a permanent residence for their shared ideals. Through the generations, this magnificent 12-story structure has provided a stimulating atmosphere where members conduct business, gather socially and expand culturally.



8-9:30 p.m.

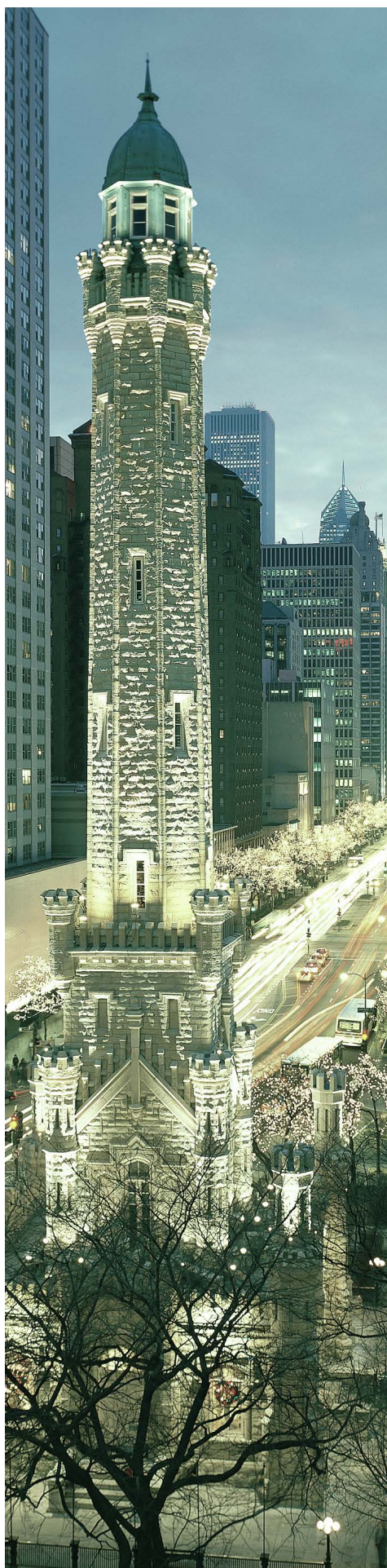
AANS International Reception at the Chicago Cultural Center

All Attendees/Guests Must Reserve a Ticket in Advance.

Fee: Complimentary for International Attendees
\$25 for U.S. or Canadian Attendees

Join leaders from the AANS, international neurosurgical organizations and special dignitaries during the 2016 AANS International Reception at the Chicago Cultural Center for an evening of conversation, refreshments and hors d'oeuvres.

Completed in 1897 as Chicago's first public library, Chicago Cultural Center is listed on the National Register of Historic Places and as a Chicago Landmark. The center's stunning architecture includes an ornate interior of marble, brass, mosaics and the world's largest stained glass Tiffany dome, fully restored in 2008.



Tuesday, May 3

6:30 a.m.-4 p.m.

7-9 a.m.

9 a.m.-4:15 p.m.

9-9:45 a.m.

9:40-9:45 a.m.

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

1-1:55 p.m.

1:10-2 p.m.

1:15-2:45 p.m.

2-3:30 p.m.

2-5:30 p.m.

2-5:30 p.m.

3:30-4 p.m.

6-8 p.m.

6:30-8:30 p.m.

AANS Registration

Breakfast Seminars (201-225)

AANS Exhibit Hall

Morning Beverage Break in the AANS Exhibit Hall

Historical Vignette

Plenary Session II

Theodore Kurze Lecture

Thomas J. Nasca, MD

Cushing Orator

Special Invited Speaker

Lunch in the AANS Exhibit Hall

Lunch-and-learns Seminars

Non-CME Events

Young Neurosurgeons Luncheon

**Operative Nuances II: Complication Avoidance
3D Video Presentation**

Section Sessions

AANS/CNS Cerebrovascular Section

AANS/CNS Section on Disorders of the Spine and
Peripheral Nerves – Peripheral Nerves Section Session

AANS/CNS Section on Neurotrauma and Critical Care

AANS/CNS Section on Stereotactic and Functional Surgery

AANS/CNS Section on Tumors I

AANS/CNS Section on Women in Neurosurgery (WINS)

Advancements in Neurotrauma Care

Afternoon Beverage Break in the AANS Exhibit Hall

Dinner Symposium:

The FDA: Investigational Device Exemptions, Regulatory
Process and Moving Medical Devices to Patients

Dinner Symposium:

Practical Management Topics in Spine and Cranial Trauma

Buy Two

Breakfast Seminars

get the **Third Free**

Offer Available until Monday, April 4, 2016

7-9 a.m.

Breakfast Seminars

\$100 each, \$65 each for Candidate and Medical Students.
Breakfast will be served in each room.

201 ABNS Board Preparation: What You Must Know



Socioeconomic Track

Moderator: Alan R. Cohen, MD, FAANS

Panelists: Jeffrey N. Bruce, MD, FAANS; Richard G. Ellenbogen, 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.
- Prepare for the ABNS oral examination.

202 Return-to-play After Sports Injury I: Concussion



Ethics Track; 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.
- Apply the data and expert opinion on return-to-play guidelines to their practice.



203 Spasticity Management



Pediatrics Track

Moderator: Michael David Partington, MD, FAANS

Panelists: Taryn McFadden Bragg, MD, FAANS; Patrick C. Graupman, MD, FAANS; Michael Healy, 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: After completing this educational activity, participants should be able to:

- Differentiate the diagnosis and evaluation of spasticity versus other forms of hypertonicity.
- Identify the surgical options for managing spasticity.
- Recognize the common association with musculoskeletal abnormalities and the need for coordinated, multidisciplinary assessment.

204 Surgical Treatment of Parkinson's Disease



Stereotactic and Functional Track

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

Panelists: Paul A. House, MD, FAANS; 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.
- Review complications of DBS for Parkinson's disease.

205 Shoulder vs. Spine: Differentiating Shoulder and Cervical Spine Pathology



Spine Track

Moderator: Brian R. Subach, MD, FAANS

Panelists: Nathaniel P. Brooks, MD, FAANS; Remberto Burgos, MD; James P. Burke, MD, PhD, FAANS; Anthony Romeo, MD; Michael Louis Smith, MD, FAANS; Timothy F. Witham, 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.
- Discuss diagnostic strategies to recognize and differentiate between the shoulder and spine.



206 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; Marcos Masini, MD; 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.
- Utilize techniques to avoid complications in cases of minimally invasive spine, fusions and deformity corrections.

207 Intramedullary Spinal Cord Tumors



Spine Track

Moderator: George I. Jallo, MD, FAANS

Panelists: Lawrence F. Borges, MD, FAANS; 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.
- Assess recent technical advances in the operative management of intramedullary spinal cord tumors.

208 Management of Vasospasm



Cerebrovascular Track

Moderator: Peter David Le Roux, MD, FAANS

Panelists: Rose Du, MD, PhD, FAANS; Aaron S. Dumont, MD, FAANS; Brian L. Hoh, MD, FAANS; R. Loch Macdonald, MD, PhD, FAANS; Leonidas Quintana, MD, IFAANS

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.
- Recognize experimental, clinical and laboratory assessments of treatments for vasospasm.

209 Advanced Lateral Transposas MIS Techniques: Expanding LLIF Indications



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 Breakfast Seminar elaborates on the advanced indications and applications of the lateral lumbar interbody fusion (LLIF) procedure and includes pearls and complication-avoidance techniques through case-based presentations.

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

- Describe the advanced indications for LLIF including pre-operative considerations that enable safe lateral access in the thoracic and lumbar spine.
- Discuss surgical technique when LLIF is employed in advanced corpectomy and deformity procedures.
- Explain how complications arise during advanced LLIF procedures, how to avoid them and how to manage them when they do occur.



210 Business of Neurosurgery II: Growth and Management of Neurosurgical Practices



Ethics Track; 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(L)

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.
- Analyze the process of decision-making and optimize our role in evaluating future changes, including liability reform, and how these changes should be implemented.



211 Neurosurgical Management of Intractable Pain



Pain Track

Moderator: Konstantin V. Slavin, MD, FAANS

Panelists: Dirk De Ridder, MD, PhD; Ahmed M. Raslan, MD; Claudio G. Yampolsky, MD, IFAANS

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.
- Describe outcomes of neuromodulation therapies for pain management.

212 Stem Cell Therapeutics in Neurosurgery



Ethics Track; Stereotactic and Functional Track

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

Panelists: John A. Boockvar, MD, FAANS; Nicholas M. Boulis, MD, FAANS; Bob S. Carter, MD, PhD, 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 rationale for CNS stem-cell therapy, and list various transplantation delivery mechanisms.
- Describe the design and results of early clinical trials.

213 Controversies in Cerebrovascular and Endovascular Neurosurgery



Cerebrovascular Track

Moderator: Erol Veznedaroglu, MD, FAANS

Panelists: Kevin M. Cockroft, MD, FAANS; Michael T. Lawton, MD, FAANS; Elad I. Levy, MD, FAANS; Edgardo Spagnuolo, MD

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.
- Use evidence-based medicine in conjunction with current practice to determine which patients will benefit most from endovascular therapies or traditional open surgeries.

214 Beginning Your Academic Career: Answers to Your Questions



Ethics Track; Socioeconomic Track

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; 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.
- Discuss career management in academia with experts.

215 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

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.
- Design the best treatment programs, based on current data.

216 Suprasellar and Juxtapellar Tumors: Complications and Avoidance



Tumor Track

Moderator: Harry R. van Loveren, MD, FAANS

Panelists: Pablo Marcelo Ajler, MD; Khaled M. A. Aziz, MD, PhD, FAANS; Amir R. Dehdashti, MD, IFANS; Griffith R. Harsh IV, MD, FAANS; 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.
- Describe the anatomy of the endoscopic transsphenoidal approach.

217 Management of Adult Scoliosis



Ethics Track; Spine Track

Moderator: Christopher I. Shaffrey, MD, FAANS

Panelists: Peter Douglas Angevine, MD, FAANS; Tyler Robert Koski, MD, FAANS; Frank La Marca, MD, FAANS; Juan Santiago Uribe, MD, FAANS

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.
- Identify patient-related factors that compromise surgical treatment outcomes and increase complications, and discuss treatment strategies.

218 New and Evolving Technologies for Minimally Invasive Lumbar Disc Surgery



Spine Track

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

Panelists: Dean Chou, MD, FAANS; 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.
- Describe current indications for use of new lumbar disc technologies.

219 Cerebral Trauma: State-of-the-art Treatment



Neurotrauma Track

Moderator: Alex B. Valadka, MD, FAANS

Panelists: Geoffrey T. Manley, MD, PhD, FAANS; Joshua Eric Medow, MD, FAANS; Jeffrey V. Rosenfeld, MD, IFAANS; Andres Mariano Rubiano, MD

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.
- Describe therapies that may become clinically available in the near future.

220 Tumor-related Epilepsy



Stereotactic and Functional Track; Tumor Track

Moderator: Mitchel S. Berger, MD, FAANS

Panelists: Edward F. Chang, MD; Hugues Duffau, MD; Jeffrey M. Politsky, MD, FRCP(C); Johannes Schramm, MD

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.
- Recognize the utility of pre-operative and post-operative anti-epileptic medication in controlling seizures.

221 Lumbar Spine Fusion Indications and Complications



Socioeconomic Track

Moderator: Joan Frances O'Shea, MD, FAANS

Panelists: Beejal Y. Amin, MD; Joseph S. Cheng, MD, FAANS; Andrew T. Dailey, MD, FAANS; Eric M. Massicotte, MD, FAANS; Tito Perilla Cepeda, MD

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.
- Distinguish between the surgical strategies for lumbar spine fusion and their relative indications, as well as their pros and cons.

222 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: Evandro Pinto da Luz de Oliveira, MD, PhD, IFAANS; Johnny B. Delashaw Jr., MD; 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.
- Demonstrate the key technical steps in performing each type of craniotomy safely and efficiently.



223 Management of Pediatric Epilepsy



Ethics Track; Pediatrics Track

Moderator: Jeffrey P. Blount, MD, FAANS

Panelists: Sanjiv Bhatia, MD, FAANS; Daniel J. Curry, MD, FAANS; Anthony Graham Fieggen, MD, IFAANS; Carlo Marras, MD

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

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

224 The Evolving Role of Molecular Classification in Treatment Planning for Childhood Brain Tumors



Pediatrics Track; Tumor Track

Moderator: Ian F. Pollack, MD, FAANS

Panelists: Liliana C. Goumnerova, MD, FAANS; Jeffrey Peter Greenfield, MD, PhD, FAANS; Phillip B. Storm, MD, FAANS; Michael D. Taylor, MD, PhD; Jeffrey H. Wisoff, MD, FAANS

The goal of this session is to review recent advances in the molecular classification of childhood brain tumors and to understand how these 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:

- Differentiate 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.
- Describe recent findings on the molecular classification of childhood high-grade gliomas, and how these may eventually influence treatment planning for these tumors.

225 Emerging Indications in Neuromodulation Surgery



Stereotactic and Functional Track

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

Panelists: Kelly Douglas Foote, MD, FAANS; Robert E. Gross, MD, PhD, FAANS; 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.
- Design strategies to manage these complications occurring during these surgeries.

9 a.m.-4:15 p.m.

AANS Exhibit Hall

9-9:45 a.m.

Morning Beverage Break in the AANS Exhibit Hall

9:40-9:45a.m.

Historical Vignette



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

Plenary Session II

- **Theodore Kurze Lecture**
Thomas J. Nasca, MD
- **Cushing Orator**
Special Invited Speaker

1-2 p.m.

Lunch in the AANS Exhibit Hall



1:10-1:55 p.m.

Lunch-and-learn Seminars

1:10-1:55 p.m.

Global Spinal Alignment II: Preoperative Planning and Intraoperative Assessment – The Methods to Achieve the Best Results



Non-CME Track

Importance of Preoperative Planning and Intraoperative Assessment

Regis W. Haid Jr., MD, FAANS

Methods of Preoperative Planning and Intraoperative Assessment

David O. Okonkwo, MD, PhD, FAANS

Potential Prevention of Proximal Junctional Kyphosis

Christopher I. Shaffrey, MD, FAANS

This session will detail the NuvaPlanning™ software solutions integrated across the iGA™ surgical workflow designed to predictably and reproducibly restore and preserve patient spinal alignment. NuvaPlanning allows a healthcare professional to preoperatively evaluate and plan, intraoperatively assess and correct and postoperatively confirm results for treating degenerative spinal disorders. Technical aspects and patient selection will be discussed.

Presented by NuVasive, Inc.

1:10-1:55 p.m.

Novel, Expandable TLIF Technology: A 3D Solution



Non-CME Track

Speaker: Sandeep M. Kunwar, MD, FAANS

Luna™ 3D is a new, expandable interbody designed for MIS, mini-open or open posterior approaches. Luna 3D's controlled, atraumatic insertion through a 6-8mm cannula is designed to minimize nerve retraction and mitigate implant migration. In-situ 3D expansion provides zero-impaction delivery, intended to preserve and protect vertebral endplates. Once in the disc space, Luna 3D expands to 25 mm in diameter and up to 13 mm in height. Bone graft is inserted into the Luna 3D cage after expansion, thereby optimizing this critical aspect of fusion surgery.

Presented by Benvenue Medical.

1:15-2:45 p.m.

Young Neurosurgeons Luncheon

Fee: \$10

- **Reflections on Resident Mentoring**
Speaker: Roberto C. Heros, MD, FAANS(L)

2-3:30 p.m.

Operative Nuances II: Complication Avoidance 3D Video Presentation

Moderators: Aaron A. Cohen-Gadol, MD, FAANS; Cormac O. Maher, MD, FAANS

Panelists: William T. Couldwell, MD, PhD, FAANS; Paul A. Gardner, 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.
- Recognize general techniques to handle complex vascular/neoplastic lesions.
- Outline operative nuances to avoid complications.

2-5:30 p.m.

Section Sessions

■ AANS/CNS Cerebrovascular Section

Speakers: Robert E. Harbaugh, MD, FAANS; David J. Langer, MD, FAANS

■ AANS/CNS Section on Disorders of the Spine and Peripheral Nerves - Peripheral Nerves Section Session

Kline Lecture

Robert J. Spinner, MD, FAANS

Speakers: Zarina S. Ali, MD; Allan J. Belzberg, MD, FAANS; Aaron G. Filler, MD, PhD, FAANS; Michel Kliot, MD, FAANS; Rajiv Midha, MD, MS, FAANS, FRCSC; Konstantin V. Slavin, MD, FAANS

■ AANS/CNS Section on Neurotrauma and Critical Care

J. Douglas Miller Lecture

Jamshid Ghajar, MD, PhD, FAANS

Charles Tator Lecture

Susan Harkema, PhD

■ AANS/CNS Section on Stereotactic and Functional Surgery

Speakers: Emad Eskandar, MD, PhD, FAANS; Edward Chang, MD, FAANS; Jamie Henderson, MD, FAANS; Dennis Spencer, MD, FAANS; Robert Gross, MD, PhD, FAANS

■ AANS/CNS Section on Tumors I

Speakers: Kenneth Aldape, MD; Donald Berry; Susan M. Chang, MD; Amy B. Heimberger, MD, FAANS; Steven N. Kalkanis, MD, FAANS; Roeland Verhaak, PhD; Gelareh M. Zadeh, MD

■ AANS/CNS Section on Women in Neurosurgery (WINS)

Speakers: Isabelle M. Germano, MD, FAANS; Nada Jain, PhD; Linda M. Liau, MD, PhD, FAANS; Edie E. Zusman, MD, FAANS

2-5:30 p.m.

Advancements in Neurotrauma Care



Neurotrauma Track

Fee: \$100

Moderator: Twyila Lay, NP, MS

Panelists: Gregory W.J. Hawryluk, MD, FAANS; Michael C. Huang, MD, FAANS; Joshua Eric Medow, MD, MS, FAANS; Clemens M. Schirmer, MD, PhD, FAANS; Martina Stippler, MD, FAANS; Joseph Christopher Zacko, MD, FAANS

This course focuses on specific decision-making challenges that the neurotrauma clinician faces in caring for the traumatically injured patient. The case-based instruction explores the pathophysiologic changes and the significance of goal-directed therapy. The course allows 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:

- Identify the unique challenges associated with caring for the neurotrauma patient in critical care.
- Describe the contemporary diagnosis and management of a broad spectrum of medical issues as they pertain to neurotrauma patient.
- Identify the complexity and controversies of surgical management of traumatically injured patients.

3:30-4 p.m.

Afternoon Beverage Break in the AANS Exhibit Hall



6-8 p.m.

Dinner Symposium: The FDA: Investigational Device Exemptions, Regulatory Process and Moving Medical Devices to Patients



New; Socioeconomic Track

Fee: \$195

Moderators: Aviva Abosch, MD, PhD, FAANS; Robert F. Heary, MD, FAANS; Carlos Pena, PhD, MS

This dinner symposium focuses on navigating the FDA regulatory landscape for medical devices. Faculty is derived from the agency as well as physicians/investigators familiar with the review process. Lectures are followed by a panel discussion.

Learning Objectives:

- Describe the current state of medical device regulation.
- Explain the steps needed to study a device in a clinical trial and the process of submitting a physician/investigator-sponsored Investigational Device Exemption (IDE).
- Identify resources available for neurosurgeons, developers and innovators.



Harry Caray's Italian Steakhouse

Named "Best Steakhouse in Chicago" by the *Chicago Tribune* Dining Poll, Best of Citysearch Poll and Metromix on CLTV, Harry Caray's serves the finest prime, aged steaks, chops and Italian favorites. The sophisticated, high-energy restaurant pays tribute to the beloved Chicago Cubs sportscaster for whom the restaurant is named. The restaurant is housed in a treasured architectural landmark building, once home to Frank Nitti, the infamous "enforcer" in Al Capone's gang. Visitors can check out relics from the gangster era in Frank Nitti's Vault, including a once-hidden underground tunnel.

6:30-8:30 p.m.

Dinner Symposium: Practical Management Topics in Spine and Cranial Trauma



Neurotrauma Track; New

Fee: \$195

Moderators: Praveen V. Mummaneni, MD, FAANS; Shelly D. Timmons, MD, PhD, FAANS

Panelists: David O. Okonkwo, MD, PhD, FAANS; Michael Y. Wang, MD, FAANS; Joseph Christopher Zacko, MD, FAANS

This symposium features a comprehensive series of didactic lectures with internationally-recognized faculty illustrating the state-of-the-art management of cervical, thoracic and lumbar spinal trauma. This CME activity emphasizes treatment of traumatic disorders of the brain and spine. The salient aspects of surgical anatomy, surgical approach, treatment options and efficacy will be included.

Learning Objectives: Upon completion of this activity, participants should be able to:

- Identify the fundamentals of the surgical decision-making process involving traumatic disorders of the cervical, thoracic and lumbar spine.
- Review anatomy of anterior and posterior surgical approaches to the cervical, thoracic and lumbosacral spine.
- Discuss the indications, results and potential complications for various instrumentation techniques.
- Outline indications, techniques and potential complications of craniofacial fracture repair.
- Discuss practical application and obstacles of neuromonitoring techniques for severe traumatic brain injury patients in the neurocritical care unit.



River Roast

Located on the Chicago River, River Roast offers dramatic city and water views from every seat, inside and out. James Beard award-winning Chef Tony Mantuano and Executive Chef John Hogan's menu of contemporary American tavern fare is satisfying and soul-warming.



Wednesday, May 4

6:30 a.m.-3:30 p.m.

7-9 a.m.

7-8:30 a.m.

9 a.m.-2:15 p.m.

9-9:45 a.m.

9:40-9:45 a.m.

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

1-2 p.m.

2-5 p.m.

AANS Registration

Breakfast Seminars

AANS/CNS Section on Women in Neurosurgery (WINS) Breakfast

AANS Exhibit Hall

Morning Beverage Break in the AANS Exhibit Hall

Historical Vignette

Plenary Session III

Louise Eisenhardt Lecture

Petra Kaufmann, MD, MSc

Rhoton Family Lecture

José Francisco Salgado, PhD

Van Wagenen Lecture

Geoffrey Ling, MD, PhD, Col. (Ret.)

Lunch in the AANS Exhibit Hall

Section Sessions

AANS/CNS Section on Disorders of the Spine and Peripheral Nerves — Spine Section Session

AANS/CNS Section on Pain

AANS/CNS Section on Pediatric Neurological Surgery

AANS/CNS Section on Tumors II

AANS Section on History of Neurological Surgery

7-9 a.m.

Breakfast Seminars

\$100 each, \$65 each for Candidate and Medical Students.
Breakfast will be served in each room.

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



Ethics Track; Socioeconomic Track

Moderator: Edie E. Zusman, MD, FAANS

Panelists: Domagoj Coric, MD, FAANS; Robert M. Friedlander, MD, FAANS; Dong H. Kim, MD, FAANS; Karin R. Swartz, MD, FAANS

Faculty discuss how health systems evaluate neurosurgical practices for purchase or alignment; the role of private and group practices in the hub-and-spoke model of health care delivery; how to align with accountable care organizations without becoming an employee; and managing the impact of publicly-available practice data and outcomes information. By predicting the future of health care, neurosurgeons should be able to position themselves strategically to lead the way using decision-driven change management.

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

- Describe the financial models available for working with hospitals and health systems.
- Evaluate the neurosurgeon's financial strategy in ACO models.
- Support the reputation of neurosurgeons in the current culture of public data transparency.
- Identify practice opportunities to improve physician satisfaction and sustainability.

302 Surgical Approaches to the Lateral Skull Base



Cerebrovascular Track

Moderator: Jeffrey J. Olson, MD, FAANS

Panelists: Luis Alencar Borba, MD; 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 focuses on clinical indications, technical aspects, complication avoidance, management and reconstructive techniques for tumors and vascular lesions involving or approached via the lateral skull base. The emphasis is 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, is also addressed.

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

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



303 Intraoperative Neurophysiology in Spinal Cord Tumor Surgery



Spine Track; Tumor Track

Moderator: Francesco Sala, MD

Panelists: Vedran Deletis, MD, PhD; Mark N. Hadley, MD, FAANS; Karl F. Kothbauer, MD; Khoi Duc Than, 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: After completing this educational activity, participants should be able to:

- Identify 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.
- Discuss the evidence for the use of neuromonitoring and its implication in terms of neurological outcome.

304 Challenging Spinal Cases: Pearls and Pitfalls



Spine Track

Moderator: Edward C. Benzel, MD, FAANS

Panelists: Deb A. Bhowmick, MD; Basilio Fernandez, MD, FAANS; Wayne M. Gluf, MD, FAANS; 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.
- Explain the nuances of the clinical decision-making process.

305 Developing New Technology: Bringing a Device to Market



Socioeconomic Track

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.
- Discuss the regulatory issues and the steps necessary to develop prototypes.

306 Cervical Spondylotic Myelopathy



Spine Track

Moderator: Iain H. Kalfas, MD, FAANS

Panelists: Marcos Baabor Aqueveque, MD; Michael G. Kaiser, MD, FAANS; Praveen V. Mummaneni, 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.
- Distinguish the operative treatment options for cervical spondylotic myelopathy, and review those operative success/failure rates.

307 Spondylolisthesis: Controversies in Management



Spine Track

Moderator: Philip R. Weinstein, MD, FAANS(L)

Panelists: John Matthew Caridi, MD, FAANS; 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.
- Describe complications and causes of treatment failure for degenerative spondylolisthesis.

308 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, FAANS; Christopher Daniel Roark, MD, FAANS; 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.
- Discuss the most commonly used DVT prophylaxis measures.

309 Return-to-play After Sports Injury II: Spine Injury



Ethics Track; Spine Track

Moderator: Michael W. Groff, MD, FAANS

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

The identification and management of sports-related injuries has received much recent attention in the press and in 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.
- Apply the data and expert opinion on return-to-play guidelines to their practice.

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



Cerebrovascular Track

Moderator: Anil Nanda, MD, MPH, FAANS

Panelists: Hildo R. C. Azevedo-Filho, MD, IFAANS; Oliver Bozinov, MD, IFAANS; Peter Nakaji, MD, FAANS; José Marcus Rotta, MD

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.
- Manage complications once they have occurred.

311 Contemporary Stereotactic Radiosurgery



Stereotactic and Functional Track

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

Panelists: Isabelle M. Germano, MD, FAANS; Mario Izurieta-Ulloa, MD; Arjun Sahgal, MD; Michael Schulder, MD, FAANS; John H. Shin, MD; Isaac Yang, MD, FAANS

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.
- Explain differences among the various radiosurgery techniques available.

312 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.
- Formulate strategies to avoid and manage spine-surgery complications, and apply these principles to one's practice.

313 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.
- Recognize how surgical approaches are made, based on these evaluations.

314 Open vs. Endoscopic Approaches to the Anterior Skull Base



Neurotrauma Track; Tumor 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; 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.
- List pathologies that would indicate use of an anterior skull base approach.

315 Basics of Programming Neurosurgical Devices



New; Pain Track; Peripheral Nerve Track

Moderator: Julie G. Pilitsis, MD, PhD, FAANS

Panelists: Lindsey Jolley, PA-C; Sean Jeremy Nagel, MD, FAANS; Jennifer A. Sweet, MD; Meghan Wilock, PA

This breakfast is geared for residents, nurses, advanced practice providers and attending physicians with an interest in learning the basics of interrogating shunts, determining end of life and programming devices common in neurosurgery. At the conclusion of the breakfast, the participant should feel comfortable determining device type on imaging and being asked to turn on/off and check the device. If advanced programmers attend, one-on-one instruction will be available.

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

- Describe different types of shunts and how to interrogate.
- Determine need for replacement of functional neurosurgical devices (DBS, SCS, VNS).
- Explain the basics of programming in functional neurosurgery.

316 Peripheral Nerve Entrapment Syndromes



Peripheral Nerve Track; Spine Track

Moderator: Eric L. Zager, MD, FAANS

Panelists: Allan J. Belzberg, MD, FAANS; Line Jacques, 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.
- Describe the options and management for recurrent nerve entrapments.

317 Osteoporosis and Spinal Fusion Surgery



Spine Track

Moderator: Deborah L. Benzil, MD, FAANS

Panelists: Marc E. Eichler, MD, FAANS; John Joseph Knightly, 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.
- 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.

318 Adult Low-grade Gliomas



Ethics Track; Tumor Track

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

Panelists: Daniel P. Cahill, MD, PhD, FAANS; Susan M. Chang, MD; George Samandouras, MD, FRCS; David Schiff, MD; Manfred Westphal, PhD, MD, IFAANS

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 pertinent molecular markers for diagnosis and prognosis.
- Distinguish between different management strategies for low-grade gliomas.
- Discuss surgical approaches, pre-operative imaging and intra-operative tools for resection of low-grade gliomas.



319 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; Francisco Gonzalez-Llanos, MD; Louis J. Kim, MD, FAANS; Gerardo Legaspi, MD; Robert H. Rosenwasser, MD, FAANS

Participants listen to and engage in active discussions with cerebrovascular experts regarding the nuances of complication avoidance and management for aneurysms, AVMs and cavernous malformations. Both microsurgical and endovascular strategies are addressed. Gain invaluable insights on how to elude trouble in the operating room and angiography suites from a distinguished panel of experts. Didactic information includes every step of the clinical process: judicious case selection and preparation, careful application of the right tools, intraoperative technical pearls and postoperative management.

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

- Describe how to properly evaluate and perform workup for complex cerebrovascular problems and formulate a treatment strategy.
- Recall the angioarchitectural features that distinguish a straightforward aneurysm, AVM or cavernous malformation case from a higher-risk case.
- Discover technical pearls that can avert certain disasters in the operating room or angiography suite.

320 Fluorescence Technologies in Tumor Neurosurgery: Present and Future Directions



Tumor Track

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

Panelists: Miguel A. Arraez Sanchez, MD; Khaled M. A. Aziz, MD, PhD, FAANS; Costas G. Hadjipanayis, MD, PhD, 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.
- Evaluate the current research aimed at advancing this field.



321 Neurosurgery at the Periphery: The History of Peripheral Nerve Surgery



**History Track; New;
Peripheral Nerve Track**

Moderator: Chris A. Sloffer, MD, MBA, FAANS

Panelists: Larry Van Carson, MD, MBA, FAANS; Charles J. Prestigiacomo, MD, FAANS

The history of peripheral nerve surgery provides a unique perspective on the development of subspecialties within neurosurgery and features a blend of interesting individuals, unique observations and the influence of war. The history of the field can be divided into the pre-nineteenth century, where there was limited knowledge about peripheral nerve physiology; the nineteenth century period of discovery; and the twentieth century of multidisciplinary development, which was influenced by war. This session will provide the attendee an overview of the colorful history of peripheral nerve surgery while also analyzing several interesting personalities that have helped move the field forward.

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

- Discuss the key elements to the understanding of peripheral nerve physiology and its foundations, which enabled pioneers to begin the growth of the field.
- Describe the contributions of Foerster and Cushing in the multidisciplinary development of modern peripheral nerve surgery.
- Trace wartime contributions to the growth of peripheral nerve surgery.

322 Advanced Estate Planning and Tax Saving Strategies for the Neurosurgeon



Non-CME Event; Socioeconomic Track

Moderator: Robert Levin, MD, CFP

Panelists: Matthew Vandenack; Bruce Wojack

This non-CME event is 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 13 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 are 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.
- Recall advanced estate planning techniques.
- Maximize the financial benefit of retirement plans, IRAs, etc.
- Incorporate philanthropy into your estate plan.
- Reduce income, gift and estate tax.

7-8:30 p.m.

AANS/CNS Section on Women in Neurosurgery (WINS) Breakfast

Fee: \$100

Location: Sheraton Chicago Hotel & Towers

Louise Eiesenhardt Lecturer

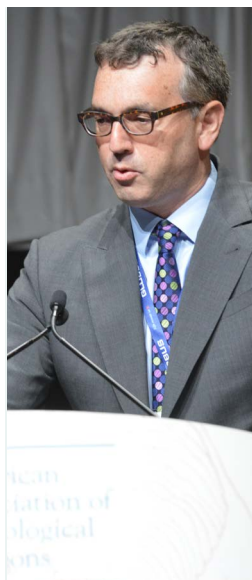
Petra Kaufmann, MD, MSc



9 a.m.-2:15 p.m.
AANS Exhibit Hall

9-9:45 a.m.
Morning Beverage Break in the AANS Exhibit Hall

9:40-9:45 a.m.
Historical Vignette



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

Plenary Session III

- **Louise Eisenhardt Lecture**
Petra Kaufmann, MD, MSc
- **Rhoton Family Lecture**
José Francisco Salgado, PhD
- **Van Wagenen Lecture**
Geoffrey Ling, MD, PhD, Col. (Ret.)

1-2 p.m.

Lunch in the AANS Exhibit Hall

2-5 p.m.

Section Sessions

- **AANS/CNS Section on Disorders of the Spine and Peripheral Nerves — Spine Section Session**
Speakers: Adam S. Kanter, MD, FAANS; John Joseph Knightly, MD, FAANS; Frank La Marca, MD, FAANS; Daniel K. Resnick, MD, FAANS; Michael Y. Wang, MD, FAANS
- **AANS/CNS Section on Pain**
Speakers: A. Vania Apkarian, PhD; Steven M. Falowski, MD; Robert M. Levy, MD, PhD, FAANS; Jennifer A. Sweet, MD
- **AANS/CNS Section on Pediatric Neurological Surgery**
Speakers: Sanjiv Bhatia, MD, FAANS; Daniel J. Curry, MD, FAANS; Nalin Gupta, MD, PhD, FAANS; Andrew H. Jea, MD, FAANS; Scott L. Pomeroy, MD, PhD; Michael Prados, MD; Gerald F. Tuite, Jr., MD, FAANS
- **AANS/CNS Section on Tumors II**
Speakers: Manish K. Aghi, MD, PhD, FAANS; Gene H. Barnett, MD, MBA, FAANS; Costas G. Hadjipanayis, MD, PhD, FAANS; Jason P. Sheehan, MD, PhD, FAANS; Michael A. Vogelbaum, MD, PhD, FAANS; Colin Watts, FRCS, PhD; Gelareh M. Zadeh, MD
- **AANS Section on History of Neurological Surgery History Lectureship**
The Origin and Early Organization of Neurosurgery in Chicago
Walter Whisler, MD, PhD, FAANS(L)



Section Activities



AANS/CNS Cerebrovascular Section

Monday, May 2

2–5:30 p.m.

Scientific Session V: Cerebrovascular

Tuesday, May 3

2–5:30 p.m.

Section Session

5:30–6 p.m.

Business Meeting

AANS/CNS Section on Disorders of the Spine and Peripheral Nerves

Monday, May 2

2–5:30 p.m.

Scientific Session II: Spine

Tuesday, May 3

2–5:30 p.m.

Peripheral Nerves Section Session

Wednesday, May 4

2–5 p.m.

Spine Section Session

AANS/CNS Section on Neurotrauma and Critical Care

Monday, May 2

2–5:30 p.m.

Scientific Session VI: Neurotrauma and Critical Care

Tuesday, May 3

2–5:30 p.m.

Section Session

AANS/CNS Section on Pain

Wednesday, May 4

2–5 p.m.

Section Session

AANS/CNS Section on Pediatric Neurological Surgery

Monday, May 2

2–5:30 p.m.

Scientific Session IV: Pediatrics

Wednesday, May 4

2–5 p.m.

Section Session

AANS/CNS Section on Stereotactic and Functional Surgery

Monday, May 2

2–5:30 p.m.

Scientific Session III: Stereotactic and Functional Surgery

Tuesday, May 3

2–5:30 p.m.

Section Session

Section Activities [continued]



AANS/CNS Section on Tumors

Monday, May 2

2–5:30 p.m.

Scientific Session I: Tumor

Tuesday, May 3

2–5:30 p.m.

Section Session: Tumor I

Wednesday, May 4

2–5 p.m.

Section Session: Tumor II

AANS/CNS Section on Women in Neurosurgery

Tuesday, May 3

2–5:30 p.m.

Section Session

Wednesday, May 4

7–8:30 a.m.

Breakfast

Sheraton Chicago Hotel & Towers

(See [page 77](#))

AANS Section on the History of Neurological Surgery

Monday, May 2

6:30–9:30 p.m.

AANS History Section Dinner

University Club of Chicago

(See [page 57](#))

Wednesday, May 4

2–5 p.m.

Section Session

AANS/CSNS Socioeconomic

Monday, May 2

2–5:30 p.m.

Scientific Session VII: Socioeconomic

Related Organizations



Council of State Neurosurgical Societies [CSNS]

April 28–29, 2016

Location: Sheraton Chicago Hotel & Towers

Registration information at https://csnsonline.org/meeting_registration.php



Neurosurgery Executives' Resource Value & Education Society [NERVES]

April 28–30, 2016

Location: Fairmont Chicago Millennium Park

Registration information at http://www.nervesadmin.com/portal_boxes/annual-meeting-2/



AANS ELEVENTH ANNUAL NEUROSURGICAL TOP GUN Competition 2016

May 2-4, 2016 | AANS Exhibit Hall

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 84th 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.

Marshal Volunteer Program

In 2016, 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 Meeting App.

The AANS Annual Scientific Meeting Marshals Subcommittee has long depended on volunteers to ensure the quality and success of the Practical Clinics, Breakfast Seminars and Joint Annual Business Meeting of the AANS and the American Association of Neurosurgeons.



As a volunteer, you can:

- Attend Practical Clinics or Breakfast Seminars, free of charge.
- Meet senior members of the organization while serving in a leadership capacity within the AANS.

Volunteers may be asked to:

- Answer questions related to the AANS Meeting App.
- Marshal the practical clinic or breakfast seminar you attend (instructions will be provided).
- Assist in session operation during practical clinics or breakfast seminars as directed.
- Assist with the Joint Annual Business Meeting of the American Association of Neurological Surgeons and the American Association of Neurosurgeons

For those interested in volunteering to serve as a marshal, please contact the AANS Department of Education and Meetings at 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 2016, you will receive a form to complete and submit, indicating your session preferences.

Candidate (Resident/Fellow) and Medical Student Activities [continued]

Sunday, May 1

1-4:30 p.m.

Young Neurosurgeons Research Forum

Osler Lecture

Duke S. Samson, MD, FAANS

(see [page 7](#))

Tuesday, May 3

1:15-2:45 p.m.

Young Neurosurgeons Luncheon

Fee: \$10

Speaker: Roberto C. Heros, MD, FAANS(L)

Sessions for Candidates and Medical Students

Seventeen Practical Clinics and all Breakfast Seminars are being offered at a discounted rate to residents, fellows and medical students.

Limited number of seats are available based on a first-come, first-served basis.

- 001 Introduction to Cerebrovascular Neurosurgery for Residents ([page 19](#))
- 006 Update on Tumors for the General Neurosurgeon I: Adult Gliomas and Metastases ([page 23](#))
- 008 Goodman Oral Board Review ([page 24](#))
- 009 **Rhoton Lecture Series:** 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base ([page 25](#))
- 012 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches ([page 26](#))
- 014 Neurotrauma and Neurocritical Care for the Practicing Neurosurgeon: MOC Review and Update ([page 27](#))
- 015 Practical and Technical Aspects of Transsphenoidal Surgery ([page 28](#))
- 016 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation ([page 28](#))
- 019 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example ([page 35](#))
- 020 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents ([page 35](#))
- 022 Nuts and Bolts of Posterior Fossa Surgery: How I Do It ([page 36](#))

- 023 Microsurgical Management of Intracranial Aneurysms: Site-specific Surgical Anatomy, Operation Intervention and Complication Management ([page 37](#))
- 027 Update on Spinal Radiosurgery ([page 39](#))
- 028 Brain Mapping and Awake Mapping Techniques ([page 39](#))
- 029 **Rhoton Lecture Series:** 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base ([page 40](#))
- 030 How to Tackle Difficult Cranial Cases: A Step-by-step 3D Case-based Presentation ([page 40](#))
- 033 Neurosurgical Care of Athletes - Concussion, Spine, Peripheral Nerve and Return to Play ([page 42](#))
Young Neurosurgeons Luncheon ([page 67](#))
Young Neurosurgeons Research Forum ([page 42](#))



Advanced Practice Providers

Sunday, May 1

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

Advanced Practice Providers Plenary Session
(see [page 34](#))

Monday, May 2

7-9 a.m.

Breakfast Seminar

121 Becoming an Exceptional Advanced Practice Provider in Neurosurgery - Pearls from Your Peers

Fee: \$100
(see [page 51](#))

1:15-2:45 p.m.

Advanced Practice Providers Luncheon

Fee: \$25
Advances of Music Therapy for Patients with Brain Injuries.

Speaker: Brian Harris, MA, MT-BC, NMT/F
(see [page 54](#))

Tuesday, May 3

2-5:30 p.m.

Advancements in Neurotrauma Care

Fee: \$100
(see [page 68](#))

Wednesday, May 3rd

7-9 a.m.

Breakfast Seminar

315 Basics of Programming Neurosurgical Devices

Fee: \$100
(see [page 75](#))

Sessions for Advanced Practice Providers

Ten Practical Clinics are being offered at a 30-percent discount.

- 003 You Are Never Too Old for Surgery: Spine Management in an Aging Population ([page 20](#))
- 010 Alternatives to Transpedicular Approaches to Achieving Arthrodesis ([page 25](#))
- 012 Cranio-cervical and C1C2 Stabilization Techniques, Surgical Approaches ([page 26](#))
- 013 Update on Tumors for the General Neurosurgeon II: Skull Base, Pediatric and Spine Tumors ([page 27](#))
- 014 Neurotrauma and Neurocritical Care for the Practicing Neurosurgeon: MOC Review and Update ([page 27](#))
- 016 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation ([page 28](#))
- 017 Current Treatments and Controversies in Traumatic Brain Injury ([page 31](#))
- 019 CPT Coding Update with ICD-10 for Neurosurgeons: Coding Concepts by Case Example ([page 35](#))
- 020 Basics of Spinal Stabilization - Advanced Practice Providers/Medical Students/Residents ([page 35](#))
- 026 Update on the Management of Spine and Spinal Cord Injury ([page 38](#))
- 032 Thoraco-Lumbo-Sacral Alignment: Indications, Techniques, and Case Discussions ([page 41](#))





Exhibits

This year, more than 200 companies will showcase their products and services at the 84th 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 2	9 a.m.-4:15 p.m.
Tuesday, May 3	9 a.m.-4:15 p.m.
Wednesday, May 4	9 a.m.-2:15 p.m.

Lunch in the AANS Exhibit Hall

The AANS offers a lunch on 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 visit the exhibit hall to have lunch and interact with your colleagues and exhibitors.



Continuing Medical Education (CME) [continued]

The main goals of the AANS Annual Scientific Meeting are to serve as a primary source of continuing medical education tailored specifically to the specialty, to advance neuroscience research 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 84th 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 45.5 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

*A maximum of 33.25 *AMA PRA Category 1 Credits™* can be claimed for general sessions.

CME Credit for Practical Clinics

Attendees will receive a maximum of 4 *AMA PRA Category 1 Credits™* for all eligible half-day clinics and 8 *AMA PRA Category 1 Credits™* for all eligible full-day clinics. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CME Credit for Breakfast Seminars

Attendees will receive a maximum of 2 *AMA PRA Category 1 Credits™* for each eligible breakfast seminar they attend. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CME Credit for Dinner Symposia

Attendees will receive a maximum of 2 *AMA PRA Category 1 Credits™* for all eligible dinner symposia. Physicians should only claim credit commensurate with the extent of their participation in the activity.



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 page 83 are designed with the advanced practice provider in mind.

Nurse practitioners and physician assistants must self-report their credit on MyAANS.org after completion of the meeting. Physician assistants may print 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 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.

Disclaimer

The material presented at the 84th 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 84th 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 84th 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, and the next cycle is Jan. 1, 2017, through Dec. 31, 2019. 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, April 29	5-7 p.m.
Saturday, April 30	6:30 a.m.-5:30 p.m.
Sunday, May 1	6:30 a.m.-6:30 p.m.
Monday, May 2	6:30 a.m.-4 p.m.
Tuesday, May 3	6:30 a.m.-4 p.m.
Wednesday, May 4	6:30 a.m.-3:30 p.m.

Attire

Attire for the 84th 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, McCormick Place West or any of the official AANS hotels.

Climate/Time Zone

Chicago is located in the Central Time Zone. The city's climate is unpredictably changeable, particularly in late April and early May; the weather may be warm and sunny, cool and rainy or some combination therein. In early May, the average high generally hovers around 65 degrees F, with a low of 46 degrees. The average rainfall is 3.7 inches in May. Despite the averages, 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 two days before your flight for the latest on the weather and temperature and using this information to pack appropriately.

Meeting Location

McCormick Place West

2301 S. Martin Luther King Jr. Drive
Chicago, IL 60616
312.791.7000

Headquarters Hotel

Sheraton Chicago Hotel & Towers

301 E. North Water Street
Chicago, IL 60611
312.464.1000

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.

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 82 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/International_Activities/Developing%20Country%20Status%20Membership%20FY2016.pdf and click on the Developing Countries category for a complete list.

Registration

Ways to Register

Complete the 84th AANS Annual Scientific Meeting Online Advance Registration at www.aans.org/AANS2016, using a major credit card for payment. This is the most immediate and secure method of registration.

Or, download and print the Advance Registration Form from www.aans.org/AANS2016, and send by one of the following methods:

- Fax: 708.344.4444
- Email: aansannual@compusystems.com
- Mail with check or credit card information to:
AANS Registrations Department
c/o CompuSystems
2651 Warrenville Rd, Suite 400
Downers Grove, IL 60515

For wire transfers or questions regarding the 84th AANS Annual Scientific Meeting, call 708.450.5882.

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
2651 Warrenville Rd, Suite 400
Downers Grove, IL 60515

Fax: 708.344.4444

Email: aansannual@compusystems.com

All refunds will be processed and mailed following the 84th AANS Annual Scientific Meeting. Refunds will be made in accordance with the following schedule:

- Cancellation received on or before April 4, 2016, will receive a full refund less a \$50 processing fee.
- Cancellations received between April 5, 2016, and April 23, 2016, will receive a full refund less a \$100 processing fee.
- No refunds will be granted if received on or after April 24, 2016.



Registration Fees

Members of the Federación Latinoamericana de Sociedades de Neurocirugía (FLANC) will be registered at discounted AANS member rates, thanks to a collaboration with the AANS for the 84th AANS Annual Scientific Meeting.

	On or before April 4, 2016	After April 4, 2016
AANS Neurosurgeon Member (901)	\$799	\$899
AANS Neurosurgeon Retired or Lifetime Member (927)	\$495	\$595
Non-Member Neurosurgeon (902)	\$999	\$1099
Non-Member Physician – Other (903)	\$999	\$1099
Non-Member/Non-Physician (904)	\$999	\$1099
Military AANS Neurosurgeon Member ⁷ (974)	\$0	\$0
Non-member U.S. Armed Forces Neurosurgeon (905)	\$570	\$670
Resident/Candidate Member (906)	\$200	\$200
Resident/Candidate Non-Member ¹ (908)	\$440	\$540
International Resident/Candidate Member (907)	\$250	\$350
International Resident/Candidate Non-Member ¹ (909)	\$440	\$540
Developing Countries ⁶ (973)	\$100	\$100
Medical Student Member (929)	\$0	\$0
Medical Student Non-Member ³ (971)	\$100	\$100
Physician Assistant Member (911)	\$455	\$555
Physician Assistant Non-Member ⁵ (912)	\$555	\$655
Nurse Member (913)	\$455	\$555
Nurse Non-Member ⁵ (914)	\$555	\$655
Commercial Press ⁴ (915)	\$475	\$525
Spouse ² (950)	\$250	\$250
Guest ² (951)	\$250	\$250



- ¹ Letter of recommendation from Program Director required. Details will be provided in registration form.
- ² Spouse/Guests cannot earn CME credits or attend any Practical Clinics or Breakfast Seminars.
- ³ Every medical student must include a photocopy of his/her current medical student ID card.
- ⁴ 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 2016 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.
- ⁵ Physician assistants and nurses must provide a copy of his/her medical credentials.
- ⁶ Every individual applying for the Developing Countries registration rate must provide a photocopy of his/her passport.
- ⁷ AANS Military Members also receive complimentary housing at one of the official AANS hotels. Please contact the AANS Meetings Department at 847.378.0500 to reserve your complimentary housing after registering for the annual meeting.

AANS Online Meeting Recordings

AANS Annual Scientific Meeting registration includes free online access to the full compilation of recorded meeting content. Recorded sessions will be made available to medical attendees once they are edited and uploaded, following the conclusion of the 2016 AANS Annual Scientific Meeting.

Audio/Video Capture at the 2016 AANS Annual Scientific Meeting

AANS plans to capture video, live stream video and/or take photographs at the 2016 AANS Annual Scientific Meeting. By registering/attending the meeting, you grant the AANS the right to use image, video and biography in print, electronic or other media. All postings become the property of the AANS and may be displayed, distributed or used by the AANS for any purpose. Attendees are prohibited from live streaming, photography and video capture without the consent of the AANS. The AANS is not responsible for unauthorized media capture performed by meeting attendees.

Your NPI at the 2016 AANS Annual Scientific Meeting

As part of the health care reform legislation signed into law in March 2010, the Physician Payment Sunshine Act requires medical device, biologic and drug companies to publicly disclose gifts and payments made to physicians, beginning in 2013. For U.S. health care providers, companies must also report any payment or other transfer of items with a minimum value of \$10/payment or \$100/year to the Department of Health & Human Services (HHS). The National Provider Identifier (NPI) number, a unique identification number assigned to each U.S. health care provider, will be used to record and track these transactions.

To facilitate a quick and accurate record of any transactions during the 2016 AANS Annual Scientific Meeting that may need to be tracked and recorded under the law, the AANS is requesting that U.S. health care providers supply their NPI number as part of their registration for the meeting. This information will not be printed on your badge, but will be included in your barcode-encoded data so that exhibitors can record and track any reportable transactions.

U.S. health care providers should understand that, although supplying your NPI number as part of your AANS Annual Scientific Meeting registration is voluntary, the reporting of transactions with companies under the Sunshine Act is mandatory. Your NPI number is public; you may search the NPI Registry.

Housing **ONPEAK**

The American Association of Neurological Surgeons (AANS) Housing Bureau, onPeak, will process hotel reservations based on choice and availability. All reservation requests should be made through the AANS Housing Bureau, onPeak.

Rooms will be assigned on a first-come, first-served and space-available basis. Please support the AANS by booking your room through the AANS Housing Bureau, onPeak, at one of the official 2016 AANS Annual Scientific Meeting hotels. These hotels have been selected because they are well-situated, provide a variety of rates and have consistently shown a high level of service.

When you book through the AANS Housing Bureau, you receive a room at the lowest negotiated rate, convenient locations and complimentary shuttle service to and from the convention center.

By making your reservation within the official housing block you are supporting the AANS and ensuring lower overall costs such as registration and convention center fees and ensuring that we are able to contract for the space that we need for future AANS Annual Scientific Meetings. Personally, you benefit by receiving the lowest rate for your room(s) as well as added services and incentives only available to those who book through onPeak.



Headquarters Hotel

Sheraton Chicago Hotel & Towers
301 E. North Water Street
Chicago, IL 60611

Located in the heart of downtown Chicago, the Sheraton Chicago Hotel & Towers, one of the finest hotels in Chicago, is ideally situated on the Chicago River, within walking distance of Navy Pier, Magnificent Mile shopping, world-class dining, Millennium Park, the Loop business district and many other local favorites that make Chicago a one-of-a-kind travel destination. Each of the hotels' guest rooms and suites feature lake, river and/or city skyline views.

To book your reservation go to
<https://compass.onpeak.com/e/66AAN16/0>

Official Housing Partners

Chicago Marriott Downtown Magnificent Mile

Embassy Suites Chicago – Downtown/Lakefront

Fairmont Chicago, Millennium Park

Four Seasons Hotel Chicago

Hilton Garden Inn Chicago Downtown/Magnificent Mile

Hyatt Regency Chicago

Hyatt Regency McCormick Place

InterContinental Chicago Magnificent Mile

Loews Chicago Hotel

Palmer House A Hilton Hotel

Sheraton Chicago Hotel & Towers

The Gwen, a Luxury Collection Hotel, Chicago

The Peninsula Chicago

To book your room at the negotiated conference rate, book online at <https://compass.onpeak.com/e/66AAN16/0>.



84th AANS Annual Scientific Meeting

April 30-May 4, 2016 | Chicago, Illinois
www.aans.org/AANS2016