SHAPING CANCER CARE AROUND YOUR PATIENTS

Offer fast and effective cancer treatment and greater access to advanced treatment options with Novalis’ Radiosurgery.

It’s non-invasive, shaped-beam radiosurgery that takes just minutes out of your patient’s day. They go in, get treated and get back to life.

To learn more, visit novalis-radiosurgery.com

Novalis Radiosurgery is not appropriate for all patients. Serious side effects may occur, such as peripheral tissue damage. Possible side effects include fatigue, headache and nausea, and may require treatment with steroids. Some doctors may opt to use a minimally invasive head frame for certain procedures. Treatment times and number of treatments may vary.

Booth 2100

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## CONTINUING MEDICAL EDUCATION (CME) AND DISCLOSURE LISTING

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- Colorado Convention Center, Hyatt Regency Denver

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*This final program is current as of Monday, March 21. For up-to-date information, please refer to the iPod touch®.*
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<th>SUNDAY, APRIL 10</th>
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<td>AANS International Lifetime Recognition Award</td>
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<td>CV, Peds, Spine, S&amp;F, Trauma, Tumor (Ronald L. Bittner Lecture)</td>
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<td>Kenichiro Sugita International Symposium</td>
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<td>CV, S&amp;F, Trauma, Spine, Tumor II, Socioeconomic</td>
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<td>Joint Annual Business Meeting of the AANS and the American Association of Neurosurgeons</td>
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<td>AANS Section on the History of Neurological Surgery Annual Dinner</td>
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2011 RECOGNITION

Robert F. Spetzler, MD
Rhoton Family Lecture
Plenary Session I
Monday, April 11

Richard Gilbertson, MD, PhD
Hunt Wilson Lecture
Plenary Session I
Monday, April 11

Thomas A. Marshall
Distinguished Service Award
Plenary Session I
Monday, April 11

Shigeaki Kobayashi, MD
AANS International Lifetime Recognition Award
Plenary Session I & International Reception
Monday, April 11

Raymond Sawaya, MD
Ronald L. Bittner Lecture
Scientific Session I – Tumor
Monday, April 11

Jon H. Robertson, MD
Richard C. Schneider Lecture
Plenary Session II
Tuesday, April 12

Ian Suk, BScBMC, CMI
Theodore Kurze Lecture
Plenary Session II
Tuesday, April 12

A. John Popp, MD
Cushing Medalist
Plenary Session II
Tuesday, April 12

Nathaniel Philbrick
Cushing Oration
Plenary Session II
Tuesday, April 12

Kristen Iversen
Louise Eisenhardt Lecture
Plenary Session III
Wednesday, April 13

Lars Olson, PhD
Van Wagenen Lecture
Plenary Session III
Wednesday, April 13

Barth A. Green, MD, FACS
Humanitarian Award
Plenary Session III
Wednesday, April 13
About AANS

Founded in 1931 as the Harvey Cushing Society, the American Association of Neurological Surgeons (AANS) is a scientific and educational association with over 8,100 members worldwide. The AANS is dedicated to advancing the specialty of neurological surgery in order to provide the highest quality of neurosurgical care to the public. All active members of the AANS are board certified by the American Board of Neurological Surgery, the Royal College of Physicians and Surgeons of Canada, or the Mexican Council of Neurological Surgery, A.C.

Neurosurgery is the medical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders that affect the spinal column, spinal cord, brain, nervous system and peripheral nerves. For more information on what neurosurgeons do, visit www.AANS.org and select Patient Information.

AANS Presidents

<table>
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<th>Year</th>
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<tr>
<td>2009 – 10</td>
<td>Troy M. Tippett, MD</td>
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<tr>
<td>2008 – 09</td>
<td>James R. Bean, MD</td>
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<tr>
<td>2007 – 08</td>
<td>Jon H. Robertson, MD</td>
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<tr>
<td>2006 – 07</td>
<td>Donald O. Quest, MD</td>
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<td>2005 – 06</td>
<td>Fremont P. Wirth Jr., MD</td>
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<td>2004 – 05</td>
<td>Robert A. Ratcheson, MD</td>
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<td>2003 – 04</td>
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<td>Roberto C. Heros, MD</td>
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<td>Stan Pelofsky, MD</td>
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<td>Stewart B. Dunsker, MD</td>
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<td>Martin H. Weiss, MD, FACS</td>
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<td>1998 – 99</td>
<td>Russell L. Travis, MD</td>
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<td>1997 – 98</td>
<td>Edward R. Laws Jr., MD</td>
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<td>John F. Fulton, PhD</td>
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<td>1932 – 33</td>
<td>William P. Van Wagenen, MD</td>
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AANS President James T. Rutka, MD, PhD, FRCS

James T. Rutka, MD, PhD, FRCS, was named president of the American Association of Neurological Surgeons (AANS) at the 78th AANS Annual Scientific Meeting in Philadelphia, May 1-5, 2010. A member of the AANS since 1983, he has served on the AANS Board of Directors since 2003. Prior to taking the helm as president of the AANS in May 2010, Dr. Rutka completed a one-year term as president elect and three-year term as secretary of the AANS.

He served as chair of the 2006 AANS Annual Scientific Meeting and chair of the Scientific Program Committee in 2005. He was the Honored Guest of the Congress of Neurological Surgeons 2009 Annual Meeting. He is a member of the following AANS committees: Executive, Finance, the Neurosurgery Research and Education Foundation Executive Council, Neurosurgery/PAC Board of Directors, Nominating (Chair), and Strategic Planning.

Dr. Rutka has been on the Neurosurgical Staff at the Hospital for Sick Children in Toronto since 1990. He is currently co-director of the
Arthur and Sonia Labatt Brain Tumour Research Centre. He recently completed a 10-year term as chairman of the Division of Neurosurgery at the University of Toronto and the Dan Family Chair. On April 1, 2011, he became chairman of the Department of Surgery at the University of Toronto, where he has been professor since 1999. Among his many awards are the Lister Award from the University of Toronto for sustained contributions to surgical research; a Scientist Award from the Medical Research Council of Canada; the Grass Award from the Society of Neurological Surgeons; and Knight of the Order of Smile, Kawaler Orderu Usmiechu.

He received his medical degree from Queen’s University Medical School in 1981, followed by residency in neurosurgery at the University of Toronto. He undertook basic science research studies in experimental neuro-oncology at the Brain Tumor Research Center at the University of California at San Francisco where he also received his PhD in experimental pathology from 1984 to 1987. He became a Fellow of the Royal College of Surgeons of Canada in 1989 and pursued clinical and research fellowships in Nagoya and Tokyo, Japan in 1990.

His primary research and clinical interests relate to the treatment of pediatric brain tumors, as well as the surgical treatment of epilepsy in children. Dr. Rutka was a driving force behind the formation of B.r.a.i.n.child, a support group for families whose children are undergoing treatments for brain tumors.

A prolific author, Dr. Rutka has published more than 320 peer-reviewed publications, and over 60 book chapters. He has presented at more than 300 meetings and conferences worldwide.

**Cushing Cigarette Box**

Each year at the Annual Scientific Meeting of the American Association of Neurological Surgeons (AANS), the outgoing president is presented with a special momento of his year in office—the “Cushing Cigarette Box”—representing more than a half century of neurosurgical tradition. The sterling silver Cushing Cigarette Box was originally presented to Harvey Cushing, MD, by the surgical staff at Peter Bent Brigham Hospital on April 14, 1931, commemorating Dr. Cushing’s 2000th verified intracranial tumor operation. Beginning with this cherished tradition back in 1959, Dr. Cushing’s nephew, E. H. Cushing, MD, presented the cigarette box to the AANS president and asked that it be passed on to each succeeding president as a symbol of the Association’s highest office.

**Special Lecturers**

**Cushing Orator**

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

**Past Cushing Orators**

<table>
<thead>
<tr>
<th>Year</th>
<th>Lecturer</th>
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<tr>
<td>1965</td>
<td>Louise E. Eisenhardt, MD</td>
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<td>1966</td>
<td>Philip Handler, MD</td>
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<td>1967</td>
<td>William H. Stewart, MD</td>
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<td>1968</td>
<td>R. Buckminster Fuller, PhD</td>
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<td>1969</td>
<td>Paul W. McCraken, MD</td>
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<td>1970</td>
<td>Robert O. Egeberg, MD</td>
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<td>Peter B. Brigham, MD</td>
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<td>1972</td>
<td>Robert Q. Marston, MD</td>
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<td>1973</td>
<td>Wernher von Braun, PhD</td>
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<td>1974</td>
<td>E. I. Ginzberg, MD</td>
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<td>1975</td>
<td>Paul W. McCraken, MD</td>
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<tr>
<td>1976</td>
<td>Robert O. Egeberg, MD</td>
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<tr>
<td>1977</td>
<td>The Hon. Rogers, MD</td>
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<td>1978</td>
<td>The Hon. Rogers, MD</td>
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<tr>
<td>1979</td>
<td>C. Rollins Hanlon, MD</td>
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<td>1980</td>
<td>The Hon. Paul Rogers</td>
</tr>
<tr>
<td>1981</td>
<td>Nathaniel Philbrick</td>
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</tbody>
</table>

Mr. Philbrick first gained fame for his nonfiction classic *In the Heart of the Sea: The Tragedy of the Whaleship Essex*, which won the prestigious National Book Award in 2001. The book familiarized modern readers with the harrowing true story behind Herman Melville’s *Moby-Dick*.

**2011 Cushing Orator**

Champion sailor, award-winning scholar and bestselling author Nathaniel Philbrick entertains his audiences with fascinating accounts of America’s past and tales of his own seagoing adventures. His lectures are delivered in the same brisk and engaging style that has made him one of the country’s most popular authors of historical narrative.

Mr. Philbrick's account of his years at sea and his own seagoing adventures will no doubt challenge and entertain his audiences with fascinating tales of his own sea-going adventures. His lectures are delivered in the same brisk and engaging style.

*In the Heart of the Sea: The Tragedy of the Whaleship Essex*, which won the prestigious National Book Award in 2001. The book familiarized modern readers with the harrowing true story behind Herman Melville’s *Moby-Dick*.
More recently he authored *Mayflower: A Story of Courage, and Community, and War*, a bestseller with a unique take on the Pilgrims’ journey to Plymouth Rock. He has also penned accounts of the quest to map the Pacific Ocean (Sea of Glory) and the rich history of his beloved Nantucket (Abram’s Eyes and Away Off Shore), as well as more lighthearted books about sailing: The Passionate Sailor; Yachting, A Parody; and A Sunfish Sailor’s Odyssey.

His newest book, *The Last Stand*, is a mesmerizing account of the Battle of Little Bighorn, and depicts the lives of the two major antagonists, Sitting Bull and Custer, in a manner previously unrecorded.

### Richard C. Schneider Lecture

The Richard C. Schneider Lecture is made possible, thanks to an endowment established by the University of Michigan and Dr. Julian T. “Buzz” Hoff.

Jon H. Robertson, MD, has been professor and chair of the Department of Neurosurgery at the University of Tennessee Health Science Center in Memphis since 1997. He has maintained an active practice at the Semmes-Murphey Neurologic and Spine Institute since 1979. His clinical practice has focused on the management of skull base tumors.

Dr. Robertson received his bachelor’s degree from Southwestern College (now Rhodes) in Memphis in 1968, followed by his medical degree from the University of Tennessee Medical School in 1971. He completed his internship and a year of general surgery at the City of Memphis Hospitals. Dr. Robertson completed his neurosurgery residency at the University of Tennessee Center for Health Sciences in 1979 and was certified by the American Board of Neurological Surgery in 1982.

Dr. Robertson’s academic career began as an assistant professor in the Department of Neurosurgery at the University of Tennessee Center for the Health Sciences in 1979. He was promoted to associate professor in 1984.

Dr. Robertson served as 2007-2008 AANS president and AANS secretary (2002-2006), in addition to serving on numerous AANS committees. He has been active in many other neurological organizations, serving on the Board of Directors of the Semmes-Murphey Neurologic and Spine Institute, Medical Education & Research Institute, and the American Board of Neurological Surgery. In 2002 he served as president of the North American Skull Base Society, and in 2005 as president of the Society of University Neurosurgeons.

### The Rhoton Family Lecture

The Rhoton Family Lecture is made possible thanks to an endowment established by Dr. Albert L. Rhoton Jr. in honor of his family.

Robert F. Spetzler, MD, has been director of the Barrow Neurological Institute (BNI) in Phoenix, Ariz. since 1985. He came to BNI in 1983 as the J.N. Harber Chair of Neurological Surgery. Under Dr. Spetzler’s leadership, the BNI has grown from primarily a regional center to an internationally recognized center of excellence that attracts both visiting healthcare professionals and patient referrals from around the world.

Dr. Spetzler received his medical degree from Northwestern University in 1971 and completed his internship in 1972. His neurosurgical residency was done at the University of California at San Francisco under the tutelage of Charles B. Wilson, MD. During the last year of his residency, he was awarded a Trauma Fellowship from the National Institutes of Health (NIH).

Among just a few of Dr. Spetzler’s contributions have been the development of theories on normal perfusion pressure breakthrough and how the size of arteriovenous malformations (AVMs) is related to their rupture; the development of a heuristic grading system for AVMs; advances in the surgical treatment of complex cerebrovascular lesions based on hypothermia, barbiturates, and cardiac arrest; and the development of innovative surgical approaches for skull base surgery. Since the start of his career, Dr. Spetzler has published more than 450 articles in refereed journals, 205 book chapters, and edited or coauthored numerous books and neurosurgical atlases.

### Van Wagenen Lecture

The Van Wagenen Lecture is made possible thanks to a bequest from Dr. William P. and Mrs. Abigail Van Wagenen to AANS.

Lars Olson, PhD, has been affiliated with the Karolinska Institute in Stockholm since 1962: He received his PhD in 1970, was appointed professor in 1986, served as chairman of the Department of Histology and Neurobiology from1987-1993, and chairman of the Department of Neuroscience from 2000-2004. He was a member of the Karolinska Nobel Assembly from 1994-2009, serving as chairman in 2008-2009, and has been chairman of the board of the Swedish Brain Foundation since 2010.

Since 1964, he has published close to 600 papers on topics including central nervous system development, growth factors, regeneration, aging and transplantation; models for neurodegenerative disease and spinal cord injury and their treatment strategies; the roles of transcription factors in the nervous system; genetic risk factors for Parkinson’s disease; and the Nogo signaling system.

His research has encompassed animal model to human clinical trials. Among these trials: Demonstration of efficacy of dopamine neuron grafts in a Parkinson model in 1979; and Demonstration of functional recovery after complete transection of the spinal cord in an adult mammal using a nerve graft repair strategy in 1996.
Current focuses are aging, neurodegenerative disease, neuronal plasticity and spinal cord injury. Dr. Olson recently published the MemoFlex mouse, which demonstrates the need to down regulate the Nogo receptor in forebrain neurons in order to form lasting memories. He also recently demonstrated that increased brain lactate is a hallmark of brain aging.

Ronald L. Bittner Lecture

The Ronald L. Bittner Lecture is made possible thanks to an endowment established by Mrs. E. Laurie Bittner, who made the gift in support of brain tumor research, in memory of her late husband who died of a glioma.

Raymond Sawaya, MD, has been professor and chairman of the Department of Neurosurgery at The University of Texas MD Anderson Cancer Center in Houston, Texas since the department was established in 1990. He is also the director of the Brain Tumor Center at MD Anderson and in 2005 assumed the position of professor and chairman of the Department of Neurosurgery at Baylor College of Medicine.

He has received various awards, including the Joseph P. Evans Award in Neurosurgery at the University of Cincinnati; the Charles Wilson Award from the AANS/CNS Section on Tumors; and the Anne C. Brooks & Anthony B. Bullock III Distinguished Chair in Neurosurgery at MD Anderson. Past leadership positions include: president of the Houston Neurological Society, chair of the AANS/CNS Section on Tumors and president of the American Radium Society.

Dr. Sawaya is a member of the editorial board of numerous medical journals and has been an invited lecturer nationally and internationally. He has published more than 200 manuscripts in peer-reviewed journals, has authored over 40 book chapters, and written and edited 11 books.

Dr. Sawaya is a noted leader in the field of neurosurgery with particular expertise in primary and metastatic brain tumors, third ventricle, brain stem and pineal region tumors, and enhancing the accessibility and safety of brain tumor surgery.

Hunt–Wilson Lecture

The Hunt-Wilson Lecture is made possible thanks to an endowment established by Dr. Timir Banerjee, in honor of his mentors, William Hunt, MD and Charles Wilson, MD.

Richard J. Gilbertson, MD, PhD, is currently director of the Division of Brain Tumor Research at St. Jude Children’s Research Hospital in Memphis, Tenn. He has served as co-director of the Neurobiology and Brain Tumor Program since 2006 and director of the Molecular Clinical Trials Core since 2003.

Richard J. Gilbertson, MD, PhD

Dr. Gilbertson received his medical degree in 1992 from the University of Newcastle upon Tyne, England. He became a member of the Royal College of Physicians (UK) in 1995, and received his PhD in 1998.

He is the recipient of numerous national and international awards and has been an invited lecturer worldwide. He has authored or co-authored more than 70 publications and written two book chapters.

On the research front, Dr. Gilbertson receives funding from the National Institutes on Health (NIH) and has been principal or co-principal investigator on many studies focusing on pediatric brain tumors. The principal goal of his research is to reduce the morbidity and mortality of children with central nervous system tumors through improved understanding of tumor biology. He serves on numerous brain tumor advisory boards and committees, including several within the NIH.

Recipients of Honorary Membership

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<th>Year</th>
<th>Name</th>
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<td>James A. Ferrendelli, MD</td>
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<td>Karl August Bushe, MD</td>
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<td>Darell D. Bigner, MD, PhD</td>
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<td>Bernard Pertuiset, MD</td>
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<td>Albert J. Aguayo, MD</td>
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<td>Emil Pasztor, MD</td>
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<td>Armando Basso, MD</td>
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<td>Jacques Brotch, MD, PhD</td>
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<td>Alexander Konovalov, MD</td>
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<td>Carl H. Hauber, JD, CAE</td>
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<td>Shozo Ishii, MD</td>
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<td>Roy W. Black</td>
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<td>Hajime Handa, MD</td>
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<td>John W. Holter</td>
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<td>Murray Goldstein, DO, MPH</td>
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<td>Madjid Samii, MD, PhD</td>
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<td>F. John Gillingham, MD</td>
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<td>H. Alphons D’Walder, MD, PhD</td>
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<td>Kurt Friedrich Schurmann, MD</td>
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<td>Andrei P. Romdchanov, MD</td>
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<td>Lindsay Symon, MD</td>
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<td>M. Gazi Yasargil, MD</td>
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<td>Elizabeth C. Crosby, PhD</td>
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<td>Chung-Cheng Wang, MD</td>
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<td>B. Ramamurthi, MD</td>
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<td>Keiji Sano, MD</td>
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<td>Gosta Norlen, MD</td>
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<td>Hugo Krayenbuhl, MD</td>
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<td>Wilder Penfield, MD</td>
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<td>R. Eustace Semmes, MD</td>
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<td>Dorothy Russell, MD</td>
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<td>Oscar Hirsch, MD</td>
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<td>1955</td>
<td>Norman M. Dott, MD</td>
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<td>Eduard A. V. Busch, MD</td>
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<td>1944</td>
<td>Howard C. Naftziger, MD</td>
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<td>Alfred W. Adson, MD</td>
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<td>1937</td>
<td>Sir Geoffrey Jefferson, MD</td>
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<td>Ernest Sachs Jr., MD</td>
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<td>1936</td>
<td>Herbert Olivecrona, MD</td>
<td>1931</td>
<td>Harvey Cushing, MD</td>
</tr>
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</table>
Theodore Kurze Lecture

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

Ian Suk, BSc, BMC, is associate professor in the Department of Neurosurgery, with a joint appointment in Art as Applied to Medicine at Johns Hopkins University. He specializes in imaging complex neurological surgeries for various medical journals and textbooks. He also teaches several graduate courses in medical illustration at the Johns Hopkins University Department of Art as Applied to Medicine.

Upon graduation with honors from the University of Toronto, Department of Biomedical Communications in 1993, Mr. Suk embarked on an illustrious career at The University of Texas MD Anderson Cancer Center in Houston, Texas. Under the supportive tutelage of Ziya Gokaslan, MD, and Raymond Sawaya, MD, he gained invaluable experience in the specialized field of neurosurgical illustration beginning in July 2000.

Along with Dr. Gokaslan, Mr. Suk was recruited to Johns Hopkins University in 2002 to join the Department of Neurosurgery as a faculty member. His unique illustrations have appeared in over 30 medical textbooks and 100 peer-reviewed journal issues, of which more than 50 were featured on the cover. These illustrations have won numerous awards from the Association of Medical Illustrators.

Award Recipients

Cushing Medalist

A. John Popp, MD, is chairman of Neurosurgery at the Brigham and Women’s Hospital and training director for the Children’s Hospital/BWH neurosurgery residency program.

He received his medical degree from the Albany Medical College where he ultimately became chairman of the Department of Surgery, serving from 1986-2004. Dr. Popp occupied the Henry and Sally Schaffer Chair of Surgery from 1986 to 2009. In 2004, the Shaffer Foundation endowed a chair in Dr. Popp’s honor at the medical college and he was selected as the Distinguished Alumnus of Albany Medical College. He received Albany Medical Center’s highest award, the Pillars Award in 2009. After completing his service as chair of Surgery at Albany Medical Center, he continued as director of the Neurosciences Institute at Albany Medical Center. In 2009 he moved to Boston to join the faculty at Harvard Medical School and Brigham and Women’s Hospital.

Currently, Dr. Popp is president of the World Academy of Neurological Surgeons, vice chair of the RRC for Neurological Surgery, and a governor of the American College of Surgeons representing the Society of Neurological Surgeons.


Past Cushing Medalists

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<td>2010</td>
<td>Roberto C. Heros, MD</td>
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<td>2009</td>
<td>Edward Hudson Oldfield, MD</td>
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<td>2008</td>
<td>Charles B. Wilson, MD</td>
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<td>2007</td>
<td>Robert G. Grossman, MD</td>
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<td>David G. Kline, MD</td>
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<td>Martin H. Weiss, MD</td>
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<td>2004</td>
<td>John A. Jane Jr., MD, PhD</td>
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<td>Stewart B. Dunker, MD</td>
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<td>2002</td>
<td>Edward R. Laws Jr., MD</td>
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<td>Julian T. Hoff, MD</td>
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<td>2000</td>
<td>Russell H. Patterson Jr., MD, FACS</td>
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<td>1999</td>
<td>David J. Kelly Jr., MD</td>
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<td>1998</td>
<td>Albert L. Rhoton Jr., MD</td>
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<td>1997</td>
<td>Robert G. Ojemann, MD</td>
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<td>Shelley N. Chou, MD, PhD</td>
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<td>1995</td>
<td>Richard De Saussure, MD</td>
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<td>Byron C. Pevehouse, MD</td>
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<td>1993</td>
<td>Sidney Goldring, MD</td>
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<td>W. Eugene Stern, MD</td>
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<td>William F. Collins, MD</td>
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<td>Lester A. Mount, MD</td>
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<td>Charles G. Drake, MD</td>
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<td>Lyle French, MD</td>
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<td>Francis Murphy, MD</td>
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<td>Eben Alexander Jr., MD</td>
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<td>Guy L. Odom, MD</td>
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<td>W. James Gardner, MD</td>
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<td>Henry G. Schwartz, MD</td>
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<td>1978</td>
<td>William H. Sweet, MD</td>
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<td>1977</td>
<td>Frank H. Mayfield, MD</td>
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</table>
Dr. Popp has been an advisor for a National Science Foundation study on ethics and experimental design, a member of the Steering Committee for an AHCPR grant measuring and improving the quality of carotid endarterectomy, and the recipient of grants from the NIH for the study of neurogenic lung failure and traumatic injury to the central nervous system. Dr. Popp specializes in the treatment of aneurysms, vascular malformations and brain tumors.

Distinguished Service Award

The Distinguished Service Award is one of the highest honors bestowed by the American Association of Neurological Surgeons, recognizing exemplary service to the AANS and the field of neurosurgery. The award pays tribute to the contributions of remarkable people within their profession.

Thomas A. Marshall is executive director of the AANS, a position he has held since December 2000. Under his professional management, the AANS has grown from an organization of 5,800 members to one of more than 8,000 members worldwide. He implemented several key policies in his early years at the AANS which led to the current robust fiscal state of the organization. Among these were aggressive downsizing to address dire financial circumstances, establishing reserve and exception-to-budget policies, building non-dues revenue streams, and retaining the services of a portfolio manager to handle investments.

In addition to these accomplishments, in his years as AANS Executive Director, Mr. Marshall has shown a true commitment to building on the spectrum of ever-evolving services provided to members. The most significant of these was the implementation of the first scientific meeting in North America to be conducted via the iPod touch® at the 2010 AANS Annual Scientific Meeting in Philadelphia.

Mr. Marshall has nearly 30 years of nonprofit and membership association management experience. He joined the AANS in 1999 as the associate executive director for programs. Prior to that, he served for 10 years as the division director for marketing and communications at the American Society of Plastic Surgeons, where he had budgetary oversight for generating $2.5 million in annual non-dues revenues. Previously, he held senior management positions at the American Society for Safety Engineers and America’s Second Harvest (now Feeding America), and was director of public relations/alumni affairs for a private high school in northern Illinois.

Humanitarian Award

At the recommendation of President Robert Ojemann, MD, the Board of Directors established the Humanitarian Award in January 1987. The award recognizes AANS members for activities outside the art and science of neurosurgery, which bring great benefit to mankind. The Board of Directors selects the recipient on the recommendation of the Awards Committee. The Humanitarian Award distinguishes those members who have given their time or talents selflessly to charitable or public activity and whose actions have brought honor to the specialty.

Barth A. Green, MD, FACS, is professor and chairman of the Department of Neurological Surgery at the University of Miami Miller School of Medicine. He is a world-renowned specialist in the surgical management of complex spinal cord injuries/disorders and a cofounder of The Miami Project to Cure Paralysis, the largest, most comprehensive spinal cord injury/paralysis research center in the world. Dr. Green is also a cofounder and chairman emeritus of Shake-A-Leg Miami, an adaptive watersports center combining education and recreation, annually serving more than 12,000 children and adults with physical, developmental, and economic challenges.

On the international front, Dr. Green cofounded Project Medishare for Haiti in 1994 to help improve the health status of Haiti’s citizens through an integrated, bottom-up, community approach to development. Before the disastrous 2010 earthquake, Project Medishare was serving over 85,000 Haitians in some of the poorest, isolated areas of the country. Dr. Green is also cofounder of the University of Miami’s Global Institute for Community Health and Development, a university-wide program focused on improving healthcare and advancing community development in the Western Hemisphere.

Within 24 hours of the earthquake in Haiti, Dr. Green had arrived in Port-au-Prince with medical supplies and a small group of doctors. Initially working out of the United Nations tent at the Port-au-Prince Global Institute, Dr. Green’s team was able to quickly set up an operating room and begin surgical interventions.

Past Recipients of the Distinguished Service Award

<table>
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<th>Year</th>
<th>Recipient</th>
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<td>Katie O. Orrico, JD</td>
<td>2003 Troy M. Tippett, MD, FACS</td>
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<td>In memory of Samuel J. Hassenbusch, MD, PhD</td>
<td>2002 John A. Jane Sr., MD, PhD</td>
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<td>2008</td>
<td>Peter W. Carmel, MD</td>
<td>2001 Donald H. Stewart Jr., MD</td>
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<td>2007</td>
<td>Mary Louise Sanderson</td>
<td>2001 Frank P. Smith, MD</td>
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<td>2006</td>
<td>Lyal Leibrock, MD</td>
<td>2000 George Ablin, MD</td>
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<td>2005</td>
<td>John C. Van Gilder, MD</td>
<td>2000 Robert H. Wilkins, MD</td>
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<td>2004</td>
<td>John A. Kuske, MD</td>
<td>1999 W. Ben Blackett, MD, FACS, JD</td>
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<td>1998 Mark J. Kubala, MD</td>
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<td>1997</td>
<td>Ernest W. Mack, MD</td>
<td>1996 Robert E. Florin, MD</td>
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<td>1995</td>
<td>Charles Edwin Brackett, MD</td>
<td>1994 William A. Buchheit, MD</td>
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<td>1993</td>
<td>Roy W. Black, Codman &amp; Shurtleff, Vice President</td>
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airport, they treated hundreds of critically injured Haitians daily. While Dr. Green was in Haiti, his colleagues at the UM Global Institute/Project Medishare established a massive relief effort and airlifted volunteer physicians, nurses and allied health professionals along with tons of medical supplies and equipment. On January 21, the UM Global Institute/Project Medishare field hospital opened and treated over 30,000 patients and performed more than 1,500 emergency surgeries. Over 5,000 rotating medical volunteers from around the world served at the field hospital which was the only referral center for severe critical care and trauma cases in Haiti. On June 7, the field hospital relocated to a community hospital, Hospital Bernard Mevs in downtown Port-au-Prince. Since opening, they have treated more than 45,000 patients and fitted over 200 amputees with prosthetic limbs. Hospital Bernard Mevs Project Medishare is completely Haitian-run and is presently staffed with over 200 Haitian employees and an international team of volunteer mentors that rotate on a weekly basis.

A year before the earthquake, Dr. Green joined hands with a coalition of leaders of the Haitian healthcare and business sectors and government representatives to create a public/private partnership. This group developed a plan for a national system for Critical Care/Trauma/Rehabilitation and a national disaster response plan that would complement Haiti’s healthcare strategy without burdening the government financially. Dr. Green and this group are committed to implementing this plan which will save millions of lives in the future.

Louise Eisenhardt Lecture

Kristen Iversen is the author of Molly Brown: Unraveling the Myth, winner of the Colorado Book Award for Biography and the Barbara Sudler Award for Nonfiction. Several documentaries by A&E Biography and The History Channel have been based on this book, including the recent NEH film and exhibit, Molly Brown: Biography of a Changing Nation.

Ms. Iversen is the author of a seminal textbook, Shadow Boxing: Art and Craft in Creative Nonfiction, and her work has appeared in literary journals around the country. Her forthcoming memoir, Full Body Burden: Growing Up in the Shadow of Rocky Flats, chronicles the story of Rocky Flats, a government facility near Denver that secretly produced the heart of every nuclear bomb in the U.S. and — unbeknownst to residents — resulted in radioactive contamination of nearby communities. A travel writer in Europe for several years, Ms. Iversen holds a PhD from the University of Denver and has taught at universities around the country. She currently teaches in and directs the MFA program at the University of Memphis. She also serves as editor-in-chief of the award-winning literary journal The Pinch.

Past Louise Eisenhardt Lecturers

2010 Mary Sue Coleman, PhD 2008 Marcia Angell, MD
2009 Geraldine Brooks 2007 Sally Ride, PhD

AANS International Lifetime Recognition Award

The AANS International Lifetime Service Award recognizes an international neurosurgeon or other international dignitary for his or her lifetime of contributions to advancing the field of neurosurgery in a country outside the United States and Canada.

Shigeaki Kobayashi, MD, PhD, is currently director of Komoro Kosei General Hospital in Nagano, Japan. He graduated from Shinshu University School of Medicine in Matsumoto in 1963 and completed his neurosurgical residency at Mayo Clinic in 1971. He received his PhD in neurosurgery from Shinshu University Graduate School of Medicine in 1977. He joined Prof. Kenichiro Sugita to start the Department of Neurosurgery at Shinshu University, and succeeded him in 1988 as professor and chairman of the department, a position he held until 2003. He is certified by both the American and Japanese Boards of Neurological Surgery.

In leadership roles, Dr. Kobayashi served as president of both the Japanese Congress of Neurological Surgeons and Japan Neurosurgical Society. He served as treasurer of the World Federation of Neurosurgical Societies from 1997-2001, and is now an honorary president of the WFNS. In addition to the AANS, he is a member of numerous neurosurgical societies including the Congress of Neurological Surgeons, Japan Neurosurgical Society, Japanese Congress of Neurological Surgeons, the Society of Neurological Surgeons and the Eurasian Academy of Neurological Surgery.

Past Recipients of the Humanitarian Award

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<th>Year</th>
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<tr>
<td>2010</td>
<td>Timir Banerjee, MD, FACS</td>
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<td>2009</td>
<td>Armondo J. Basso, MD, PhD</td>
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<td>2008</td>
<td>Robert J. Dempsey, MD</td>
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<td>2007</td>
<td>Benjamin C. Warf, MD</td>
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<td>2006</td>
<td>Gene E. Bolles, MD</td>
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<td>2005</td>
<td>Tetsuo Tatsumi, MD, FACS</td>
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<td>2004</td>
<td>Charles L. Branch Sr., MD</td>
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<td>2003</td>
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<td>2002</td>
<td>Edgar M. Housepian, MD</td>
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<td>2001</td>
<td>Gary D. Vander Ark, MD</td>
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<td>2000</td>
<td>Menwyn Bagan, MD, MPH</td>
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<td>Robert J. White, MD</td>
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<td>1996</td>
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<td>1995</td>
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Dr. Kobayashi was selected as a medical commissioner of the International Olympic Committee, which culminated in being named chief medical officer of the 1998 Nagano Winter Olympics.

Dr. Kobayashi has served on the editorial board of several international neuroscience journals including Neurosurgery, Journal of Clinical Neuroscience (co-editor), Neurologia Medico-chirurgica (Tokyo), Surgical Neurology, Neurological Research, Acta Neurochirurgica, and Skull Base Surgery. A prolific author, he has published more than 800 scientific papers.

He is the recipient of many awards including the 1994 Kenneth Jamieson Medal from the Australasian Neurosurgical Society, the 2000 Nikkei BP Award for Medical and Bio Section from Nikkei Business Publications, Inc., and the 2005 Mayo Clinic Alumni Association Professional Achievement Award.

His fields of interest include vascular neurosurgery, skull base surgery, benign tumors such as acoustic tumors and meningiomas, surgical instruments, and microsurgical anatomy. His interest in vascular neurosurgery began while working as first assistant to the late Thoralf M. Sundt, MD, at the Mayo Clinic, and his interest in microsurgical anatomy began under the tutelage of Albert L. Rhdon Jr., MD, at the Mayo Clinic Laboratory. Working as an associate of Prof. Sugita, his surgical practice focused on aneurysms, acoustic tumors, skull base meningiomas, and innovation of surgical instruments. More recently, he has contributed to breakthroughs in the areas of neurosurgical robotics and telesurgery.

Past Recipients of the AANS International Lifetime Recognition Award

2010 Jose G. Martin-Rodriguez, MD
2009 Albino P. Bricolo, MD
2008 Jose Humberto Mateos Gomez, MD

International Travel Scholarship

Atul Goel, MD, is professor and head of the Department of Neurosurgery, King Edward Memorial Hospital and Seth G.S. Medical College, Parel, Mumbai, India. He has been a consultant neurosurgeon at TATA Memorial Hospital and Cancer Research Institute since 1999.


Active in organized neurosurgery in India and internationally, Dr. Goel is founding member of the Skull Base Society of India, life member of both the Neurological Society of India and Society of Cerebrovascular Surgery of India, and a member of the World Academy of Neurosurgery. Dr. Goel will serve as president of the Asia-Oceanian Skull Base Surgery Society in 2011, and in 2014, as president-elect of the Indo-Japan Society of Neurosurgery.

International Visiting Surgeons Fellowship

The AANS is committed to increasing its involvement in international neurosurgery, in particular furthering educational opportunities in developing countries. One meaningful offering is the AANS International Visiting Surgeons Fellowship. The AANS funds two observational fellowships per fiscal year to provide meaningful educational experiences in North America to international neurosurgeons who will practice and/or teach neurosurgery in their home countries.

The 2011 AANS International Visiting Surgeon Fellowship Recipients are:

- Suchanda Bhattacharjee, MD, from Somajiguda, India. She will visit British Columbia Children’s Hospital under Dr. Paul Steinbok’s observation. Dr. Bhattacharjee hopes to develop a pediatric neurosurgical unit in Hyderabad.
- Mohamed El Beltagy, MD, from Cairo, Egypt. He will visit Children’s Hospital Boston under Dr. Liliana C. Gounmerova’s observation. Dr. El Beltagy will focus his observational fellowship on treatments for pediatric brain tumors.

AANS/CSNS Socioeconomic Session

Byron Cone Pevehouse Award

Mary I. Huang is a fourth year medical student at Case Western Reserve University. She was born in Taiwan, immigrated to the US when she was 4 years old, and spent time in Utah and the San Francisco Bay area. She attended Stanford University where she received a BA in Human Biology and MS in Biological Sciences.

Ms. Huang developed an interest in a career in medicine through clinical research and volunteer experiences in developing countries. She has been able to integrate her passion for public health and neurosurgery by leading an investigative research project that has revealed a 2-fold rise in infant non-accidental head trauma incidence and severity rates associated with the recent economic recession. Ms. Huang is currently applying for neurosurgical residency programs.
Robert Florin Award

Maya Babu, MD, MBA, is a first-year neurosurgery resident at the Mayo Clinic. Maya received her medical degree from Harvard Medical School cum laude and her Master of Business Administration from Harvard Business School in 2010. She graduated summa cum laude with high distinction from the University of Minnesota with a Bachelor of Science in neuroscience and Bachelor of Arts in psychology in 2005.

Dr. Babu has worked at the Department of Health and Human Services, and served in leadership roles with the American Medical Association, Association of Women Surgeons, Minnesota Medical Association and Massachusetts Medical Society. She has studied the developmental effects of iron deficiency on learning and memory, the impact of welfare reform on mothers’ access to treatment, and more recently, the influence of socioeconomic factors on the transfer of patients with head trauma.

Neurosurgery Research and Education Foundation (NREF) Award And Fellowship Recipients

The NREF Research Fellowships and Young Clinician Investigator Awards are made possible thanks to the generous support of AANS members, group practices, hospitals, corporate supporters and the public. These grants truly make a difference to the scientists receiving them. Typically, the NREF funds nine to twelve grants in the area of biomaterials, brain tumors, cerebrovascular disease, endovascular neurosurgery, pain management, pediatrics, spine and trauma.

Neurosurgery Research Foundation 2009 Awardees

ACS/NREF – AANS Faculty Career Development Award

Daniel Lim, MD, PhD – University of California, San Francisco

Sponsor: Arnold Kriegstein, MD, PhD

Project: Gene Therapy Based Induction of Neurogenesis from Adult Human Neural Precursor Cells.

Throughout life, the human brain harbors adult neural precursor cells (ANPCs). Patient-specific ANPCs can now be propagated extensively in culture, however, the ability to differentiate them into neurons is limited. My preliminary studies in mice indicate that it is possible to “reprogram” cultured neural precursors into GABA-ergic neurons with high efficiency using a lentiviral vector overexpressing a single neurogenic transcription factor. We will test whether this neuronal induction is possible from cultured human ANPCs. GABA-ergic interneurons derived by this method may be useful to suppress abnormal excitatory neuronal activity such as that found in epilepsy.

NREF/American Academy of Neurological Surgery (AANNS) Research Fellow

Demitre Serletis, MD – University of Toronto

Sponsor: Peter Carlen, MD


Neurodynamical methods based on deterministic and stochastic theories have become popular in the study of real systems (e.g. the brain). We aim to apply these techniques to investigate the complexity underlying dynamical state transitions in the healthy and epileptic brain, using information extracted from background “noise-like activity” (NLA) in the system. Our analyzed signals are recorded from epileptiform models of the in vitro mouse whole-hippocampus and human hippocampal slices, and the in vivo mouse and rat hippocampus. Ultimately, this research will underscore the importance of NLA and its complex properties in classifying, detecting, and potentially predicting transitions into seizure activity.

NREF/DePuy Spine Research Fellow

Zeguang Ren, MD – University of Rochester

Sponsor: Jason H. Huang, MD


EphrinB2 is a member of the family of axon guidance molecules (AGMs), which control embryonic development of the central nervous system as well as peripheral nervous system. Recent evidence suggests that some AGMs function as negative regulators during axonal regeneration after SCI. Ephrin B2 is one of them. In addition, EphrinB2 is significantly up regulated in astrocytes within SCI sites. The main objective of this project is to identify how EphrinB2 signaling pathway negatively impacts axonal regeneration using transgenic mice. We will study astrocytes from EphrinB2 conditional knockout mice and the role of EphrinB2 in regeneration. This study seeks to determine whether null or antagonism of EphrinB2’s function in astrocytes will promote axonal regeneration.
Neurosurgery Research and Education Foundation 2010 Awardees

NREF/Porex Surgical Research Fellow

Kaveh Asadi-Moghaddam, MD – Ohio State University
Sponsor: E. Antonio Chiocca, MD, PhD
Project: The Role of microRNA-128 in Glioma Stem Cell Self-Renewal

The prognosis for patients with Glioblastomas (GBM) remains dismal. Recent studies have identified a stem-cell-like glioma cell (GTSC) population, and have shown that these cells are especially resistant to radiation and chemotherapy. Therefore, new approaches are needed that specifically target the GTSC. Remarkably, genes that play a role in stem cell maintenance are highly expressed in GBM, including the stem cell renewal factor Bmi-1. In a recent study we have demonstrated that microRNA-128 is expressed at very low levels in GBM compared with normal brain and that microRNA-128 directly targets Bmi-1. MicroRNAs are small non-coding RNAs that downregulate genes. In this application, we hypothesize that restoring microRNA-128 expression in GTSC results in reduced proliferation through a mechanism that involves Bmi-1 and that this will inhibit the growth of these tumors in vivo. To this end, we will examine in Aim #1, the effects of microRNA-128 on Bmi-1 and self-renewal in multiple GTSC lines in vitro and in vivo. In Aim #2 we will examine the significance of Bmi-1 as a target of microRNA-128 by detailed analysis of the cellular alterations caused by microRNA-128. Finally, in Aim #3 we will design an adeno-associated virus expressing microRNA-128. This vector will be used to assess therapeutic efficacy in a mouse brain tumor model. Successful completion of the proposed experiments will provide a strong rationale for the rapid clinical translation of a novel therapeutic strategy using microRNAs that target glioma stem-like cells for the treatment of malignant gliomas.

NREF/Cerebrovascular Section Research Fellow

Stephen Monteith, MD – University of Virginia
Sponsor: Neal Kassell, MD
Project: MRI Guided Focused Ultrasound Sono-Thrombolysis for the Evacuation of Intracerebral Hemorrhage – A Safety and Feasibility Study

Intracerebral hemorrhage (ICH) is common in the general population and is associated with significant morbidity and mortality. Modern surgical approaches to evacuate the hematoma have focused on minimally invasive techniques in an attempt to limit injury to surrounding neural tissues caused by the procedure. It has been demonstrated that a formed blood clot can be liquefied using focused ultrasound energy. The present proposal is to determine the effectiveness of transcranial MRI guided Focused Ultrasound Surgery in achieving sonothrombolysis of ICH in vivo. Sonothrombolysis permits more extensive aspiration of toxic blood breakdown products, and allows for immediate decompression of adjacent neural structures.

NREF/Codman Research Fellow

Nirav Patel, MD – University of Wisconsin, Madison
Sponsor: Bermans Iskandar, MD
Project: Investigating an Epigenetic Intervention to Promote CNS Regeneration through the Folate Pathway

Evidence suggests that stimuli including toxins, behavior, and diet alter an animal’s epigenome, leading to new inheritable phenotypes without DNA sequence change. In our laboratory, folic acid improves CNS repair. Furthermore, our preliminary data show that mating rats fed a high methyl diet, lead to three generation of offspring that regenerate after spinal cord injury, 3-6x greater than controls. We will confirm this hypothesis by showing the transgenerational effect is robust, neuronal, dependent on DNA methylation, and reversible by methylation inhibition. This work is important for CNS repair and is an example of inheritance beyond DNA sequence.
NREF/Medtronic Research Fellow
D. Ryan Ormond, MD – New York Medical College
Sponsor: Meena Janwar-Uniyal, PhD
Abstract: Spinal cord injury (SCI) affects nearly 1.25 million people in the U.S. Studies have suggested that stem cell therapy is an option for treatment and recovery from SCI. However, the activation of inflammatory signaling pathways associated with enhanced cytokine release in SCI present a major obstacle in stem cell-based therapies. Curcumin longo, a polyphenol, is a naturally-occurring compound used for centuries as a topical, oral, or inhalation anti-inflammatory agent, and is a potent inhibitor of pro-inflammatory molecule NF-kB. We aim to test the hypothesis that stem cell therapy in conjunction with curcumin will provide faster and better recovery following SCI.

NREF/Medtronic Research Fellow
Deshdeepak Sahni, MD – Baylor College of Medicine
Sponsor: James M. Tour, PhD & Andrew Jea, MD
Project: Carbon Nanomaterials as a Scaffold for Axonal Growth and Alignment Following Spinal Cord Injury
Abstract: Spinal cord injuries (SCI) affect approximately 250,000 people annually in the U.S. Complex challenges remain in the treatment of SCI through the regeneration of severed neurons. It has been shown that carbon NTs are biocompatible, suitable for neuronal adhesion and growth, and able to transfer electrical signals to nerve cells. We propose that scaffolds of carbon NTs will align and increase neurite outgrowth in the central nervous system via electrical stimulation and the delivery of chemical stimulants. In vitro studies identifying superior nanomaterials and chemico-electrical stimulation regimes will lead to eventual testing of a nanomaterial scaffold with chemico-electrical stimulation in a murine SCI model. Success in these studies will lay a foundation for the use of nanotechnological approaches to treat SCI clinically.

NREF/Porex Surgical Research Fellow
Jon Willie, MD – Washington University in St. Louis
Sponsor: David Brody, MD, PhD
Project: Orexin Neuropeptide Dynamics in Experimental Traumatic Brain Injury: A Key Mediator of Arousal and Therapeutic Target
Impaired arousal and cognition results from TBI. The hypothalamic orexin neuropeptide system regulates arousal and cognitive performance. We hypothesize that TBI impairs dynamics of orexin release into brain interstitial fluid, orexin dynamics correlate with neurological status following TBI, and orexin-based treatment will improve behavioral outcomes. We aim to assess the function of the orexin system using intracerebral microdialysis following experimental TBI in mice. We will correlate abnormal orexin dynamics to levels of arousal and behavioral outcomes following TBI. Ultimately, we will test whether central orexin administration alters these outcomes in mice, facilitating investigation of orexin-based therapies for human TBI.

NREF/Section on Tumors Research Fellow
Christoph Hofstetter, MD – Weill Cornell Medical College
Sponsor: John Boockvar, MD
Project: Role of Novel Protein Phosphatase Isoform in Human Glioblastoma Multiforme
Glioblastoma multiforme (GBM) carries a poor prognosis despite aggressive treatment strategies. Investigating mechanisms that underlie therapy resistance of certain tumor cells may allow us to design more effective treatment strategies. Protein phosphatases play an important role in cell proliferation and differentiation. The serine/threonine protein phosphatase 2A (PP2A) core structure consists of a catalytic subunit and scaffold protein, which are joined by a regulatory subunit that determines substrate specificity and enzyme activity. Recently, PP2A has been proposed to be involved in resistance of tumor cells to cytotoxic therapy in GBM. We therefore studied PP2A protein expression and enzymatic activity in GBM.

Through our research, we demonstrated that hypoxia induces PP2A enzyme activity in GBM, which may contribute to the dormant state of tumor stem cells. Further experiments are required to determine whether modifying PP2A activity may increase the responsiveness of tumor stem cells to cytotoxic therapy.

NREF Research Fellow
Ning Lin, MD – Children’s Hospital Boston/Brigham & Women’s Hospital
Sponsor: Robert Friedlander, MD
Project: Apoptosis and Cerebral Vasospasm Following Subarachnoid Hemorrhage: Functional Interaction Between Endothelial Cells and Neurons
Cerebral vasospasm is a severe complication of aneurismatic subarachnoid hemorrhage (SAH) and the pathogenesis is not well understood. While its hallmark is the severe constriction of major cerebral vessels, multiple studies have suggested that vasospasm is not merely a...
disease of vasoconstriction. Recent investigations demonstrated that endothelial cells could be neuro-protective for neurons exposed to ischemic stress and have the ability to produce brain derived neurotrophic factor (BDNF). Furthermore, endothelial and neuronal apoptosis have been observed after SAH, and inhibition of apoptotic pathways could lead to enhanced neuronal survival and improved neurological outcomes. We hypothesize that neurotrophic factors secreted by cerebral endothelial cells promote neuronal survival after SAH by inhibiting Caspase-dependent apoptosis cascade. We propose to utilize a murine SAH model to evaluate the role of cell death pathways as modulating influences when vasospasm is induced and neuronal damage occurs.

NREF/Biomet Microfixation Young Clinician Investigator

Allen Waziri, MD – University of Colorado, Denver
Sponsor: Holger Eltzhig, MD, PhD
Project: Exploration of the Role of Hypoxia-Associated Adenosine Production in the Suppression of Anti-Tumor Cellular Immunity in Glioblastoma Multiforme

Increased understanding of GBM-associated immunosuppression will be critical for developing effective immunotherapeutic strategies. Recent experimentation has implicated hypoxia-associated adenosine phenomenon within GBM. We hypothesize that intratumoral adenosine is responsible for generating generation/signaling in human GBM and provide initial in vivo exploration of the effects of intratumoral adenosine on anti-tumor immunity in a rodent model of GBM. This work will hopefully provide new therapeutic options for improving anti-tumor immunity in affected patients.

NREF/Codman & DePuy Spine Young Clinician Investigator

Hongyan Jenny Zou, MD – Mount Sinai School of Medicine
Sponsor: Eric Nestler, MD
Project: Intrathecal Delivery of AAV-Virus Targeting the BMP Pathway to Promote Axonal Regeneration

CNS injury often results in permanent neurological deficits, yet no clinical treatment exists. One remaining obstacle is to find strategies to rejuvenate the intrinsic axon growth capacities of injured neurons. This requires defining molecular pathways that can promote axonal outgrowth, and establishing therapeutic approaches to turn them on. This proposal answers both challenges – we will test the hypothesis that BMP/Smad1 signaling pathway plays a key role in mediating axon growth; and a clinically relevant, in vivo gene delivery method to effectively turn on the pathway in adult sensory neurons will promote axon regeneration. If successful, the findings will point to novel molecular targets, and be readily translatable for treating spinal cord injury patients.

NREF/Spine and Peripheral Nerves Section Young Clinician Investigator

Michael Steinmetz, MD – Cleveland Clinic
Sponsor: Jerry Silver, MD
Project: Restoration of Urinary Function Following Acute Spinal Cord Injury

Following a complete spinal cord injury, there is loss of motor, sensory and autonomic function below the level of the lesion. The patient often has to perform long-term self-catheterization, resulting in frequent urinary tract infections, bladder wall hypertrophy and possible kidney failure. Return of this function was ranked second among paraplegics and of high priority in those suffering from quadriplegia. The experiments presented herein propose a new method in which a light-sensitive ion channel (light-switch) is inserted in the sacral spinal cord via a viral delivery system. Light, of a specific wavelength and pattern, shone on the sacral spinal cord may then result in either stimulation or inhibition of the EUS. This may then permit continence or coordinated urination in spinal cord injured patients.

AANS Medical Student Summer Research Fellowship

Benjamin Plog is currently a second-year medical student at the University of Rochester School of Medicine and Dentistry. As a high school senior at Shenendehowa High School in Saratoga Springs, N.Y., he was accepted into the Rochester Early Medical Scholars (REMS) Program, an eight-year combined BA/MD program with early admission to medical school. He finished his undergraduate career with a Bachelor of Arts in biology and a minor in chemistry, and graduated summa cum laude, Phi Beta Kappa.

In his first year of medical school, Mr. Plog was the recipient of the 2009 Hrolf and Dorothy Ziegler Prize in Anatomy for outstanding academic achievement and interpersonal interactions for a Human Structure and Function course. He is chairman of the community service subcommittee of his medical student chapter of the American Medical Association.

As an AANS Medical Student Summer Research Fellow, he worked in the laboratory of G. Edward Vates, MD, and Maiken Nedergaard, MD, DMSc, quantifying morphological changes in microglia with respect to the brain’s microvasculature following subarachnoid hemorrhage induction. He hopes to further uncover the pathophysiology of subarachnoid hemorrhage while completing a year-out fellowship over the next year.
William P. Van Wagenen Fellowships

Nicholas F. Marko, MD, is chief neurosurgery resident at the Cleveland Clinic and will complete his residency in June 2011. He received his medical degree from the George Washington University School of Medicine in 2005. He is the recipient of numerous past research grants and academic awards.

His area of focus is brain tumors, performing clinical as well as basic science research. Dr. Senft has been lead author or co-author of more than 20 peer-reviewed publications and was appointed reviewer for several international journals including the Journal of Neurochemistry and Neurosurgical Review. Dr Senft is a member of the German and European Neurosurgical Societies (DGNC, EANS) and the Intraoperative Imaging Society (IOIS).

Women In Neurosurgery (WINS) Louise Eisenhardt Award

Amanda Muhs Saratsis, MD, is currently a fifth-year neurosurgery resident at Georgetown University Hospital, and is studying the biology of pediatric brainstem glioma in a laboratory at the Center for Genetic Medicine Research at Children’s National Medical Center in Washington, D.C.

Dr. Saratsis earned her medical degree from the University of Illinois at Chicago College of Medicine, where she received the Warren H. Cole Surgery Society Award for Excellence in Surgery, as well as nominations to the Gold Humanism and Alpha Omega Alpha Honor Societies. A Chicago native, Dr. Saratsis attended Northwestern University as an undergraduate, earning dual majors and departmental honors in molecular biology and psychology with a minor in philosophy, while also studying piano performance at both the Northwestern University School of Music and the Chicago Music Institute.

Upon completion of her residency, Dr. Saratsis plans to pursue fellowship training in pediatric neurosurgery.

Young Neurosurgeons (YNS) Medical Student Award

Matthew Mian, BS, studied biomedical engineering, mathematics, and chemistry at Duke University, where he graduated summa cum laude in 2006. At Duke, he cofounded InnoWorks, a non-profit dedicated to fostering interest in science among underprivileged middle school students. After graduating, he volunteered for a summer as a biomedical engineer in Nicaragua and then enrolled in the HST Division of Harvard Medical School.

In medical school, Mr. Mian developed an interest in neuroscience and spent two years conducting research in the laboratory of Emad Eskandar, MD, at Massachusetts General Hospital. His research has encompassed studies of the role of the striatum in visuomotor learning, the processing of cognitive interference by the anterior cingulate cortex, and the contribution of the human dorsolateral prefrontal cortex to tool selection.
This summer he will volunteer at the CURE Children’s Hospital of Uganda, a pediatric neurosurgical hospital. He will be applying to neurosurgical training programs this fall, and ultimately hopes to pursue a career as an academic neurosurgeon with a basic science laboratory.

Section Award Recipients

AANS/CNS Section On Pain

William H. Sweet Award

Mohammed F. Shamji, MD, PhD, is chief resident of neurosurgery at The Ottawa Hospital in Ottawa, Ontario. He received combined BS/MS degrees in chemistry at Yale University, his medical degree at Queen’s University, and is completing his neurosurgical residency. Mid-residency, he completed PhD training in biomedical engineering at Duke University with projects focusing on animal models of inflammatory radiculopathy and sustained-release drug delivery. His academic interests include spine surgery and pathomechanisms of low back pain with career aspirations of evolving into a surgeon-scientist.

6th Annual John Loeser Lecture

Yucel Kanpolat, MD, is president of the Turkish Academy of Sciences in Ankara. From 1989-2008, he was professor in the Department of Neurosurgery at Ankara University, School of Medicine. He started his academic career at that institution in 1975 as an assistant professor after serving a one-year term in the military as chief of the Neurosurgical Department of Haydarpasa Military Hospital in Istanbul. Dr. Kanpolat received his medical degree from Ankara University, School of Medicine in 1965, and completed his residency in neurosurgery in 1973. His areas of interest include functional & stereotactic neurosurgery, pain research and surgery, movement disorders, pontocerebellar angle surgery, and science history and education.

AANS/CNS Section On Pediatric Neurological Surgery

Kenneth Shulman Award

Amanda Muhs Saratsis, MD, is currently a fifth-year neurosurgery resident at Georgetown University Hospital, and is studying the biology of pediatric brainstem glioma in a laboratory at the Center for Genetic Medicine Research at Children’s National Medical Center in Washington, D.C.

Dr. Saratsis earned her medical degree from the University of Illinois at Chicago College of Medicine, where she received the Warren H. Cole Surgery Society Award for Excellence in Surgery, as well as nominations to the Gold Humanism and Alpha Omega Alpha Honor Societies. A Chicago native, Dr. Saratsis attended Northwestern University as an undergrad and departmental honors in molecular biology and psychology with a minor in philosophy, while also studying piano performance at both the Northwestern University School of Music and the Chicago Music Institute.

Upon completion of her residency, Dr. Saratsis plans to pursue fellowship training in pediatric neurosurgery.

Hydrocephalus Association Award

Ramin Eskandari, MD, is currently a PGY-5 neurosurgery resident at the University of Utah School of Medicine in Salt Lake City. He received a Bachelor of Science degree in biology from the University of Michigan, Ann Arbor. After receiving his undergraduate degree, he worked at a children’s sports camp in Switzerland, traveled internationally, and completed a Master in Medical Science prior to attending medical school. Dr. Eskandari received his medical degree from Wayne State University in Detroit.

Dr. Ramin has participated in research projects on artificial vision and hydrocephalus. He is interested in specializing in pediatric neurosurgery with research focusing on hydrocephalus, epilepsy and artificial neuromodulators.

Donald D. Matson Lecture

Thomas G. Luerssen, MD, FACS, FAAP, is chief of neurological surgery and chief quality officer for Surgery at Texas Children’s Hospital in Houston, Texas. He is professor of neurological surgery and director of the Pediatric Neurosurgery Program at the Baylor College of Medicine.

Dr. Luerssen received his medical degree from Indiana University in 1976 and completed his neurosurgery residency at Indiana University Medical Center. After residency, Dr. Luerssen entered private practice. His career in pediatric neurosurgery began in 1983 with fellowship training at the Children’s Hospital of Philadelphia under the direction of Luis Schut, MD.

Post fellowship, Dr. Luerssen joined the faculty at the University of California, San Diego. Subsequently, he returned to Indiana University and spent 18 years as director of the pediatric neurosurgery service at the James Whitcomb Riley Hospital for Children. In 2006, he was recruited to Texas Children’s and was named chief quality officer in 2009.
A. John Popp, MD.

While he is currently a PGY-6 resident under the leadership of American Trauma.

and on the Board of Directors of the AANS as well as the Coalition Group of the American College of Surgeons Committee on Trauma, Neurotrauma and Critical Care; chair of the Neurosurgical Specialty Committee of the American College of Surgeons Committee on Trauma; and on the Board of Directors of the AANS as well as the Coalition for American Trauma.

AANS/CNS Section On Neurotrauma And Critical Care

First Annual J. Douglas Miller Lecture

Alex B. Valadka, MD, FACS, is chief of adult neurosciences and chief of neurotrauma at Seton Brain and Spine Institute in Austin, Texas. From 2006-2009, he was professor and vice chairman of the Department of Neurosurgery at the University of Texas Medical School at Houston. He started his neurosurgical career at Baylor College of Medicine in Houston in 1993 as an assistant professor and was full professor when he left in 2006.

Dr. Valadka received his medical degree in 1987 from the University of Chicago Pritzker School of Medicine, followed by his residency in neurological surgery at the Medical College of Virginia in 1993. He received his board certification from the American Board of Neurological Surgery in 1995.

He maintains a strong clinical and research interest in neurotrauma and critical care, including numerous papers, presentations, research grants, courses, seminars, and visiting professorships. He co-edited the textbook Neurotrauma: Evidence-Based Answers to Common Questions.

Dr. Valadka is currently chair of the AANS/CNS Washington Committee. He served as chair of the AANS/CNS Section on Neurotrauma and Critical Care; chair of the Neurosurgical Specialty Group of the American College of Surgeons Committee on Trauma; and on the Board of Directors of the AANS as well as the Coalition for American Trauma.

Synthes Resident Spinal Cord Injury Award

Yi Lu, MD, is a native of Shanghai, China. He received his undergraduate degree at Fudan University, Shanghai, majoring in biochemistry. He obtained a PhD in 2002 from Albert Einstein College of Medicine in pathology, studying DNA damage repair. In 2005, he received his medical degree from Columbia University College of Physicians & Surgeons. He completed his surgical internship at Brigham & Women’s Hospital in Boston, followed by his neurosurgical residency at BWH, where he is currently a PGY-6 resident under the leadership of A. John Popp, MD.

During his residency, Dr. Lu finished a postdoctoral research fellowship in the lab of Zhigang He, PhD, BM, at Children’s Hospital Boston studying axon regeneration and spinal cord injury. His research focused on elucidating the role of PTEN deletion in central motor axon regeneration and locomotion functional recovery after severe spinal cord injury in animal models. His research is funded by grants from the Craig H. Neilsen Foundation research fellowship. Dr. Lu was also a recipient of the American College of Surgeons Ethicon Resident Research Scholar in 2009, Thrasher Research Fund Early Career Award in 2009, and William Randolph Hearst Award in 2008.

Synthes Resident Craniofacial Award

Jonathan A. Forbes, MD, is a fifth-year neurosurgery resident at Vanderbilt University Medical Center. As a Trustee Scholar at Grove City College, he majored in biochemistry and played outside linebacker for the Division III football team, where he was elected Defensive MVP in 2000 and 2001. He went on to enroll in the Air Force Health Professions Scholarship Program and attended medical school at the University of Pittsburgh.

During his neurosurgical residency, Dr. Forbes became interested in traumatic brain injury secondary to collisions in American football. He is presently working on clinical research involving helmet design with the Vanderbilt Department of Biomedical Engineering. Additionally, he is pursuing related laboratory research with the intent of evaluating the effects of tissue strain on neural physiology in an animal model of helmeted injury.

Codman 2010 Recipient

Carlo Santaguida, MD, is an intermediate level neurological resident at the University of Toronto. Dr. Santaguida received his medical degree from McGill University.

He is currently pursuing graduate studies through the Institute of Medical Science at the University of Toronto with a research focus on the basic science of traumatic brain injury, specifically the influence of mitochondrial dynamics on secondary neuronal injury. His graduate work is being performed at the Cara Phelan Centre for Trauma Research and the Toronto Western Research Institute.

Dr. Santaguida received the Canadian Institutes of Health Research Master’s award for his research. He aspires to have a future career as a surgeon-scientist, specializing in critical care and traumatic brain injury.
AANS/CNS Section On Stereotactic And Functional Neurosurgery

Philip L. Gildenberg Resident Award
Patrick Schweder, MD

AANS/CNS Section On Tumors

Preuss Award
Ganesh Rao, MD
Ganesh Rao, MD, completed his neurosurgical training at the University of Utah. During his residency, he spent two years as a postdoctoral fellow mentored by Daniel Fults, MD. His laboratory work with Dr. Fults was based on murine modeling of medulloblastoma and was performed in collaboration with Eric Holland, MD, PhD, at Memorial Sloan Kettering Cancer Center. After residency, he spent a year as a neurosurgical oncology fellow at The University of Texas MD Anderson Cancer Center and eventually joined the faculty in 2006. Dr. Rao’s research remains focused on mouse modeling of brain tumors to study signaling pathways that contribute to tumorigenesis and to evaluate novel therapeutic strategies. His research has been funded by institutional research grants and a Career Development Award as part of the Brain Tumor SPORE Program at MD Anderson.

Brainlab Community Neurosurgery Award
Leslie Nussbaum, MD, PhD, FACS
Leslie Nussbaum, MD, PhD, FACS, is the surgical director of the Healtheast Cyberknife Center and co-director of the Midwest Brain Tumor Program based at St. Joseph’s Hospital in St. Paul, Minn.

Dr. Nussbaum’s clinical practice focuses on complex brain and spinal cord tumors as well as stereotactic radiosurgery for benign intracranial disorders. In addition to her clinical responsibilities, Dr. Nussbaum has authored numerous publications and has a particular research interest in the development of novel pharmacotherapeutic approaches for the treatment of malignant brain tumors.

Integra Foundation Award
Sameer Sheth, MD, PhD
Sameer Sheth, MD, PhD, is currently a PGY-6 neurosurgery resident at Massachusetts General Hospital. His research is conducted in the laboratory of Emad Eskandar, MD. He has studied the neurophysiology of associative learning by performing single-unit recordings from the prefrontal cortex and basal ganglia in non-human primates trained in motor learning tasks.

Dr. Sheth has investigated human physiology by applying the same rigorous design and analysis paradigms used in the laboratory to human research. By taking advantage of the opportunity afforded by microelectrode recordings during deep brain stimulation and chronically implanted electrodes for epilepsy, he has studied the function of various cortical and subcortical regions, including the dorsolateral prefrontal cortex, cingulate cortex, nucleus accumbens, and subthalamic nucleus.

More recently, Dr. Sheth has utilized optical imaging in intraoperative functional mapping. This technique provides high-resolution maps of cortical function, which can be used clinically for delineating eloquent cortex, and as a basic science tool for studying functional architecture.

Dr. Sheth looks forward to combining his clinical and research interests into a practice focusing on tumor, epilepsy, and functional neurosurgery.

Stryker Neuro-Oncology Award
Arthur P. Chou, MD, PhD
Arthur P. Chou, MD, PhD, is currently a third year neurosurgery resident at the University of California, Los Angeles. He is a native of Taiwan and came to the US when he was 10 years old. He grew up in Los Angeles and received a Bachelor of Science degree in biochemistry from the University of California, Riverside in 1999. He subsequently enrolled in the Medical Scientist Training Program at the UCLA School of Medicine and received his PhD in neuroscience in 2006 and his medical degree in 2008.

Dr. Chou is currently conducting neuro-oncology research at UCLA under the mentorship of Linda Liau, MD, PhD. After residency, he plans to pursue a career in academic neurosurgery focusing on malignant brain tumors.

Leksell Radiosurgery Award
Robert M. Starke, MD, MSc
Robert M. Starke, MD, MSc, is a second year neurosurgery resident at the University of Virginia, Charlottesville. Dr. Starke graduated magna cum laude from Princeton University. He received his medical degree from Albert Einstein College of Medicine with distinction in neuroscience research as a member of the Alpha Omega Alpha Society. He also completed a Master of Medical Science with distinction in clinical and translational research as part of the NIH Clinical Research Training Program.

During his time at Columbia University, Dr. Starke conducted basic science, translational, and clinical research in neurovascular surgery and oncology. As part of this research, he was awarded the Alpha Omega Alpha Research Fellowship, the Prize for Overall Excellence
in Clinical Research at the National Research Forum, and the award for Outstanding Basic Science Presentation at the Eastern-Atlantic Research Forum.

Dr. Starke’s oncology research interests include minimally invasive intracranial and spinal neurosurgery. His vascular research interests include subarachnoid hemorrhage, intracerebral hemorrhage, cerebral ischemia, and vasospasm. Upon completion of his neurosurgical training, he intends to pursue a fellowship in complex cerebrovascular and skull base surgery.

**National Brain Tumor Society Mahaley Award**

Zachary Litvack, MD, is currently associate surgeon at Brigham and Women’s Hospital, and clinical fellow at Harvard Medical School. He will complete his combined fellowship in Endoscopic Pituitary & Anterior Skull Base Surgery and Neuroendocrinology under the direction of Edward R. Laws Jr., MD, FACS, in 2011.

Dr. Litvack graduated in 2003 from Brown University’s Program in Liberal Medical Education, receiving a ScB in Molecular Biology as well as his medical degree. After his internship in general surgery at Oregon Health and Science University, he completed his residency in neurological surgery at OHSU under Kim J. Burchiel, MD. During his residency, he completed a two-year graduate program in clinical research, and was awarded his Masters degree in June 2010.

Dr. Litvack’s research interests include neuroimaging and intraoperative imaging of tumor, neurocritical care, dural repair and regeneration, and health services and outcomes. His is one of the 2010-2011 NREF Clinical Fellows. He is past recipient of the Robert Florin Award for Socioeconomic Research. He currently serves on the AANS/CNS Washington Committee as the CSF fellow, and is assistant editor for the CNS SANS Lifelong Learning.

**Springer Journal of Neuro-Oncology Award**

Griff Harsh IV, MD, is professor and vice chairman of the Department of Neurosurgery at Stanford Medical School. He directs the Neurosurgery Residency Training Program, the Stanford Pituitary Center and Surgical Neuro-oncology at the Stanford Cancer Center.

Dr. Harsh received his undergraduate degree summa cum laude from Harvard College, his Master of Arts as a Rhodes Scholar from Oxford University, and his medical degree from Harvard Medical School. He completed his neurosurgery residency and served on the faculty at the University of California, San Francisco before joining the faculty of Harvard Medical School where he was executive director of the MGH Brain Tumor Center.

His clinical focus is the treatment of tumors of the brain, pituitary gland and skull base with microsurgery, radiosurgery, and endoscopic surgery. As an HHMI Visiting Scientist at UCSF, Dr. Harsh investigated oncogenic growth factors in brain tumor development. He continued this work at MGH/Harvard and then at Stanford, with Markus Bredel, MD, PhD, his primary co-author on the current study.

His research has been supported by the Neurosurgery Research and Education Foundation (NREF) and K08 and P01 awards from the NIH. He currently holds an R25 NIH grant for resident training in neurosurgical research. He has served as chair of the NREF since 2007.

**American Brain Tumor Association Young Investigator Award**

Ashok R. Asthagiri, MD, is an assistant clinical investigator in the Surgical Neurology Branch at the National Institutes of Health. He received his undergraduate degree from the University of Akron and his medical degree from the Northeastern Ohio Universities College of Medicine in Rootstown, Ohio. He completed neurosurgical training at the University of Virginia in Charlottesville, Va. and Auckland City Hospital in Auckland, New Zealand. During residency, he completed an en-folded neuropathology fellowship at the University of Virginia. He joined the Surgical Neurology Branch at the National Institutes of Health in 2007.

His research and clinical practice revolve around benign tumors of the central and peripheral nervous system. He is the principal investigator of several clinical protocols on Neurofibromatosis type 2 aimed at understanding the natural history of this disease. He is also actively involved with clinical studies on central nervous system tumors in von Hippel-Lindau disease, another heritable tumor predisposition syndrome. His laboratory efforts are aimed at improving drug delivery through utilization of phage display technology and translational projects that help delineate the parameters of convection-enhanced delivery.

**Synthes Skull Base Award**

Joshua Wind, MD, is a fifth-year neurosurgery resident at George Washington University in Washington, D.C. He completed his undergraduate studies at the College of William and Mary and obtained his medical degree at Loyola University in Chicago. He is currently a clinical fellow in the Surgical Neurology Branch within the National Institute of Neurological Disorders and Stroke of the National Institutes of Health.
Ronald L. Bittner Award

Isaac Yang, MD, is an assistant professor at the University of California, Los Angeles Department of Neurosurgery and a principal investigator in the UCLA Malignant Brain Tumor Laboratory under the mentorship of Linda Liau, MD, PhD. He is currently investigating the utilization of nanoparticles and nanotechnology for application in brain tumor immunotherapy and vaccines.

Dr. Yang received his medical degree from the UCLA Geffen School of Medicine. He completed his neurosurgical residency at the University of California, San Francisco, as well as an NRSA NIH funded F32 post doctoral brain tumor research fellowship in the lab of Andrew Parsa, MD, PhD.

Clinically, Dr. Yang has focused primarily on glioblastoma and skull base brain tumors. His research efforts have examined antigen expression and manipulation of the immune response to glioblastoma. He has published over 50 publications in peer-reviewed journals and has authored over half a dozen book chapters.

Dr. Yang has been the recipient of several distinguished regional and national awards recognizing his research. Among these are the UCSF Clinical and Translational Scientist Training Award, the CNS Dandy Clinical Research Fellowship, the UCSF Medical Center 2010 Exceptional Physician Award, the AANS Integra Brain Tumor Research Award, San Francisco Neurological Society Edwin Boldrey Award for Basic Science Research, American Academy of Neurological and Orthopedic Surgeons Research Award, Kaiser Award for Clinical Research, and the AANS Leksell Radiosurgery Award.

AANS Section On History

Vesalius Award

Abhishek Agrawal, MD, is currently a ‘Spetzler Fellow’ actively pursuing his neurosurgical research at the Barrow Neurological Institute under the mentorship of Mark Preul, MD.

In 2006, after completing his neurosurgical residency training in New Delhi, India, Dr. Agrawal was selected for a clinical fellowship in advanced vascular neurosurgery under the tutelage of Prof. Sano in Japan.

Dr. Agrawal plans to specialize in cerebrovascular/skull base neurosurgery. He has pursued neurosurgical research with a focus on that area that has been published in several peer-reviewed publications. He continues active research in several areas of neurosurgery including morphometric and quantitative analysis of different skull-base approaches. He is also working on Tensor Tractography using 7T MRI, and on creating a virtual 3D brain model.

To date, Dr. Agrawal has published more than 30 peer-reviewed articles and chapters in books and was coauthor of a neurosurgical textbook. He has served as a reviewer of many international journals and serves as vice coordinating editor of the Asian Journal of Neurosurgery.

AANS/CNS Section On Peripheral Nerve

Integra Foundation David G. Kline Lectureship

John E. McGillicuddy, MD, FACS, received a Bachelor of Medical Science degree from Dartmouth Medical School in 1964 and his medical degree from Harvard Medical School in 1966. After two years of general surgery training at the Medical College of Virginia, he served two years in the U.S. Navy, including one year with the First Marine Division in Vietnam. He began his neurosurgery training at the University of Michigan in 1970 under Richard C. Schneider, MD. After completing his residency in 1974, he joined the faculty there and remained there until his retirement in 2007.

Dr. McGillicuddy’s initial clinical and research interests were cerebral blood flow, vasospasm, and cerebral ischemia. Later he shifted his emphasis to reconstructive spinal surgery and helped establish the Spinal Surgery Program at Michigan with Steven Papadopoulos, MD. Throughout his career, Dr. McGillicuddy had a keen interest and focus on peripheral nerve surgery. The assistance and direction of David G. Kline, MD, and Alan Hudson, MD, were extremely important in the development and progression of this interest. In his last years of active practice, Dr. McGillicuddy helped establish a comprehensive multidisciplinary Peripheral Nerve Surgery Program at Michigan, with a special concentration on birth-related brachial plexus palsies.

Dr. McGillicuddy was president of University Neurosurgeons (2000-2001) and vice president of the Neurosurgical Society of America (1999-2000). He was a member of the Executive Committee of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves (2005-2008).

AANS/CNS Cerebrovascular Section

Donaghy Lecture

Daniel L. Barrow, MD, is the MBNA/Bowman Professor and Chairman of the Department of Neurosurgery and Director of the Emory Stroke Center at Emory University School of Medicine.

Dr. Barrow graduated magna cum laude from Westminster College and received his medical degree from Southern Illinois University School of Medicine. He completed his general surgery internship and neurosurgical residency at Emory University Affiliated Hospitals and obtained his neurology training at Massachusetts General Hospital. Upon finishing his neurosurgical residency, he completed a fellowship in cerebrovascular surgery at the Mayo Clinic and obtained additional training at the Barrow Neurological Institute.
Dr. Barrow has authored more than 250 scientific articles and chapters in medical textbooks. He has authored or edited fourteen monographs, including a major textbook on neurosurgery, *The Practice of Neurosurgery*. He has been a visiting professor at major universities throughout North America, Europe and Asia. His research interests focus on cerebrovascular disease and stroke.

He is the recipient of numerous awards including the Distinguished Alumnus Award from Southern Illinois University School of Medicine and the Alumni Achievement Award from Westminster College. He was the 2010 Honored Guest of the Congress of Neurological Surgeons.

Dr. Barrow has been active in organized neurosurgery, holding a number of leadership and editorial positions. He is a director of the American Board of Neurological Surgery and currently serves as secretary of the Board. He is past vice president and current treasurer of the American Academy of Neurological Surgeons. He was on the Executive Committee of the Congress of Neurological Surgeons from 1989-2001. He served as president of the Georgia Neurosurgical Society and member of the AANS/CNS Washington Committee.


**Yasargil Lecture**

Professor M. Gazi Yaşargil was born in 1925 in Lice, Turkey. In 1953, he began his neurosurgical residency at the University of Zürich, under Professor Hugo Krayenbühl. From 1965 to 1967 he was a research fellow in microvascular surgery at the University of Vermont in Burlington, under Professor R. M. Peardon Donaghy, where he learned microsurgical techniques, which were then applied to the cerebral arteries on animals in the laboratory.

After returning to Zurich, he was instrumental in shaping the future development of microneurosurgery, applying microtechniques to the entire field of this specialty. His extensive experiences and surgical results are summarized in his six-volume monograph *Microneurosurgery*.

In 1994, Professor Yaşargil was appointed professor of Neurosurgery at the University of Arkansas for Medical Sciences in Little Rock, where he continues to be active in microneurosurgical clinical practice, research, and teaching.

**Synthes Cerebrovascular Section Resident/Fellow Award**

Robert M. Starke, MD, MSc, is a second year neurosurgery resident at the University of Virginia, Charlottesville. Dr. Starke graduated magna cum laude from Princeton University. He received his medical degree from Albert Einstein College of Medicine with distinction in neuroscience research as a member of the Alpha Omega Alpha Society. He also completed a Master of Medical Science with distinction in clinical and translational research as part of the NIH Clinical Research Training Program.

During his time at Columbia University, Dr. Starke conducted basic science, translational, and clinical research in neurovascular surgery and oncology. As part of this research, he was awarded the Alpha Omega Alpha Research Fellowship, the Prize for Overall Excellence in Clinical Research at the National Research Forum, and the award for Outstanding Basic Science Presentation at the Eastern-Atlantic Research Forum.

Dr. Starke’s oncology research interests include minimally invasive intracranial and spinal neurosurgery. His vascular research interests include subarachnoid hemorrhage, intracerebral hemorrhage, cerebral ischemia, and vasospasm. Upon completion of his neurosurgical training, he intends to pursue a fellowship in complex cerebrovascular and skull base surgery.

**AANS Nursing Scholarship**

The AANS Nursing Scholarship is awarded annually in an effort to provide funding for a nurse to attend the AANS Annual Scientific Meeting. The scholarship is open to member and non-member nurses.

Catherine Berg, ACNP, works at the California Pacific Medical Center in San Francisco, Calif. She is a physician extender working in collaboration with the Stroke/Neurocritical Care Team and the Pulmonary/Critical Care physician. In this role, she helps evaluate and manage the treatment of neurocritically ill patients.
AANS OPENING RECEPTION

Sunday, April 10
6:30 – 8:30 PM
INVESCO Field

Bussing will be available from all official AANS hotels starting at 6:15 until 9:00 PM

INVESCO Field at Mile High is the home of championship events and the American Association of Neurological Surgeons Opening Reception will be no different. You will have the opportunity to experience the newly renovated club level with fantastic views of Downtown Denver, while also enjoying the amazing sunset that only the Mile High City can provide. Savory food and tasty beverages will compliment this evening as guests are truly introduced to the “Gateway to the West.”

Sports-Related Head Injury Prevention

The 2011 National Neurosurgery Awareness Week theme is There’s Always Another Game, But You Only Have One Brain. NNAW is held annually in celebration of the start of AANS Annual Scientific Meetings. Leading off this year’s activities on Sunday afternoon is the AANS ThinkFirst Community Kids Bike Helmet Day, in which Denver-area children will be fitted with free bike helmets. Later that evening, the first ever sports-related themed Opening Reception will take place at INVESCO Field. Among the planned activities are stations devoted to football, skiing and snowboarding, bicycling, summer sports, and ice hockey; streaming video presentations; special exhibits; and sports celebrity appearances.

Stadium Tours

Go behind the scenes of INVESCO Field and see how this state-of-the-art stadium operates on a day to day basis. Each guided tour can accommodate 30 guests at a time for 30 minutes per tour. Guests will see the Visitors’ Locker Room, Keg Room, Thunder’s Stall, a private suite, Home Media Room and receive an overview of the field.

Miles the Mascot

The perfect photo op!! Miles will greet you upon arrival at INVESCO on his Four Wheeler. He plays it safe, but Miles loves to go fast, do doughnuts and jump curbs for your entertainment. The energy and excitement go through the roof when Miles is present and he loves group and individual photos!! He’s happy to autograph pictures for you and friends alike!

Punt, Pass & Catch

Play ball on the field of INVESCO!! INVESCO Field will have yardage markers set up along the field sidelines and guests will have the opportunity to Punt and Pass. INVESCO Guest Relations staff will write down the distances for each guest and prizes will be awarded based on longest and shortest punt or pass. The catch station will have an NFL Jugs Machine set up to launch balls down the sidelines for guests.

Stadium Stampeade

Be part of the Stadium Stampeade! With Miles leading the way, be energized as the Six Piece Stadium Stampeade welcome your arrival.

AANS International Reception & Award Program

Monday, April 11
7:30–9:00 PM
Capitol Ballrooms 1, 2 & 3, Hyatt Regency Denver

Join leaders from the AANS, international neurosurgical organizations, and special dignitaries speaking in this year’s Sugita Symposium during this year’s International Reception. In addition to connecting with colleagues from around the globe, attendees may also meet this year’s International Lifetime Recognition Award recipient: Shigeaki Kobayashi, MD, PhD from Nagano, Japan. This prestigious award honors Dr. Kobayashi for his lifetime of invaluable contributions to neurosurgery in his home country of Japan, as well as his activity in international neurosurgery.

The AANS will also recognize other international award and fellowship recipients. There is no fee to attend; however a ticket is required which may be obtained at registration. The American Association of Neurological Surgeons welcomes all annual scientific meeting registered attendees – especially our colleagues from outside the United States.

If you are an officer in a neurosurgical organization outside the United States, we will acknowledge you at the event. If you did not indicate your leadership position when you registered for the meeting, please alert staff during on-site registration by noon on Sunday so that the AANS can acknowledge you at the reception.

Attire for the event is Business Attire.

More information on award and fellowship recipients is posted on the AANS website in the “International Initiatives” tab at www.AANS.org.

AANS History Section Dinner

Monday, April 11
6:30 – 9:30 PM
Mile High Station

$150 per person

The AANS Section on the History of Neurological Surgery will host the annual dinner at the Mile High Station. Located adjacent to the new INVESCO Field at Mile High, the Mile High Station occupies the former Midwest Steel and Ironworks building. The original building dates back to the turn of the century (1897). At that time, the building was a Denver landmark employing hundreds of ironworkers and craftsmen. During the early 1900’s, workers built and shipped large-scale ship sections for use by the U.S. Navy during World War II. Based on the significance of the building and the important role that it played in Colorado’s history, the building is under consideration as a Historic building by the State of Colorado’s historic preservation Officer.
The evening will begin with a complimentary cocktail reception providing you with complete access to the Mile High Station. Docents will be available to explain in greater detail this historic venue.

Recipient of several prestigious prizes in history, Thomas G. Andrews, MD, will be giving the Setti Rengachary Memorial Lecture: Killing for Coal: Energy, Work, and Violence on the Colorado Coal-Mining Frontier. This promises to be an unusual, insightful, and entertaining talk that will leave us with an unforgettable glimpse into the settling industry of Colorado, with impacts for our modern day.

Transportation will be provided to and from the Hyatt Regency Denver (Headquarters Hotel) beginning at 6:15 PM.

**WINS Breakfast**

**Wednesday, April 13**  
**Hyatt Regency Denver**  
**Mineral Halls D & E**  
**7:30 – 9:00 AM**  
For the fifth year, the Women in Neurosurgery organization is providing AANS Annual Meeting attendees an opportunity to network at a breakfast reception featuring the Louise Eisenhardt Lecturer as honored guest. If you would like to purchase tickets, please go to the Special Assistance Desk in Registration.

**Neurosurgical Top Gun Competition**

**Monday, April 11 – Wednesday, April 13**  
**Booth #2327**  
**Exhibit Halls A, B & C, Colorado Convention Center**  
**9:00 AM – 4:00 PM**  
For the sixth consecutive year, the Young Neurosurgeons Committee will present a competition for residents and fellows, located in booth #2327 in the exhibit hall. This three day event will include stations such as image guided lumbar pedicle screw, bone scalp and virtual thoracic vertebroplasty. In addition, we are adding two new exciting stations that include a brain tumor resection and ventriculostomy simulator. Each participant has one opportunity at each intricate and demanding surgical station and is scored on his or her performance. The resident or fellow with the best combined score will be awarded the distinct honor of being the Neurosurgical Top Gun and a prize of $1000. Be one of the first 50 participants and receive a Top Gun t-shirt!

**Kenichiro Sugita International Symposium**

**Monday, April 11**  
**2:00 – 5:45 PM**  
**Rooms 705, 707, 709, Colorado Convention Center**  
The AANS-Sugita International Symposium will bring together neurosurgeons from around the world who were influenced by the teachings of Professor Kenichiro Sugita. In his lifetime, Dr. Sugita was arguably the most influential and innovative neurosurgeon in Japan. He devoted himself to the treatment of vascular neurological conditions and pioneered the use of stereotactic head frames, aneurysm dissectors, and novel aneurysm clips. He was Professor and Chair of Neurosurgery at Shinshu University in Matsumoto Japan (1978–1988), and at Nagoya University (1988–1994). Given his devotion to teaching neurosurgical trainees, and his interests in international neurosurgery, he established a scholarship program which enabled young neurosurgeons from around the world to travel to Nagoya to learn from his complex skull base, and vascular neurosurgical cases. A superb scientific program has been created to honor the name of and celebrate in the career of Professor Sugita. Neurosurgeons of international repute will speak at the symposium, and describe the ways in which their careers were influenced by Professor Sugita.

**NREF Research Symposium**

**Tuesday, April 12**  
**Capitol Ballrooms 1 & 2**  
**Hyatt Regency Denver**  
**4:00 – 5:00 PM**  
**Invitation Only**

The NREF will host the fourth annual Research Symposium for Foundation contributors and grant recipients. Selected awardees that have recently completed their research are invited to present their results. Members of the NREF Scientific Advisory Committee, led by Edward H. Oldfield, MD, will moderate the session. The symposium is intended to foster collegial ties among awardees and expose their work to academic faculty and department chairs. It will also afford NREF contributors the chance to see the impact of their support and the difference it has made to the residents and young faculty members who received research grants. Individual donors, corporate sponsors, department chairs and clinical sponsors, along with current and past NREF grant recipients are among the audience invited to attend this important research-related event.

**NREF Donor And Grant Reception**

**Tuesday, April 12**  
**Capitol Ballroom 3**  
**Hyatt Regency Denver**  
**5:30 – 7:00 PM**  
**Invitation Only**

Each year, the Neurosurgery Research and Education Foundation (NREF) hosts the NREF Donor and Grant Recipient Reception. Held during the AANS Annual Scientific Meeting, the NREF Reception is an “invitation only” event, whereby Cushing Donor level supporters ($1000 and up) and corporate supporters are recognized for their generous support and are given the opportunity to meet and personally congratulate incoming and outgoing Research Fellows and Young Clinician Investigators. To ensure recognition among this benevolent group and amongst the invitees to the NREF Reception, make your donation to the NREF through the AANS Annual Scientific Meeting Registration Form, AANS website www.AANS.org/Research), at registration or stop by the AANS Resource Center, booth #2026.
Nurse & Physician Extenders’ Programs

Watch for this icon throughout the Program Guide. It indicates sessions that were designed with you in mind.

Neuroscience Nurse, Nurse Practitioner and Physician Assistant Activities

The Scientific Program Committee has organized a comprehensive selection of scientific topics that will be presented. All registered nurses, nurse practitioners, and physician assistants are encouraged to attend any of the Breakfast Seminars that are offered each morning, Monday through Wednesday; and the Practical Clinics on Saturday and Sunday.

Six practical clinics, twenty breakfast seminars and one afternoon session are being offered, which are listed below, as well as the Mid-level Practitioner Luncheon:

PRACTICAL CLINICS
009 Anatomy and Surgical Approaches to the Spine
017 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base
022 Critical Care Procedures for the Neurosurgical Mid-level Practitioner
024 Head Trauma: Current Treatments and Controversies with Hands-on Practical Session in Brain Monitoring
026 Spinal Stabilization, Fusion and Instrumentations: Biomechanics and Techniques
030 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon

BREAKFAST SEMINARS
103 Coil vs. Clip for Intracranial Aneurysms
107 Cervical Spondylotic Myelopathy
117 Professional Issues: Challenges and Opportunities for the Neurosurgical Mid-Level Practitioner
119 Return to Play after Sports Injury
121 Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery
203 Lumbar Spine Fusion
209 Controversies in the Management of Intracerebral Hematomas
212 Current Use of Biologic Graft Extenders for Spinal Fusion
213 Management of Spinal Axis Trauma
219 Management of Acute Spinal Cord Injury
221 Contemporary Management for Adult Hydrocephalus
302 Multidisciplinary Management of Cerebral AVMs
304 Foraminal and Far Lateral Lumbar Disc Herniations

Monday, April 11
1:00 – 2:45 PM
Fee: $25
Rooms 710, 712, Colorado Convention Center

MODERATOR:
Twyla Lay, NP, MS

Epigenetics and Longevity—How to Live a Long, Healthy and Balanced Life

SPEAKER:
Joseph Charles Maroon, MD

Mid-level Practitioners and Nurses will meet to debate and discuss the uniqueness of their roles within the realm of neurological surgery as it relates to procedural techniques, prescribing/furnishing practices, educational preparation, exploration of group dynamics and promotion of interdisciplinary communication, billing for services, identification of barriers and challenges to practice.

This lecture is intended to review the topic of human longevity and specifically target past theories of limits to human lifespan, current research in this area and how advances in the study of the genetic controls of cellular apoptosis, along with the sequencing of the human genetic code which now can allow for specific targeted interventions to improve human longevity.

These targeted interventions include calorie restriction and the use of naturally occurring molecules, such as resveratrol, can alter human DNA translation, enhance cellular function, and improve human longevity and health.

Health practitioners will receive insight into advance research that may soon provide specific techniques to improved human longevity and health.

LEARNING OBJECTIVES:
• Differentiate between various methods of mid-level practice
• Discuss current challenges for the mid-level provider practicing within a neurological surgery setting
• Examine the topic of human longevity and limits to human lifespan
• Review the study of the genetic controls of cellular apoptosis
• Explain how calorie restriction and the use of naturally occurring molecules can improve human longevity and health
Tuesday, April 12
2:00 – 5:00 PM
Fee: $100
Room 401, Colorado Convention Center

MODERATOR:
Twyla Lay, NP, MS

SPEAKERS:
Tracey Anderson
Rocco A. Armonda, MD
Mathieu Laroche, MD
Geoffrey T. Manley, MD, PhD
Shirley I. Stiver, MD, PhD

This course will focus on specific decision making challenges that the Neurotrauma clinician faces in caring for the traumatically injured patient. A case based didactic will be used to explore the pathophysiologic changes and the significance of goal directed therapy. The course will allow participants to gain important insight into how and why various management strategies are instituted. Topics to be reviewed include; anti-coagulation in the setting of TBI, multi-modality monitoring, traumatic vasospasm, a comparison of hyperosmolar therapies, and unrecognized complications following decompressive hemicraniectomy.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss reversal and resumption of anti-coagulants in the setting of traumatic brain injury
• Identify the signs and symptoms, methods of prevention and treatment of vasospasm in acute traumatic brain injury
• Contrast the hyperosmolar agents used for the treatment of intracranial hypertension
• Discuss multi-modality monitoring and its use in goal directed therapy for the treatment of traumatic brain injury
• Express the benefits and potential complications of performing a decompressive hemicraniectomy

Not A Member of AANS
RNs, NPs, and PAs are encouraged to become AANS members in the Associate category. Requirements include proof of certification and letters of recommendation from three AANS voting members. For a list of member benefits and access to the online application, please go to http://www.aans.org/en/Members/Membership%20Requirements.aspx
Candidate (Resident, Fellow) and Medical Student Activities

**CANDIDATE AND MEDICAL STUDENT ACTIVITIES**

Watch for this icon throughout the Program Guide. It indicates sessions that were designed with you in mind.

**Candidate’s Note**

Neurosurgical residents and fellows in North America receive free Candidate membership in the AANS! Visit the AANS Resource Center in the Exhibit Hall to learn more about membership benefits, or visit http://www.aans.org/Young%20Neurosurgeons/Residents/Resident%20Membership.aspx.

**International Candidate (Resident/Fellow)**

This membership category offers membership to residents or fellows who are enrolled in a verifiable non-North American neurosurgical training program. International Candidate Members may request transfer to International member status with the submission of a copy of their certification documentation following training. For more information, please visit the AANS Resource Center in the Exhibit Hall or the membership area of www.AANS.org.

**Marshal’s Program/Office**

Again this year, annual meeting volunteers can participate in another innovative AANS Annual Scientific Meeting, with content delivered and accessible by the iPod touch®.

For those already signed up to Marshal, please report to the Marshal Office at least 30 minutes prior to your scheduled time.

Room 711, Colorado Convention Center

**Sessions For Candidates and Medical Students**

Sixteen exclusive practical clinics and fourteen breakfast seminars are being offered complimentary to candidates and medical students which are listed below:

**PRACTICAL CLINICS**

- 003 Microsurgical Management of Intracranial Aneurysms: Site Specific Surgical Anatomy, Operative Intervention and Complication Management
- 004 3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base
- 005 Practical and Technical Aspects of Transphenoidal Surgery
- 006 Coding, Compliance and Revenue Issues in Spine Coding
- 007 Update on Malignant Brain Tumors for the General Neurosurgeon
- 016 Minimally Invasive Treatment of Anterior Cranial Base Lesions
- 017 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base
- 018 Thoracic and Lumbar Stabilization and Fusion: Indications and Complications
- 020 Interventional Neurovascular Disease: Avoidance and Management Complication
- 021 Coding, Compliance and Revenue Issues in Cranial, Non-Spine and E&M Coding
- 023 Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation
- 026 Spinal Stabilization, Fusion and Instrumentations: Biomechanics and Techniques
- 027 Cranial Radiosurgery
- 030 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon
- 031 Choosing and Developing a Neurosurgical Practice
- 032 Operative Nuances for Cranial and Skull Base Procedures: A Cadaveric and Case-based Microsurgical 3-D Video Presentation
- 033 Brain Mapping and Awake Mapping Techniques
- 034 Update on Spinal Radiosurgery

**BREAKFAST SEMINARS**

- 103 Coil vs. Clip for Intracranial Aneurysms
- 104 Peripheral Nerve Entrapment Syndromes
- 108 Functional Neurosurgery for Psychiatric Illness
- 111 Beginning Your Academic Career: Answers to Your Questions
- 112 Neuromodulation for Chronic Pain
- 113 Using Stereoscopic 3-D Video Recording in Neurosurgery Practice and Education
- 203 Lumbar Spine Fusion
- 210 Advances in Carotid Disease: Surgery vs. Endovascular Therapy
- 213 Management of Spinal Axis Trauma
- 218 Getting the Most Out of Your Residency
- 302 Multidisciplinary Management of Cerebral AVMs
- 309 Management of Vasospasm
- 311 Intramedullary Spinal Cord Tumors
- 317 The Spectrum of Adjuvant Therapy for Brain Tumors
Resident Mentoring Reception
Sunday, April 10
5:45 – 6:30 PM
Capitol Ballroom 2
Hyatt Regency Denver
Invitation Only

Neurosurgical Top Gun Competition
Monday, April 11 – Wednesday, April 13
Booth #2327
Exhibit Halls A, B & C, Colorado Convention Center
9:00 AM – 4:00 PM

For the sixth consecutive year, the Young Neurosurgeons Committee will offer a competition for candidates (residents and fellows) located in booth #2327 in the exhibit hall. This three-day event will include stations with image guided lumbar pedicle screw, bone scalpel, virtual thoracic vertebroplasty and virtual ventriculostomy. Each participant has one opportunity at each intricate and demanding surgical station and is scored on his or her performance. The resident or fellow with the best score will be awarded the distinct honor of being the Neurosurgical Top Gun and a prize of $1000. Be one of the first 50 participants and receive a Top Gun t-shirt!

127 YNS Luncheon C&MS
Monday, April 11, 1:00 – 2:45 PM
Rooms 702, 704, 706, Colorado Convention Center
Registration is required for this No Fee event
MODERATOR:
J. Bradley Bellotte, MD

PANELISTS:
Karin M. Muraszko, MD; Michael Y. Oh, MD; Gail L. Rosseau, MD; B. Gregory Thompson Jr., MD

DESCRIPTION:
Come join the AANS Young Neurosurgeons’ committee as they celebrate 20 years of service. Hear how today’s leaders became established. Find out how tomorrow’s leaders are shaping neurosurgery. Learn about the impact that young neurosurgeons can make. Guests Drs. Gail L. Rosseau, Karin Muraszko, B. Gregory Thompson Jr. and Michael Y. Oh have been invited to give their perspectives on what it meant to be part of the Young Neurosurgeons Committee and how you can make an impact in the AANS and neurosurgery.
AANS Resource Center – Your Connection to Professional Success

Monday, April 11 – Wednesday, April 13
Booth #2026
Exhibit Halls A, B & C, Colorado Convention Center
9:00 AM – 4:00 PM

All the resources an AANS Annual Scientific Meeting attendee needs will be in one place. Join us in the AANS Resource Center, booth #2026, for networking, learning, socializing or just a cup of coffee. Our publications, products and services will be available, along with the opportunity to speak with our education staff about CME, webinars and more. Also represented will be the Journal of Neurosurgery, the Neurosurgery Research and Education Foundation, AANS Online Career Center and more.

Advancing your career

Let the AANS assist you in finding that new professional challenge you've been seeking. Visit the AANS Online Career Center and take advantage of the AANS Healthcare Event Connection. Whether you're actively searching for a new opportunity or not, we've got information to help you advance your career.

The latest information

Our highly acclaimed Journals of Neurosurgery can help advance your clinical knowledge. Learn more about the latest clinical articles and ways to make the online Journals more valuable to your practice. View the new JNS mobile platform or find out how you can publish your articles in the Journal as well.

Neurosurgery Research and Education Foundation

The NREF remains committed to its mission in providing private, non-governmental funding for research training in the neurosciences for residents and young clinicians. Learn more about the latest research, various grants available and how to participate in planned giving initiatives. Your support is needed to expand the innovative research that will make a difference in the lives of thousands.

AANS Publications

Visit our bookstore for AANS, AANS-Thieme co-published titles and other items.

AANSCodingToday.com

The AANS has partnered with Physician Reimbursement Systems to offer AANS members technological solutions to difficult practice issues – especially coding and billing. Speak to representatives from AANSCodingToday.com to discuss access to a comprehensive, easy-to-use online claims coding tool designed to assist physicians with the constant changes in claims coding and billing rules.

Joining the AANS

Not yet an AANS member? We can help! Complete an application today to take advantage of our many member benefits. Need to change your contact information? We can do that too!

Be sure to visit the AANS Resource Center, booth #2026, located in the Exhibit Hall of the Colorado Convention Center.

Maintenance of Certification

Check out our educational programs, including Master Series On-Demand CME, self-study education and practice management courses which are integral tools for meeting the AANS MOC requirements.

Patient Education

COMING SOON! Our latest edition to our impressive history in patient education brochures is A Patients Guide to Minimally Invasive Spine Surgery. This new brochure examines conditions where minimally invasive surgery would be beneficial, discusses the specific techniques developed for MIS surgery and, as with all the patient education brochures, explains the neurosurgeon’s role in treatment, their qualifications as well as a glossary of terms to further educate the patient about their condition.

Member Benefits through AANS Partner Programs

Members have the advantage of programs that are AANS-reviewed and often offer advantages such as preferred member pricing or exclusive services. The representatives of the following AANS Partner Programs will be in attendance on the exhibit floor:

NextGen Healthcare – NextGen provides electronic health record (EHR) and health information exchange (HIE) solutions for hospitals, health systems, physician practices and other healthcare organizations. Visit with representatives at their booth #2033 in the exhibit hall.
Thieme – Thieme Medical Publishers is the official neurosurgical book publisher of the AANS and has assumed distribution of over 80 published titles. AANS members receive a 10 percent discount on AANS/Thieme co-published books. Visit their booth #1732 to see the latest releases.

The Rhoton Collection
The AANS is pleased to present The Rhoton Collection, a compilation of three dimensional anatomy presentations developed by internationally renowned surgeon and educator Dr. Albert Rhoton Jr. Carefully crafted over many years, this unique format preserves the stunning beauty of these meticulously prepared lectures. Be sure to stop by the AANS Resource Center for more information or view the 3D presentation in the AANS 3D Video Theater, booth #948.

The first in a series of 3D lectures, the presentation includes the following skull base topics:
- Cerebellopontine Angle and Fourth Ventricle
- Cavernous Sinus and Middle Fossa
- Far Lateral Approach and Jugular Foramen
- Navigating the Temporal Bone

NeuroPoint Alliance (NPA)
Officers of NPA will make a special announcement about NPA!

Tuesday, April 12
Plenary Session, Four Seasons Ballroom
11:24 – 11:29 AM

The AANS created NeuroPoint Alliance (NPA) to coordinate a variety of national projects requiring the acquisition, processing and reporting of clinical data relevant to neurosurgical practice via web-based mechanisms.

Central to its mission is the development of a centralized and nationally coordinated effort to allow individual neurosurgeons and practice groups to measure and analyze practice patterns and outcomes through NeuroPoint Alliance. This first unprecedented program, The National Neurosurgery Quality and Outcomes Database (N2QOD), will allow any U.S. neurosurgeon, practice group, or hospital system to contribute to and access national aggregate quality and outcomes data. The N2QOD is primarily designed to serve as a continuous national clinical registry for neurosurgery. N2QOD will also provide the infrastructure required to facilitate multi-center collaboration and longitudinal data collection for specific hypothesis driven comparative effectiveness studies.

Information is available in the AANS Resource Center, Booth #2026.

2011 AANS Annual Scientific Meeting Archived Presentations
You can have 24/7, on-demand access to over 200 presentations delivered here in Denver.

Meeting Special: Order during the Meeting and Save $100!
- All presentations will be available for downloading in MP4 formats for iPad®, iTouch® or iPhone® devices
- MP3 audio files can be downloaded as a free additional feature
- New and improved online location at http://aans.peachnewmedia.com
- Content archived for two years online; CD-ROM option available
- Easy search options for subjects, titles, presenters and more.

Presentations are captured from special lecturers in plenary sessions, scientific sessions, and section sessions. The unique presentations from international neurosurgical dignitaries speaking in the Sugita International Symposium will also be included.

Topics cover general neurosurgery, cerebrovascular, neurotrauma, pain, pediatric, spine, stereotactic & functional, tumor, and neurosurgical history. Ask about special subspecialty tracks.
- Catch sessions missed due to schedule conflicts
- Revisit or download favorite presentations
- Access stellar research with discussions of neurosurgery’s new frontiers.

Stop by the AANS Resource Center, booth #2026 in the exhibit hall and order during the meeting to save $100 on the full compilation. A complete presentation list is available.
AANS SECTION ON THE HISTORY OF NEUROLOGICAL SURGERY

SUNDAY
Business Meeting
2:30 – 4:00 PM
Limestone Room, Hyatt Regency Denver

MONDAY
History Dinner
6:30 – 9:30 PM
See page 26 for details.

TUESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 2B/3B, Colorado Convention Center

AANS/CNS SECTION ON PAIN

SUNDAY
Executive Committee Meeting
4:00 – 6:00 PM
Granite Room B, Hyatt Regency Denver

TUESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 4DEF, Colorado Convention Center

AANS/CNS SECTION ON PEDIATRIC NEUROLOGICAL SURGERY

TUESDAY
Executive Committee Meeting
1:00 – 2:00 PM and 5:15 – 6:30 PM
Mineral Hall D, Hyatt Regency Denver

Section Session
2:00 – 5:30 PM
Korbel Ballroom 2A/3A, Colorado Convention Center

Business Meeting
5:31 – 6:00 PM
Korbel Ballroom 2ABC, Colorado Convention Center

Matson Lecture Reception
6:45 – 7:45 PM
Capitol Ballroom 7, Hyatt Regency Denver

AANS/CNS CEREBROVASCULAR SECTION

SUNDAY
Executive Committee Meeting
4:00 – 6:00 PM
Centennial Ballroom F, Hyatt Regency Denver

TUESDAY
Business Meeting
5:35 – 6:00 PM
Capitol Ballroom 6, Hyatt Regency Denver

WEDNESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 4ABC, Colorado Convention Center

AANS/CNS SECTION ON NEUROTRAUMA AND CRITICAL CARE

MONDAY
Executive Committee Meeting
1:00 – 2:45 PM
Centennial Ballroom B, Hyatt Regency Denver

WEDNESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 2B/3B, Colorado Convention Center

AANS/CNS SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES

MONDAY
Executive Committee Meeting
11:00 AM – 2:00 PM
Mineral Hall D, Hyatt Regency Denver

TUESDAY
Section Session (Peripheral Nerve)
2:00 – 5:30 PM
Korbel Ballroom 1DEF, Colorado Convention Center

WEDNESDAY
Section Session (Spine)
2:00 – 5:30 PM
Korbel Ballroom 4DEF, Colorado Convention Center
AANS/CNS SECTION ON STEREOTACTIC & FUNCTIONAL NEUROSURGERY

SUNDAY
Executive Committee Meeting
8:00 AM – 12:00 PM
Mineral Hall G, Hyatt Regency Denver

WEDNESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 1DEF, Colorado Convention Center

Business Meeting
5:31 – 6:00 PM
Korbel Ballroom 1DEF, Colorado Convention Center

AANS/CNS SECTION ON TUMORS

MONDAY
Executive Committee Meeting
6:30 – 8:00 AM
Centennial Ballroom F, Hyatt Regency Denver

TUESDAY
Section Session (Tumors I)
2:00 – 5:30 PM
Korbel Ballroom 1ABC, Colorado Convention Center

Business Meeting
5:31 – 5:35 PM
Korbel Ballroom 1DEF, Colorado Convention Center

WEDNESDAY
Section Session (Tumors II)
2:00 – 5:30 PM
Korbel Ballroom 1ABC, Colorado Convention Center

AANS/CSNS SOCIOECONOMIC SESSION

WEDNESDAY
Section Session
2:00 – 5:30 PM
Korbel Ballroom 2A/3A, Colorado Convention Center

WOMEN IN NEUROSURGERY (WINS)

SUNDAY
Executive Committee Meeting
11:00 AM – 2:00 PM
Mineral Hall F, Hyatt Regency Denver

WEDNESDAY
WINS Breakfast
7:30 – 9:00 AM
Mineral Halls D&E, Hyatt Regency Denver
Thursday, April 7

AANS FINANCE COMMITTEE BREAKFAST
7:00 – 8:00 AM
Granite Rooms, A, B & C, Hyatt Regency Denver

AANS FINANCE COMMITTEE MEETING
7:30 – 10:00 AM
Granite Rooms, A, B & C, Hyatt Regency Denver

AANS STRATEGIC PLANNING COMMITTEE MEETING
10:00 AM – 12:00 PM
Granite Rooms, A, B & C, Hyatt Regency Denver

AANS EXECUTIVE COMMITTEE MEETING
12:00 – 5:00 PM
Granite Rooms, A, B & C, Hyatt Regency Denver

AANS EXECUTIVE COMMITTEE WORKING LUNCH
12:00 – 1:00 PM
Granite Rooms, A, B & C, Hyatt Regency Denver

Friday, April 8

AANS BOARD OF DIRECTORS BREAKFAST
7:15 – 8:30 AM
Centennial A & B Foyer, Hyatt Regency Denver

AANS BOARD OF DIRECTORS MEETING
8:00 AM – 4:00 PM
Centennial Ballrooms, A & B, Hyatt Regency Denver

THINKFIRST CHAPTER TRAINING
8:00 AM – 3:30 PM
Capitol Ballroom 7, Hyatt Regency Denver

THINKFIRST COMMITTEE MEETING
8:00 AM – 3:30 PM
Capitol Ballroom 5, Hyatt Regency Denver

CSNS COMMUNICATIONS AND EDUCATION COMMITTEE
8:00 – 10:00 AM
Capitol Ballroom 1, Hyatt Regency Denver

CSNS INFORMATION CONFERENCE FOR NEW MEMBERS
8:00 – 8:30 AM
Mineral Hall A, Hyatt Regency Denver

CSNS YOUNG NEUROSURGEON’S REPRESENTATIVE SECTION
8:30 – 10:00 AM
Capitol Ballroom 2, Hyatt Regency Denver

CSNS EXECUTIVE COMMITTEE
10:00 – 11:00 AM
Capitol Ballroom 3, Hyatt Regency Denver

CSNS MEMBERSHIP/STATE SOCIETIES
11:00 AM – 12:00 PM
Marble Room, Hyatt Regency Denver

CSNS RESIDENT FELLOWSHIP, LEADERSHIP DEVELOPMENT AND MENTORING
11:00 AM – 12:00 PM
Granite Room B, Hyatt Regency Denver

CSNS WEBSITE SUB-COMMITTEE
11:00 AM – 12:00 PM
Limestone Room, Hyatt Regency Denver

AANS BOARD OF DIRECTORS LUNCHEON
11:45 AM – 12:45 PM
Centennial A & B Foyer, Hyatt Regency Denver

CSNS CODING AND REIMBURSEMENT COMMITTEE
12:00 – 1:30 PM
Capitol Ballroom 2, Hyatt Regency Denver

CSNS MEDICAL LEGAL COMMITTEE
12:00 – 1:30 PM
Granite Room C, Hyatt Regency Denver

CSNS MEDICAL PRACTICES COMMITTEE
12:00 – 1:30 PM
Granite Room A, Hyatt Regency Denver

CSNS NEUROTRAUMA AND EMERGENCY NEUROSURGERY COMMITTEE
12:00 – 1:30 PM
Quartz Room B, Hyatt Regency Denver

CSNS WORKFORCE COMMITTEE
12:00 – 1:30 PM
Capitol Ballroom 1, Hyatt Regency Denver

CSNS PLENARY SESSION
1:30 – 5:30 PM
Centennial Ballrooms F & G, Hyatt Regency Denver

CSNS REFERENCE COMMITTEE
3:15 – 5:30 PM
Limestone Room, Hyatt Regency Denver

AANS VOTING BOARD – EXECUTIVE SESSION
4:00 – 5:00 PM
Centennial Ballrooms A & B, Hyatt Regency Denver

CSNS RESIDENTS AND AWARDS RECEPTION
5:30 – 7:30 PM
Centennial Ballroom Foyer, Hyatt Regency Denver

Saturday, April 9

CSNS – AANS CAUCUS
7:00 – 9:00 AM
Centennial Ballroom A, Hyatt Regency Denver

CSNS – CNS CAUCUS
7:00 – 9:00 AM
Centennial Ballroom C, Hyatt Regency Denver

CSNS NORTHEAST QUADRANT
7:00 – 9:00 AM
Centennial Ballroom H, Hyatt Regency Denver
CSNS NORTHWEST QUADRANT
7:00 – 9:00 AM
Capitol Ballroom 2, Hyatt Regency Denver

CSNS SOUTHEAST QUADRANT
7:00 -9:00 AM
Capitol Ballroom 1, Hyatt Regency Denver

CSNS SOUTHWEST QUADRANT
7:00 – 9:00 AM
Centennial Ballroom B, Hyatt Regency Denver

THINKFIRST CONFERENCE
8:00 AM – 4:00 PM
Capitol Ballroom 4, Hyatt Regency Denver

CSNS PLENARY
9:00 – 11:30 AM
Centennial Ballrooms F & G, Hyatt Regency Denver

AANS INFORMATION TECHNOLOGY COMMITTEE
11:30 AM – 1:00 PM
Granite Room A, Hyatt Regency Denver

AANS LUNCHEON
11:30 AM – 1:00 PM
Centennial Ballroom D, Hyatt Regency Denver

AANS EXECUTIVE COMMITTEE
1:00 – 2:30 PM
Mineral Halls D & E, Hyatt Regency Denver

AANS/CNS JOINT OFFICERS MEETING
1:30 – 2:30 PM
Mineral Hall G, Hyatt Regency Denver

AANS MEMBER BENEFIT DEVELOPMENT COMMITTEE
1:30 – 3:00 PM
Marble Room, Hyatt Regency Denver

NEUROPOINT ALLIANCE BUSINESS COMMITTEE MEETING
1:30 – 2:30 PM
Granite Room C, Hyatt Regency Denver

AANS/CNS JOINT GUIDELINES COMMITTEE EVIDENCE-BASED MEDICINE REFRESHER COURSE
2:00 – 3:00 PM
Limestone Room, Hyatt Regency Denver

AANS/CNS JOINT GUIDELINES COMMITTEE MEETING
3:00 – 6:00 PM
Capitol Ballroom 1, Hyatt Regency Denver

NEUROSURGERYPAC BOARD MEETING
4:30 – 5:30 PM
Granite Room C, Hyatt Regency Denver

THINKFIRST RECEPTION
5:00 – 7:00 PM
Capitol Ballrooms 5, 6 & 7, Hyatt Regency Denver

Sunday, April 10

AANS LEADERSHIP ORIENTATION
8:00 – 9:30 AM
Mineral Hall F, Hyatt Regency Denver

THINKFIRST CONFERENCE
8:00 AM – 1:00 PM
Capitol Ballroom 4, Hyatt Regency Denver

AANS/CNS SECTION ON STEREOTACTIC AND FUNCTIONAL NEUROSURGERY
9:00 AM – 12:00 PM
Mineral Hall G, Hyatt Regency Denver

NEUROSURGERY SUMMIT MEETING
9:00 AM – 12:00 PM
Mineral Hall A, Hyatt Regency Denver

AANS MAINTENANCE OF CERTIFICATION/CME COMMITTEE
9:30 – 11:00 AM
Mineral Hall D, Hyatt Regency Denver

AANS INTERNATIONAL OUTREACH COMMITTEE
10:30 AM – 12:00 PM
Granite Room B, Hyatt Regency Denver

WOMEN IN NEUROSURGERY EXECUTIVE COMMITTEE
11:00 AM – 2:00 PM
Mineral Hall F, Hyatt Regency Denver

AANS PUBLIC RELATIONS COMMITTEE
11:30 AM – 1:00 PM
Limestone Room, Hyatt Regency Denver

AANS VAN WAGENEN LUNCHEON
11:30 AM – 1:30 PM
Mineral Hall E, Hyatt Regency Denver

AANS/CNS QUALITY IMPROVEMENT WORKGROUP
12:00 – 2:00 PM
Granite Room A, Hyatt Regency Denver

AANS EDUCATION AND PRACTICE MANAGEMENT COMMITTEE
12:00 – 1:30 PM
Mineral Hall D, Hyatt Regency Denver

JOURNAL OF NEUROSURGERY PUBLISHING GROUP
FINANCE COMMITTEE
12:00 – 1:00 PM
Centennial Ballroom B, Hyatt Regency Denver

JOURNAL OF NEUROSURGERY PUBLISHING GROUP
EDITORIAL BOARD MEETING
1:00 – 4:00 PM
Centennial Ballroom B, Hyatt Regency Denver

NEUROPOINT ALLIANCE BOARD OF DIRECTORS
1:00 – 2:30 PM
Mineral Hall A, Hyatt Regency Denver
ABNS EXTRA MURAL SUBSPECIALTY ITEM WRITING
1:30 – 3:30 PM
Mineral Hall B, Hyatt Regency Denver

AANS VAN WAGENEN FELLOWSHIP COMMITTEE
MEETING
2:00 – 3:00 PM
Granite Room C, Hyatt Regency Denver

SNS BOOTCAMP COMMITTEE
2:00 – 4:00 PM
Quartz Room B, Hyatt Regency Denver

AANS HISTORY SECTION BUSINESS MEETING
2:30 – 4:00 PM
Limestone Room, Hyatt Regency Denver

NEUROPOINT ALLIANCE SCIENTIFIC COMMITTEE
2:30 – 3:30 PM
Centennial Ballroom A, Hyatt Regency Denver

AANS MEMBERSHIP COMMITTEE
3:00 – 4:00 PM
Mineral Hall C, Hyatt Regency Denver

FLANC NEUROSURGEONS MEETING
3:00 – 4:00 PM
Quartz Room A, Hyatt Regency Denver

AANS JOINT SPONSORSHIP COUNCIL MEETING
3:15 – 4:15 PM
Granite Room A, Hyatt Regency Denver

NEUROSURGERY RESEARCH AND EDUCATION FOUNDATION EXECUTIVE COUNCIL MEETING
3:30 – 5:00 PM
Mineral Hall D, Hyatt Regency Denver

AANS/CNS CEREBROVASCULAR SECTION EXECUTIVE COMMITTEE
4:00 – 6:00 PM
Centennial Ballroom F, Hyatt Regency Denver

AANS/CNS SECTION ON PAIN EXECUTIVE COMMITTEE MEETING
4:00 – 6:00 PM
Granite Room B, Hyatt Regency Denver

AANS NEUROSURGEON EDITORIAL BOARD MEETING
4:00 – 5:30 PM
Mineral Hall G, Hyatt Regency Denver

AMERICAN ACADEMY OF NEUROLOGICAL SURGERY EXECUTIVE COMMITTEE MEETING
4:00 – 6:00 PM
Mineral Hall E, Hyatt Regency Denver

JOURNAL OF NEUROSURGERY RECEPTION
4:00 – 6:00 PM
Centennial Ballroom E, Hyatt Regency Denver

ACS ADVISORY COUNCIL FOR NEUROLOGICAL SURGERY
5:00 – 6:15 PM
Quartz Room B, Hyatt Regency Denver

WORLD NEUROSURGERY EDITORIAL BOARD MEETING
5:00 – 6:00 PM
Centennial Ballroom G, Hyatt Regency Denver

RESIDENT MENTORING RECEPTION
5:45 – 6:30 PM
Capitol Ballroom 2, Hyatt Regency Denver

Monday, April 11

AANS DEVELOPMENT COMMITTEE
6:15 – 7:30 AM
Mineral Hall F, Hyatt Regency Denver

AANS/CNS DRUGS AND DEVICES COMMITTEE
6:30 – 8:00 AM
Granite Room A, Hyatt Regency Denver

AANS/CNS SECTION ON TUMORS EXECUTIVE COMMITTEE
6:30 – 8:00 AM
Centennial Ballroom F, Hyatt Regency Denver

NEUROPOINT ALLIANCE OPERATIONS COMMITTEE
7:00 – 8:00 AM
Centennial Ballroom C, Hyatt Regency Denver

WFNS CCII
7:00 – 8:00 AM
Mineral Hall D, Hyatt Regency Denver

THINKFIRST CONFERENCE
8:00 – 11:00 AM
Capitol Ballrooms 5, 6 & 7, Hyatt Regency Denver

THINKFIRST BOARD MEETING
12:00 – 2:00 PM
Capitol Ballroom 3, Hyatt Regency Denver

ABNS ADVISORY COUNCIL LUNCHEON
12:30 – 2:30 PM
Mineral Hall B, Hyatt Regency Denver

AANS/CNS SECTION ON NEUROTRAUMA AND CRITICAL CARE EXECUTIVE COMMITTEE
1:00 – 2:45 PM
Centennial Ballroom B, Hyatt Regency Denver

AANS/CNS SECTION ON SPINE AND PERIPHERAL NERVES EXECUTIVE COMMITTEE MEETING
1:00 – 2:00 PM
Mineral Hall D, Hyatt Regency Denver

WFNS FUNDRAISING MEETING
2:15 PM – 4:00 PM
Mineral Hall D, Hyatt Regency Denver

AANS/CNS JOINT MILITARY COMMITTEE
4:30 – 6:30 PM
Capitol Ballroom 7, Hyatt Regency Denver

AANS YOUNG NEUROSURGEONS COMMITTEE
5:00 – 7:00 PM
Centennial Ballroom F, Hyatt Regency Denver
NEUROPOINT – SD MEETING
5:30 – 6:30 PM
Limestone Room, Hyatt Regency Denver

NORTH AMERICAN GAMMA KNIFE CONSORTIUM
5:30 – 7:30 PM
Mineral Hall B, Hyatt Regency Denver

CLEVELAND CLINIC AANS ALUMNI RECEPION
5:30 P-7:00 PM
Mineral Hall E, Hyatt Regency Denver

DANDY SOCIETY RECEPION
5:30 – 7:30 PM
Granite Room B, Hyatt Regency Denver

JEFFERSON COCKTAIL RECEPION
5:30 – 8:30 PM
Quartz Room B, Hyatt Regency Denver

KAISER PERMANENTE NATIONAL NEUROSURGERY COUNCIL
5:30 – 8:00 PM
Granite Room A, Hyatt Regency Denver

PENN NEUROSURGERY FRAZIER CLUB RECEPION
5:30 – 7:00 PM
Mineral Hall G, Hyatt Regency Denver

UNIVERSITY HOSPITALS CASE WESTERN RESERVE RECEPION
5:30 – 7:00 PM
Mineral Hall D, Hyatt Regency Denver

AANS/CNS CEREBROVASCULAR SECTION YASARGIL LECTURE RECEPION
6:00 – 8:00 PM
Mineral Hall Foyer, Hyatt Regency Denver

MGH NEUROSURGERY ALUMNI RECEPION
6:00 – 8:00 PM
Mineral Hall A, Hyatt Regency Denver

STANFORD UNIVERSITY NEUROSURGERY ALUMNI RECEPION
6:00 – 8:00 PM
Centennial Ballroom H, Hyatt Regency Denver

NEUROLOGICAL INSTITUTE OF NEW YORK ALUMNI COCKTAIL HOUR
6:30 – 8:00 PM
Quartz Room A, Hyatt Regency Denver

MAYO CLINIC ALUMNI ASSOCIATION RECEPION
6:30 – 8:00 PM
Mineral Hall F, Hyatt Regency Denver

SEMMES-MURPHEY/UNIVERSITY OF TENNESSEE ALUMNI RECEPION
6:30 – 8:00 PM
Capitol Ballroom 6, Hyatt Regency Denver

STUART ROWE RECEPION
6:30 – 8:00 PM
Mineral Hall C, Hyatt Regency Denver

UNIVERSITY OF IOWA FRIENDS AND ALUMNI RECEPION
6:30 – 8:00 PM
Capitol Ballroom 4, Hyatt Regency Denver

WAYNE STATE UNIVERSITY ALUMNI RECEPION
6:30 – 8:00 PM
Granite Room C, Hyatt Regency Denver

SIEMENS AG SATELLITE SYMPOSIUM – INTRA-OPERATIVE ANGIOGRAPHY RELOADED: WILL THE LATEST INNOVATIONS REVAMP INTRA-OPERATIVE 3D IMAGING AND NAVIGATION
6:30 – 8:30 PM
Centennial Ballroom D, Hyatt Regency Denver

STRYKER EVENING SATELLITE SYMPOSIUM
6:30 – 10:30 PM
Centennial Ballroom E, Hyatt Regency Denver

Tuesday, April 12

AANS ETHICS COMMITTEE
7:00 – 8:00 AM
Sandstone Room, Hyatt Regency Denver

BIOMET SPINE MEETING
7:00 AM – 3:00 PM
Limestone Room, Hyatt Regency Denver

AANS/CNS SECTION ON PEDIATRIC NEUROLOGICAL SURGERY EXECUTIVE COMMITTEE MEETING I
1:00 – 2:00 PM
Mineral Hall D, Hyatt Regency Denver

NEUROSURGERY RESEARCH AND EDUCATION FOUNDATION RESEARCH SYMPOSIUM
4:00 – 5:30 PM
Capitol Ballrooms 1 & 2, Hyatt Regency Denver

AANS/CNS SECTION OF PEDIATRIC NEUROLOGICAL SURGERY EXECUTIVE COMMITTEE MEETING II
5:15 – 6:30 PM
Mineral Hall D, Hyatt Regency Denver

CSM INVESTIGATOR MEETING
5:30 – 6:30 PM
Marble Room, Hyatt Regency Denver

AANS/CNS SECTION ON TUMORS RECEPION
5:30 – 7:30 PM
Mineral Hall E, Hyatt Regency Denver

MIZUHO Surgeon RECEPION
5:30 – 7:00 PM
Peaks Lounge, Hyatt Regency Denver

NEUROSURGERY RESEARCH AND EDUCATION FOUNDATION DONOR AND GRANT RECEPION
5:30 – 7:00 PM
Capitol Ballroom 3, Hyatt Regency Denver
TEMPLE UNIVERSITY SCHOOL OF MEDICINE
RECEPTION
6:00 – 8:00 PM
Capitol Ballroom 5, Hyatt Regency Denver

AANS/CNS SECTION ON PEDIATRIC NEUROLOGICAL
SURGERY MATSON LECTURE RECEPTION
6:45 – 7:45 PM
Capitol Ballroom 7, Hyatt Regency Denver

Wednesday, April 13

PINNACLE PARTNERS FOCUS GROUP
7:00 – 8:30 AM
Mineral Hall F, Hyatt Regency Denver

WINS BREAKFAST
7:30 – 9:00 AM
Mineral Halls D & E, Hyatt Regency Denver

EXHIBITORS ADVISORY COMMITTEE
12:00 – 1:30 PM
Mineral Hall F, Hyatt Regency Denver

2011/2012 ANNUAL MEETING PLANNING COMMITTEE
AND SCIENTIFIC PROGRAM COMMITTEE POST
CONVENTION MEETING
2:00 – 3:30 PM
Mineral Halls D & E, Hyatt Regency Denver
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As a way for corporate supporters and organizations dedicated to neurosurgery to collaborate with the AANS aside from their traditional support, the AANS established the Pinnacle Partners in Neurosurgery program. This corporate giving program offers corporations many different opportunities to work with the AANS in the areas of training, education and advancing the neurosurgical specialty. Participation in the program affords corporate supporters added recognition and benefits not only through the annual meeting but throughout the year; involvement with the thought leaders in neurosurgery and its subspecialties and the chance to further neurosurgical research through the Neurosurgery Research and Education Foundation (NREF). The Pinnacle Partners in Neurosurgery is strengthening ties between the AANS and corporate supporters, both of whom are committed to advancing the field of neurosurgery!

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For additional information about these corporate supporters or the Pinnacle Partners in Neurosurgery program itself, visit http://www.aans.org/en/Corporate/AANS%20Corporate%20Giving/Pinnacle%20Partners%20Programs.aspx or contact the Development department at 847-378-0540.
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Cosman Medical is the world leader in RF generators and electrodes for Trigeminal Neuralgia, DREZ, cordotomy, spinal pain and functional stereotaxy. With 50 years experience, Cosman provides technologically advanced and cost-effective solutions. The touch-screen G4 Generator and RFG-1A Generator are major advances in RF capability—setting new standards for functionality and reliability.

**Covidien**
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Phone: (203)821-4572
Fax: (203)821-3286
www.covidien.com
Booth #1037

Covidien is a leading global healthcare products company that develops innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. In the United States, the BioSurgery division manufactures the DuraSeal™ sealant systems, the first and only FDA-approved dural sealants for use in cranial and spine procedures.

**Craig Hospital**
3425 S. Clarkson Street
Englewood, CO 80113
Phone: (303)789-8490
Fax: (303)789-8219
www.craighospital.org
Booth #639

Craig Hospital in Denver is world-renowned for the rehabilitation and research of patients with spinal cord injury and traumatic brain injury. Craig treats patients from 48-50 states each year and has been ranked in the Top Ten Rehabilitation Hospitals for 21 consecutive years by US News and World Report.

**Custom Spine**
Ste. 201
1140 Parsippany Blvd.
Parsippany, NJ 07054
Phone: (973)808-0019
Fax: (973)808-0707
www.customspine.com
Booth #2221

Custom Spine is committed to developing innovative spinal solutions to enhance patients’ quality of life. Our product portfolio offers next generation surgeon friendly spinal implants and instruments to support industry leading surgical techniques for the treatment of spinal disorders.
DePuy Spine, a Johnson & Johnson company
325 Paramount Drive
Raynham, MA 02767
Phone: (800)451-2006
Fax: (508)828-3283
www.depuyspine.com
Booth #1904

DePuy Spine, Inc., a Johnson & Johnson company, stands at the forefront of the worldwide spine market offering a broad portfolio of patient-focused products and solutions for spinal disorders backed by a robust pipeline, world-class evidence-based research, education, training and customer service. The company is headquartered in Raynham, Massachusetts.

Designs For Vision Inc.
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D Fine develops innovative technologies that help patients with back pain due to spine fractures and other sources of bone pain. The StabilIT™ Vertebral Augmentation System represents the next generation in spine fracture management providing greater control to physicians, potentially increased patient safety, and economic savings to hospitals and healthcare systems.

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Phone: (651)415-7431
Fax: (651)415-7536
www.djoglobal.com
Booth #745

DJO is a leading global medical device company providing solutions for musculoskeletal and vascular health, and pain management. The company’s products help patients prevent injuries or rehabilitate after surgery, injury or degenerative disease. JO’s brands include Aircast®, DonJoy®, ProCare®, CMF™, Empi®, Saunders®, Chattanooga Group™, DJO Surgical, Cefar®-Compex® and Ormed®. Visit www.DJOglobal.com.

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Our products provide advanced thermal control and safety in tissue dissection, tumor resection, and hemostasis. Our patient-pending technology produces surface-only tissue effects with energy that does not pass through the patient, reducing the potential for collateral tissue damage from thermal injury and stray electrical current.

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EGI offers complete EEG systems with sensor Nets designed for quick, easy and painless application. With Nets ranging from 32- to 256-channels, EGI provides whole-head, deEG that is practical, cost-effective, and reliable. Every component is designed to maximize patient comfort and satisfaction while enhancing clinical performance and productivity.

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Booth #1717

Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders. The company develops tools and treatment planning systems for radiation therapy and radiosurgery, and workflow enhancing software systems across the cancer care spectrum. Through its products and services, Elekta aims to improve, prolong and save patient lives.

Eliquence, LLC manufactures patented Radiofrequency technology with innovative devices for neurosurgery and spine procedures. Surgi-Max® Plus permits precision, tissue preservation, non-adherent bipolar effects and surgical versatility. Disc-FX® represents an innovative, 4-in-1 procedure for minimally invasive discectomy. Surgi-Max® Plus and navigational Trigger-Flex® permit annulus modulation and nucleus ablation.

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ev3, Inc. is now a part of Covidien, a leading global healthcare products company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. ev3’s portfolio includes plaque excision systems, PTA balloons, stents, embolic protection, thrombectomy, embolization coils, liquid embolics, occlusion balloons and procedural support solutions.

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FzioMed specializes in absorbable, surgical biomaterials based on our patented polymer science. FzioMed products include Oxiplex/SP Gel, the leading adhesion barrier for spine surgery outside the U.S. with over 185,000 patients treated worldwide. The company has filed a PMA for U.S. approval of Oxiplex.

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Fax: (610)415-9144
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Globus Medical, the world’s largest privately held spinal company, is driving significant technological advancements across a complete suite of spinal products. Founded in 2003, Globus’ single-minded focus on advancing spinal surgery has made it the fastest growing company in the history of orthopedics. Globus is driven to utilize superior engineering and technology to achieve pain free, active lives for all patients with spinal disorders.

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www.goremedical.com
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The Gore Medical Products Division has provided creative solutions to medical problems for three decades. Over 30 million Gore Medical Devices have been implanted worldwide. Products include vascular grafts, endovascular and interventional devices, surgical materials, and sutures for use in vascular, cardiac and general surgery. For more information, visit www.goremedical.com.

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Our team of experienced interviewers will be distributing carefully developed questionnaires. We’ll be gathering the answers to vital marketing and clinical questions-answers that can affect the introduction of new products or the continuation of existing healthcare products and services.

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Fax: (415)732-7044
www.hydroassoc.org
Booth #1134

The Hydrocephalus Association is a national non-profit organization. Our mission is to eliminate the challenges of hydrocephalus by stimulating innovative research and providing support, education and advocacy for individuals, families and professionals dealing with the complex issue of the condition. The Association provides comprehensive services that empower individuals and families.

IMRIS
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Integra LifeSciences, a world leader in medical devices, is dedicated to limiting spinal surgeries and new technologies to pathologies and focus areas of traditional and marketed a unique combination of patented technologies and has a rich pipeline of new products to change the standard of care for patients with TBI's.

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www.innerspacemedical.com
Booth #601

InnerSpace, Inc. seeks to provide surgeons and nurses with solutions to treat Traumatic Brain Injury (TBI). The company has created and marketed a unique combination of patented technologies and has a rich pipeline of new products to change the standard of care for patients with TBI's.

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Innovasis is a rapidly growing company engaged in the research, development, manufacturing and marketing of spinal implant devices and related products. Innovasis offers a product line with implants and instruments that address the major pathologies and focus areas of traditional spinal surgeries and new technologies to assist better patient outcomes and results.

Integra LifeSciences
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Fax: (609)275-5363
www.integra-ts.com
Booth #902

Integra LifeSciences, a world leader in medical devices, is dedicated to limiting uncertainty for surgeons, so they can concentrate on providing the best patient care. Integra offers a vast portfolio of implants, devices, instruments and systems used in neurosurgery and neuro critical care.

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IZI Medical Products designs and manufactures medical devices/accessories for image guided surgery, neuro radiology and interventional radiology.

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Joimax® offers a wide range of endoscopic spine system components. TESSYS® provides surgeons the ability to perform true minimally invasive spine surgery transformally, through a small single incision, under local anesthetic and on an outpatient basis. Included in the clinical procedures currently treated with joimax® systems are foraminal stenosis and disc herniation. The newly launched Shriil® – a multi-functional drill and resection system is the latest joimax® product. joimax® is also in the final stages of launching a complete line of High Definition endoscopy equipment and developing a similar line of products for endoscopic minimally invasive spine surgery for the cervical spine.

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www.K2M.com
Booth #2118

K2M, Inc. is an innovative spinal device company committed to the research, development, and commercialization of simplified solutions for the treatment of complex spinal pathologies and procedures. The company is recognized as a worldwide leader in providing unique technologies for the treatment of deformity, degenerative, trauma, and tumor spinal patients. K2M’s complete portfolio of next generation products includes: spinal stabilization
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Publications include the book series Radiosurgery and Progress in Neurological Surgery and the journals Pediatric Neurosurgery and Stereotactic and Functional Neurosurgery.

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Phone: (800)421-0837
Fax: (424)218-8537
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KARL STORZ Endoscopy-America, Inc., a leader in diagnostic and operative endoscopic technologies, designs, engineers, manufactures and markets products emphasizing visionary design, precision craftsmanship and clinical effectiveness. KARL STORZ offers products for every surgical specialty. These include FULL solutions for minimally invasive neurosurgery, from instrumentation and HD imaging to OR integration.

Kessler Institute for Rehabilitation
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Kessler Institute for Rehabilitation and Select Medical Corporation’s other leading rehabilitation hospitals provide comprehensive physical medicine and rehabilitation programs to individuals with spinal cord injury, brain injury, stroke, amputation, orthopedic conditions, musculoskeletal and neurological disorders.

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Booth #2015

Kinamed manufactures and sells the NeuroPro® Rigid Fixation System designed specifically for neurosurgical skull base and cranial applications. The system includes many unique tools for the neurosurgeon such as the Temporalis Muscle Suspension (TMS) Plate with suture eyelets for secure repositioning of the temporalis muscle, a Chiari Malformation plate and the single-use Quick Tap Power Driver.

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Kirwan Surgical Products, LLC manufactures high-quality electrosurgical instruments and accessories including a full range of reusable and disposable non-stick bipolar forceps and cords for use in neurosurgical procedures. Kirwan Surgical’s MIS-style and 3-Hole Yasargil-style bipolar forceps employ the same non-stick technology as Kirwan’s AURA line of bipolar forceps.

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KLS-Martin is a company dedicated to providing innovative medical devices for neurosurgery. We offer a wide variety of surgical instruments, titanium plates and mesh, custom cranial implants, and the revolutionary SonicWeld Rx system for resorbable fixation. Currently based out of Jacksonville, Florida, we have highly qualified representatives covering the needs of surgeons throughout North America.

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Lanx specializes in systems and implants for all segments of spinal surgery. Integrating leading technology, intellectual property and state-of-the-art engineering, each product is designed to simplify surgery and improve the quality of care for patients worldwide by providing surgeons with innovative spinal products.

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Life Instrument Corporation is dedicated to serving neurosurgeons and orthopedic surgeons with the highest quality surgical instruments. Since the 1980’s, spine surgery has advanced with new procedures and new approaches to the spine. Life Instrument Corporation was founded to meet the needs of spine surgeons for these new surgical techniques.

Life Spine  
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Life Spine is a full line spine company focused on providing innovative solutions to address spinal pathology from the occiput to the sacrum. Our comprehensive product portfolio that focuses on fusion, MIS, and motion preservation is driven by patient and surgeon needs.

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Mazor Robotics Markets the SpineAssist Surgical Guidance System, for accurate and safe spine surgery. SpineAssist had been clinically Validated SpineAssist guidance System facilitated the insertion of thousands of implants with zero cases of nerve damage and in daily use in medical centers around the globe.
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The MERI is a nonprofit medical teaching and training facility in Memphis, Tennessee qualified under section 501 (c) (3) of the Internal Revenue Code. The MERI conducts state-of-the-art, hands-on educational courses for physicians, nurses and other medical professionals from across the country and around the world. At the MERI, medical professionals are introduced to the latest innovations in medicine, and have the opportunity to learn first-hand about the most up-to-date medical techniques and technologies.

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At Medtronic (www.medtronic.com), we’re committed to innovating for life by pushing the boundaries of medical technology and changing the way the world treats chronic disease. By working closely with physicians around the world, we create therapies to help patients do things they never thought possible. Our medical technologies help make it possible for millions of people to resume everyday activities, return to work and live better—and longer. Please visit our booth #1404.

**Medyssey Spine**  
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Medyssey designs, develops, manufactures and markets products for the surgical treatment of spine disorders through innovative instrumentation and advanced orthobiologic solutions designed to improve spinal fusion rates, preservation of mobility and clinical outcomes.

**Methodist University Hospital Brain and Spine Institute**  
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Booth #2137

Methodist University Hospital Brain and Spine Institute is committed to advancing the future of neurosurgery and education through world-wide collaboration and cutting-edge patient care.

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For more information call 1-800-990-8368.

**minSURG Corporation**  
Ste. 200  
611 Druid Rd E  
Clearwater, FL 33756  
Phone: (727)442-0825  
Fax: (727)441-2089  
Booth #644

minSURG Corporation proudly displays the TruFUSE facet fusion procedure which can be performed minimally invasive to provide for stability and promoting facet joint fusion.

**Misonix Inc.**  
1938 New Highway  
Farmingdale, NY 11735  
Phone: (631)694-9612  
Fax: (631)694-3285  
www.misonix.com  
Booth #1034

The Misonix booth will feature the SonaStar Ultrasonic Surgical Aspiration System, used by neurosurgeons for the debulking and removal of brain tumors. It features two styles of 23kHz piezo-electric handpiece, easy set-up and monopolar cautery capability. The system includes nine different probes, including two bone shaving probes. All work on the elegant short-straight handpiece. And only SonaStar offers a wireless footswitch for the surgeons’ operation of machine functions.
Mizuho America, Inc.
Ste. B
133 Brimbal Avenue
Beverly, MA 01915-1893
Phone: (800)699-2547
Fax: (978)921-1718
www.mizuho.com
Booth #2218
Sugita T2 Aneurysm Clips and other micro instrumentation.

Mizuho OSI
30031 Ahern Avenue
Union City, CA 94587
Phone: (800)777-4674
Fax: (510)429-1337
www.osiosi.com
Booth #2226
Mizuho OSI® develops, manufactures and globally markets state-of-the-art specialty surgical tables. The Axis Jackson System® with its unique breaking hinge technology which supports the natural biomechanics of the spine will be exhibited. The system accommodates prone, supine and lateral patient positioning and facilitates intraoperative spinal flexion and extension.

Moeller Medical GmbH
Wasserkupperstr. 29-31
Fulda, 36043
Germany
Phone: (49) 661941950
Fax: (49) 6619419581
www.moeller-medical.com
Booth #1333
LiquoGuard® is the first CSF management system that simultaneously measures ICP and drains CSF. It is maximizing patient safety, reducing costs and enhancing mobility while offering a versatile medical tool. LiquoGuard® has been developed and is manufactured completely by Möller Medical. The German company was founded in 1949 and is also active within the OEM business.

Moeller-Wedel
Rosengarten 10
Wedel, 22880
Germany
Phone: (49) 4103709272
Fax: (49) 4103709355
www.moeller-wedel.com
Booth #2200
Founded 1864 as an optical company in Wedel (near Hamburg, Germany), MÖLLER-WEDEL is today a worldwide renowned manufacturer of surgical microscopes. The company is certified according to ISO13485 and ISO14001.

MÖLLER-WEDEL offers innovative products made in Germany. A wide range of microscopes and accessories allow tailor-made configurations of high-end quality.

Monteris Medical Inc.
100-78 Innovation Drive
Winnipeg, MB R3T-6C2
Canada
Phone: (204)272-2220
Fax: (204)272-2219
www.monteris.com
Booth #1543
Monteris Medical is pleased to offer the AutoLITT System for patients with brain tumors. Using MRI referenced real-time thermometry, brain tumors are subjected to laser thermal ablation, in-situ. Monteris also sells the Axilis® Stereotactic Miniframe for accurate biopsy and shunt placement. The AutoLITT System and Axilis Stereotactic Miniframe have received 510(k) clearance for sale in the USA.

National Research Council of Canada
Genomics and Health Initiative Project on Surgical Oncology
75 boul de Mortagne
Boucherville, PQ J4B-6Y4
Canada
Phone: (450)641-5000
Fax: (450)641-5106
www.neurotouch.ca
Booth #1637
The National Research Council of Canada is leading a pan-Canadian research program on the development of a VR-based rehearsal (training and planning) system, integrated with MRI, for neurosurgery. The team is reinforced by a strong cross-Canada network of hospitals, represented by key surgeons from Vancouver to Halifax.

NeuroLogica Corporation
14 Electronics Avenue
Danvers, MA 01923
Phone: (978)564-8576
Fax: (978)560-0602
www.neurologica.com
Booth #726
NeuroLogica launched its first product, the CereTom Portable CT, in 2005. It is currently in use in ICU, OR, ER, stroke centers and clinics, of many of the top neuroscience programs around the globe. In 2009, the inSpira HD portable SPECT was NeuroLogica’s second contribution to the imaging world. In 2010, we are pleased to bring you BodyTom, Portable Full Body CT.

NeuroPoint Alliance (NPA)
5550 Meadowbrook Drive
Rolling Meadows, IL 60008
Phone: (847)378-0500
Fax: (847)378-0600
www.AANS.org
Booth #2026
The AANS created NeuroPoint Alliance (NPA) to coordinate a variety of national projects requiring the acquisition, processing and reporting of clinical data relevant to neurosurgical practice via web-based mechanisms.

Central to its mission is the development of a centralized and nationally coordinated effort to allow individual neurosurgeons and practice groups to measure and analyze practice patterns and outcomes through NeuroPoint Alliance. This first unprecedented program, The National Neurosurgery Quality and Outcomes Database (N2QOD), will allow any U.S. neurosurgeon, practice group, or hospital system to contribute to and access national aggregate quality and outcomes data. The N2QOD is primarily designed to serve as a continuous national clinical registry for neurosurgery. N2QOD will also provide the infrastructure required to facilitate multi-center collaboration and longitudinal data collection for specific hypothesis driven comparative effectiveness studies.

Information is available in the AANS Resource Center, Booth #2026.

NextGen Healthcare
Nextgen Corporation
795 Horsham Road
Horsham, PA 19044
Phone: (215)657-7010
Fax: (215)657-7011
www.nextgen.com
Booth #2033
NextGen Healthcare is a leading provider of integrated electronic health record and practice management systems, connectivity...
solutions, and billing services designed to serve the needs of ambulatory practices and hospitals of all sizes and specialty areas. Our award-winning, certified solutions help improve care quality and increase operational efficiencies.

**NICO Corp.**
Ste. 203
9190 Priority Way West Drive
Indianapolis, IN 46240
Phone: (317)660-7118
Fax: (317)429-1518
www.niconeuro.com
Booth #2411

NICO Corporation is committed to being the leader in the design, development, sales, and marketing of breakthrough medical device technologies for minimally invasive and open surgical approaches to tissue and tumor removal within neurosurgery, neuro-interventional radiology and spinal surgery. The NICO Myriad tissue resection device is patented and FDA cleared and designed for use in ALL minimally invasive neurosurgical and central nervous system soft tissue removal approaches, including open and endoscopic craniotomies, offering consistent clinical benefits for EVERY procedural approach.

**NordicNeuroLab**
Ste. 210
234 W. Florida St.
Milwaukee, WI 53204
Phone: (414)244-3225
Fax: (414)244-3225
www.nordicneurolab.com
Booth #2429

With over a decade of experience, NordicNeuroLab (NNL) provides products and solutions that define the field of functional MR imaging. We understand the growing need for reliable and innovative tools in this growing field. As a result, we closely collaborate with research and clinical teams from both academic and medical centers, MR system manufacturers, and third party vendors to develop and manufacture hardware and software solutions that meet the needs of very experienced centers while developing training programs to make fMRI easy to adopt for more novice users. From state of the art post-processing and visualization software for BOLD, Diffusion/DTI, and Perfusion/DCE imaging to fMRI hardware for audio and visual stimulation, eye tracking, and patient response collection, NNL’s products are used around the world by researchers and clinicians alike. Ultimately, we are dedicated to bringing the most advanced neuro-imaging tools to market while making functional MRI programs easy to implement.

**North American Neuromodulation Society**
4700 W. Lake Ave.
Glenview, IL 60025
Phone: (847)375-4398
Fax: (847)375-6424
www.neuromodulation.org
Booth #2235

The North American Neuromodulation Society (NANS) is dedicated to being the premier organization representing neuromodulation. NANS promotes multidisciplinary collaboration among clinicians, scientists, engineers, and others to advance neuromodulation through education, research, innovation and advocacy. Through these efforts NANS seeks to promote and advance the highest quality patient care.

**North American Spine Society**
7075 Veterans Blvd
Burr Ridge, IL 60527-5614
Phone: (630)370-3600
Fax: (630)370-3700
www.spine.org
Booth #628

NASS is a multidisciplinary medical organization dedicated to fostering the highest quality, evidence-based, and ethical spine care by promoting education, research, and advocacy.

**NovaBone Products LLC**
1551 Atlantic Blvd. #105
Jacksonville, FL 32207
Phone: (904)462-7660
Fax: (904)418-1636
www.novabone.com
Booth #1143

NovaBone Products, LLC, provides a best-in-class synthetic bone graft substitute. The unique bioactive grafting technology delivers an osteoconductive matrix while signaling and stimulating osteoblastic activity to the site. For ease of use and surgical convenience, NovaBone is available in a variety of forms and sizes, along with multiple delivery options.

**Novartis Oncology**
1 Health Plaza
East Hanover, NJ 07936-1016
Phone: (862)778-8300
Fax: (973)781-8265
www.novartisoncology.com
Booth #738

Novartis discovers and develops innovative therapies that aim to help change the way patients live with neurological disorders. With a strong marketed portfolio and one of the broadest and most comprehensive pipelines in the industry, Novartis is a global market leader with medicines that address unmet patient needs.

**NSK Nakanishi, Inc.**
700 Shimohinata
Karuma-shi, 3228666
Japan
Phone: (81) 289643380
Fax: (81)289625636
www.nsk-nakanishi.co.jp
Booth #630

Primado is an electric drill-bone saw system developed with the aim of being the ideal power tool. Our products meet the particular requirements of modern neurosurgery: high performance, ease of use and ultimate precision.

**NuTech Medical**
2641 Rocky Ridge Lane
Birmingham, AL 35216
Phone: (800)824-9194
Fax: (205)290-9429
www.nutechmedical.com
Booth #2433

Nutech Medical, a biological company, specializes in innovative allograft based products. Nutech distributes conventional and machined allograft. NuCel is a proprietary adult progenitor product offering high quality cells. NuTech also developed and markets the NuFix facet fusion system as well as the spinous process interspinous fusion system, SPIF.

**NuVasive, Inc.**
7475 Lusk Blvd.
San Diego, CA 92121-5707
Phone: (858)909-2000
Fax: (862)462-7660
www.nuvasive.com
Booth #842

NuVasive’s current principal product offering includes a minimally disruptive
surgical platform called Maximum Access Surgery, or MAS®, as well as a growing offering of cervical, thoracolumbar, biologic and motion preservation products. The MAS platform offers advantages for both patients and surgeons such as reduced surgery and hospitalization time and faster recovery. MAS combines four categories of current product offerings: NeuroVision® a proprietary software-driven nerve avoidance system; MaXcess® a unique spinal access system, specialized implants, like SpheRx® and CoRoent® and a biologic platform that collectively minimize soft tissue disruption during spine surgery while allowing maximum visualization and surgical reproducibility.

Olsen Medical
3230 Commerce Center Place
Louisville, KY 40211
Phone: (800)697-6344
Fax: (502)772-4282
www.olsenmedical.com
Booth #723

Olsen Medical is your quality source for electrosurgical products. We proudly introduce our Single Use Irrigating Bipolar Forceps which minimize clogging and provide a consistent instrument for every case. Our exclusive Extendable Monopolar Pencil allows an adjustable length without extenders and is ideal for spinal surgery. OEM inquiries are welcome.

Olympus Biotech Corporation
35 South Street
Hopkinton, MA 01748
Phone: (508)416-5392
Fax: (508)416-5395
www.olympusbiotech.com
Booth #1845

OP-1 Implant and OP-1 Putty are currently approved in the United States under Humanitarian Device Exemptions (HDE) for revision posterolateral lumbar spine fusion and for the treatment of long bone nonunion fractures, respectively. OP-1 Implant is approved in Australia, Canada, Switzerland and the European Union. Approximately 40,000 patients have been treated globally with OP-1 products.

The active ingredient in OP-1 products is recombinant human bone morphogenetic protein-7 (rhBMP-7 or Osteogenic Protein 1), a recombinant version of a naturally occurring growth factor that belongs to a class of proteins known as bone morphogenetic proteins (BMPs) that are the only known proteins capable of inducing the formation of new bone. Olympus Biotech’s recombinant biotechnology process allows human OP-1/BMP-7 to be produced and delivered on a purified Type I bone collagen carrier that provides an osteoconductive scaffold on which new bone can grow.

OmniGuide
Suite B1301
One Kendall Square
Cambridge, MA 02139
Phone: (617)551-8444
Fax: (617)551-8445
www.omni-guide.com
Booth #2110

OmniGuide, Inc., is the worldwide leader in precision optical scalpels enabling new procedures in minimally invasive surgery. The Company’s BeamPath™ CO2 laser flexible fiber system is a clinically targeted, precision microsurgical instrument optimized for neurosurgery and is ideal for tissue cutting, delicate dissection and gentle peeling near critical structures.

Orthofix, Inc.
3451 Plano Parkway
Lewisville, TX 75066
Phone: (214)937-2000
Fax: (214)937-2730
www.orthofix.com
Booth #1436

Orthofix products surround the patient with preventative, intra-operative and post-operative treatment options. Our spine solutions help surgeons respond with the best treatments available to enhance clinical outcomes, including Spinal Implants, Biologics Technology, Bone Growth Stimulators, and Spine Bracing. Our promise is to be Customer Focused, Patient Driven and Always Responsive.

Orthovita Inc.
77 Great Valley Parkway
Malvern, PA 19355
Phone: (484)354-6782
Fax: (610)640-2933
www.orthovita.com
Booth #1644

At Orthovita, we believe the complexity and intricacy of orthobiologics and biosurgery are best addressed by experience, focus, and a proven track record of developing best in class technologies. We provide surgeons preeminent surgical solutions, including Cortoss™ Bone Augmentation Material; Vitoss™ BA Bone Graft Substitute; Vitagel™ Surgical Hemostat; and Vitasure™ Absorbable Hemostat.

Össur Americas
27051 Towne Centre Drive
Foothill Ranch, CA 92610
Phone: (949)382-3842
Fax: (949)382-3923
www.ossur.com
Booth #1116

Össur is a leader in Spinal Solutions with brands like Miami J®, Resolve® Halo, Occian™ Back Miami Lumbar™ LS O and the NEW Miami J® Advanced. Össur’s complete spinal care system and fracture management solutions meet the specialized needs of the caregiver and patient during each phase of the acute care continuum, allowing patients to lead a Life Without Limitations®.

OsteoMed
3885 Arapaho Road
Addison, TX 75001
Phone: (972)677-4600
Fax: (972)677-4601
www.ostomed.com
Booth #2128

OsteoMed is a global innovative leader in the development and manufacturing of specialty surgical implants for the spine, neurosurgical and ENT market as well as orthobiologics products. The OsteoMed philosophy focuses on improved patient outcomes through minimally disruptive anatomically friendly technology, with critical input from surgeons for streamlined surgical techniques. Products include next-generation interspinous fixation and facet fixation systems for the spine, as well as rigid fixation devices for instrument-less cranial flap replacement and dynamic surgical meshes for the skull.

OsteoSymbionics LLC
Ste. 316
1768 East 25th St.
Cleveland, OH 44114
Phone: (877)881-6899
Fax: (216)881-8504
www.ostoesymbionics.com
Booth #610

OsteoSymbionics cares about reconstruction after the functional work is complete. Our talented team of artists and engineers create the only clear implant in
the market for patient-specific reconstruction. Clear implants allow visualization of the dura before closure. Come visualize how our range of materials and products can meet your needs.

**Peachtree Financial Solutions**
2nd Floor
3301 Quantum Boulevard
Boynton Beach, FL 33426-8622
Phone: (866)581-6225
Fax: (866)321-6589
www.peachfunding.com
Booth #843

Medical lien funding refers to the purchase of medical lien (letters of protection) from medical providers for services performed related to personal injury cases. The medical provider receives cash and Peachtree assumes all of the risk of payment of the related medical receivables. Medical lien funding transactions are non-recourse to the medical provider regardless of case outcome.

**PeriOptix, Inc.**
#C620
1001 Avenida Pico
San Clemente, CA 92673
Phone: (949)366-3333
Fax: (949)366-0033
www.perioptix.com
Booth #838

PeriOptix introduces the lightest through the lens (TTL) design on the market. Weighing in at only 36 grams, the elegant and streamlined PeriOptix TTL loupe offers a customized angle of declination and working distance. PeriOptix provides magnification and LED light illumination with the highest intensity rating.

**PhysIOM, LLC**
1300 Oakridge Blvd. Ste. 130
Fort Collins, CO 80525
Phone: (877)377-9555
Fax: (970)377-9555
www.physiom.com
Booth #818

PhysIOM is a leading provider of intraoperative monitoring throughout the nation. We utilize real – time information about a patient’s neurophysiological status to optimize outcomes. Our ultimate goal is to reduce patient risk and physician liability.

**Pioneer Surgical**
Ste. 160-E
9600 Great Hills Trail
Austin, TX 78759
Phone: (512) 372-4355
Fax: (512) 340-1481
www.pioneersurgical.com
Booth #815

Pioneer Surgical Technology, Inc. is a progressive medical device firm with a comprehensive portfolio of industry-leading orthopaedic, biologic, and spine products. Pioneer is focused on creating innovative, cost-effective surgical solutions that benefit surgeons and provide better patient outcomes.

**PMT Corporation**
1500 Park Boulevard
Chanhassen, MN 55317
Phone: (952)470-0866
Fax: (952)470-0865
www.pmtcorp.com
Booth #920

PMT Corporation is the premier supplier of an extensive line of neurosurgical products. Offering high-end neck braces, including halo systems and orthotic vest for cervical, thoracic and lumbar spinal immobilization. PMT also offers Cortac®, cortical surface electrodes and Depthalon®, depth electrodes for epilepsy monitoring; microsurgical, irrigation and Fukushima® instruments.

**Porex Surgical, Inc.**
15 Dart Road
Newnan, GA 30265
Phone: (678)479-1610
Fax: (678)423-1437
www.porexsurgical.com
Booth #2132

Porex Surgical Inc., is pleased to feature MEDPOR® Surgical Implants for reconstruction following neurosurgical procedures. Customized Implants are also available for large or irregular defects.

**Prescott’s, Inc.**
P.O. Box 609
Monument, CO 80132
Phone: (719)481-3353
Fax: (719)488-2268
www.surgicalmicroscopes.com
Booth #634

Prescott’s Inc. is dedicated to offering the finest in reconditioned and new microscopes. Depending on your budget requirements, we can provide any brand of microscope system that you may need. Prescott’s also offers a complete service program supported by technicians around the count.

**Pro Med Instruments, Inc.**
Ste. 101
4529 SE 16th, Pl.
Cape Coral, FL 33904-7444
Phone: (239)369-2310
Fax: (239)369-2370
www.headrest.de
Booth #1243

Pro med instruments designs and manufacturers the DORO® line – the largest selection of cranial stabilization and brain retractor systems and accessories for neurosurgery. See innovation – navigation-guided accessories, the only FDA-cleared MRI SAFE radiolucent skull clamp with precision navigation control, Autoclavable Teflon®-coated Headrest Systems and a complete line of Non-Stick Bi-polar Forceps featuring the revolutionary ADF(tm) Adjustable Dissecting Force.

**QED Medical**
750 Enterprise Dr.
Lexington, KY 40510
Phone: (800)513-2256
Fax: (859)231-0376
www.qed-medical.com
Booth #736

Since 1971, QED has designed and manufactured some of the finest surgical lighting systems worldwide. First distributed under the name BF Wehrm; then via distributor BFW, Inc. QED’s systems are now available to all under the name QED Medical offering USA Made LED, Halogen, Xenon, Fiber Optic and Video Systems.

**Quality Medical Publishing, Inc.**
2248 Welsh Industrial Court
Saint Louis, MO 63146
Phone: (314)878-7808
Fax: (314)878-9937
www.qmip.com
Booth #1042

Stop by our booth and browse through our forthcoming educational offerings and current publications, including: *Minimally Invasive Spine Fusion: Techniques and Operative Nuances*, edited by Drs. Perez-Cruet, Pimenta, Beisse, and Kim; *Handbook of Minimally Invasive and Percutaneous...*

Quentry
Kapellenstr. 12
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Phone: (49) 899915680
Fax: (49) 8999156833
Booth #2241
Quentry.com is a network for physicians to access, control and share diagnostic imaging from anywhere within a secure clinical network. Harness powerful, on-demand tools to visualize your data, consult colleagues and synchronize your work. Together we are enabling faster, better access to medical knowledge. Powered by Brainlab.

RAUMEDIC AG
Hermann-Staudinger, Str. 2
Helmrechts, 95233
Germany
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Fax: (49) 9252359512380
www.raumedic.com
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ICP/Intracranial Temperature Monitoring with direct connection to the patient monitor. Measurement of oxygen saturation in the brain tissue.

RGP Inc.
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Bristol, RI 02809
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Fax: (401)254-0157
www.rgpergo.com
Booth #618
The Swedish Seating System is an ergonomically designed operator stool. Our 400-D combines unparalleled support with an elegant design and the hydraulic mechanism allows the stool’s back and seat to ‘float’, following ones’ movement.

Rausler Inc.
Unit E
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San Carlos, CA 94070
Phone: (650)631-4515
Fax: (650)631-4555
Booth #716
Rausler dynamic and semiconstrained anterior cervical vertebrae plating system.

Rose Micro Solutions LLC
4105 Seneca Street
West Seneca, NY 14224
Phone: (716)608-0009
Fax: (716)608-0006
www.rosemicrosolutions.com
Booth #2139
Rose Micro Solutions is a "Family" business consisting of four brothers. We sell high quality optical loupes and LED lights for less. We named our company after our mother "Rose". Stop by our booth and see for yourself, or visit us @ www.rosemicrosolutions.com. Call us @ 716-608-0009.

RosmanSearch, Inc.
30799 Pinetree Road #250
Pepper Pike, OH 44124
Phone: (216)256-9020
Fax: (440)247-2434
www.rosmansearch.com
Booth #910
RosmanSearch, Inc. provides targeted neurosurgical recruitment services.

Salient Surgical Technologies
180 International Dr.
Portsmouth, NH 03801
Phone: (877)742-1515
Fax: (603)294-5698
www.salientsurgical.com
Booth #2227
Salient Surgical Technologies develops advanced energy devices for use in surgical procedures. Salient’s AQUAMANTYS® System achieves rapid hemostasis and improves patient outcomes using proprietary TRANSCOLLATION™ technology to transform collagen based structures at the surgical site. To date, TRANSCOLLATION technology has been used in over 420,000 surgical procedures.

Scanlan International, Inc.
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Saint Paul, MN 55107
Phone: (651)298-0997
Fax: (651)298-0018
www.scanlaninternational.com
Booth #1108
Highest quality surgical products designed and manufactured by the Scanlan family since 1921. Stainless Steel and Titanium instrumentation designs, Loftus™ ACDF Distractor, Abdulrauf EC/IC By-Pass instruments, ACCU-SCAN™ Fiducial Markers, Badie Suction Bipolars, Minimally Invasive Dura Closure Set, NDI Passive Spheres™, Sundt™ Graduated Suction system, SUPER CUT™ Scissors and Microsurgical Knives.

SeaSpine, Inc.
2302 La Mirada Drive
Vista, CA 92031
Phone: (760)727-8399
Fax: (760)727-8891
www.seaspine.com
Booth #811
Based in Southern California, SeaSpine is focused on providing high quality, competitive products for the spine fusion market and developing next generation non-fusion products. From Sierra™ to Malibu™, SeaSpine offers a full line of fusion and MIS products for the entire spinal column, from occiput to sacrum.

Shepherd Center
2020 Peachtree Rd. N.W.
Atlanta, GA 30309-1465
Phone: (404)350-7353
Fax: (404)350-7381
www.shepherd.org
Booth #2413
Shepherd Center is one of the top rehabilitation hospitals in the nation, specializing in medical treatment, research and rehabilitation for people with spinal cord injury or brain injury.

Siemens Medical Solutions USA Inc
51 Valley Stream Parkway
CSG Marketing-Mail Stop H30
Malvern, PA 19355
Phone: (888)826-9702
www.usa.siemens.com/healthcare
Booth #1942
Siemens Healthcare is one of the world’s largest suppliers to the healthcare industry and the first full-service diagnostics company. The company is known for bringing together innovative medical technologies, healthcare information systems, management consulting, and support services, to help customers achieve tangible, sustainable, clinical, and financial outcomes.
Solvay offers Zeniva® PE EK® and other implantable medical devices. In addition, instruments available to the discriminating reusable surgical instruments, and non-selection of exceptional hand held surgical Sontec offers the most comprehensive performance in sterilization cases and trays, Solviva® Biomaterials for use in implantable metal in single-use instruments.

Booth #1242

For over 20 years, Solvay’s Radel® PPSU has delivered durable, lightweight performance in sterilization cases and trays, reusable surgical instruments, and non-implantable medical devices. In addition, Solvay offers Zeniva® PEEK and other Solviva® Biomaterials for use in implantable devices, as well as kflex® PARA for replacing metal in single-use instruments.

Sontec Instruments, Inc
7248 S. Tucson Way
Centennial, CO 80112
Phone: (303)790-9411
Fax: (303)792-2606
www.sontecinstruments.com
Booth #1432

Sontec offers the most comprehensive selection of exceptional hand held surgical instruments available to the discriminating surgeon. There is no substitute for quality, expertise and individualized service. Sontec’s vast array awaits your consideration at our booth.

Sophysa USA Inc.
303 S. Main St.
Crown Point, IN 46307
Phone: (219)663-7741
Fax: (219)663-7741
www.sophysa.com
Booth #622

Sophysa is focused on the design and manufacture of innovative CSF Management technologies and solutions. Sophysa’s pioneering research and development continues to expand the reach of the global neurosurgical community, focusing on hydrocephalus, and related disorders of CSF dynamics.

Söring Medical Technology
Ste. 8
8000 NW 31st Street
Doral, FL 33122
Phone: (305)677-3920
Fax: (305)456-6525
www.Soering.com
Booth #837

Söring, one of the pioneers in ultrasound technology, has been offering innovative solutions for ultrasonic surgery on the international market, leader in ultrasound technology also offers one-of-the-kind solutions for non-contact coagulation. Söring’s success hinges on the continuous and uncompromising search for innovative improvement, Sonoca 300, an ultrasonic dissector by Söring GmbH Germany is the only unit worldwide offering three working frequencies in one (25 kHz, 35 kHz and 55 kHz).

SpecialtyCare
Suite 800
3100 West End Avenue
Nashville, TN 37203
Phone: (615)345-5400
Fax: (615)345-5405
www.specialtycare.net
Booth #1044

SpecialtyCare is the nation’s leading provider of outsourced clinical services to the operating room. In addition to perfusion and anesthesia technician services, SpecialtyCare also provides autotransfusion/cell salvage services, minimally invasive surgical support, intraoperative neurological monitoring and surgical assistants. SpecialtyCare serves more than 470 hospitals and supports 100,000 surgical procedures annually.

Spectrum Health
Ste. 320
665 Seward Ave NW MC 521
Grand Rapids, MI 49504
Phone: (616)486-6681
Fax: (616)486-6665
www.spectrum-health.org
Booth #743

Spectrum Health Medical Group is a physician-led, multi-specialty group that is part of Spectrum Health, recently-named a Top Ten U.S. Health System by Thomson Reuters. There are significant opportunities in our expanding neurosciences program which include: general neurosurgery, cerebrovascular, head trauma, brain tumor, minimally invasive spine, and deep brain stimulation.

Spinal Elements
Suite 100
2744 Loker Ave West
Carlsbad, CA 92010
Phone: (760)607-0121
Fax: (760)607-0125
www.spinaelelements.com
Booth #2020

Spinal Elements develops and markets innovative spinal technologies. The portfolio includes: Mosaic® Cervical Implant; Atomic® Anterior Cervical Plate; Crystal® Cervical Interbody, Lucent® Lumbar Interbody, and Lucent Magnum™ Anterior Lumbar Interbody; Mercury® Classic Pedicle Screw, and Magnum+™ Stand Alone ALIF with screws. Spinal Elements is also developing the Zyre™ facet implant system.

Spine Surgical Innovations
40 Norfolk Avenue
South Easton, MA 02375
Phone: (508)238-3351
Fax: (508)238-3807
www.spinesurgicalinnovation.com
Booth #739

The patented Swivel Port System and associated instruments for minimally invasive spine surgery provides simple, safe and easy tools that compliments your existing surgical technique. Offering the Minimum Incision, Maximum Site (Sight) Approach, with maximum “sight” and visualization.
Spine View
Suite 100E
48810 Kato Road
Fremont, CA 94538
Phone: (510)623-1931
Fax: (510)490-1753
www.spineview.com
Booth #2306
Spine View, Inc. is committed to the development and commercialization of novel, minimally-invasive technologies aimed at improving spinal decompression and fusion with a collection of surgical and interventional products and procedures. We are introducing our next-generation enSpine™ Surgical Discectomy System, which is designed to facilitate more complete discectomies and accelerate tissue removal in open and MIS discectomies for lumbar interbody fusion.

SpineWave Inc.
Ste. 210
3 Enterprise Dr.
Shelton, CT 06484
Phone: (203)944-9494
Fax: (203)944-9493
www.spinewave.com
Booth #1120
SpineWave develops and markets clinical solutions for several market segments including: nuclear replacement and augmentation, vertebral compression fracture repair and spinal fusion. The company’s product portfolio includes: NuCore® Injectable Nucleus, StaXx® XD Expandable Device, CapSure® PS2 Spine System, Sniper™ Spine System, and several additional products.

SpineGuard
Ste. 970
301 Howard St.
San Francisco, CA 94105
Phone: (415)512-2502
Fax: (415)512-8004
www.spineguard.com
Booth #2322
NEW! The PediGuard Curv is now available! In addition to 3 diameters and a new curved tip, PediGuard addresses a multitude of surgeon preferences. PediGuard is the first and only handheld, wireless device that can detect possible vertebral cortex perforation during pedicle preparation for screw placement by accurately analyzing the electrical conductivity of the surrounding tissues in real-time. PediGuard requires no change in surgical technique and has been used in nearly 13,000 procedures around the world.

Spineology Inc
Suite 600
7800 3rd Street N.
St. Paul, MN 55128-5451
Phone: (651)256-8500
Fax: (651)256-8505
www.spineology.com
Booth #2201
Spineology’s flagship product, OptiMesh, is a deployable polyester fabric mesh designed to contain granular bone graft. By combining granular graft with a porous conformable implant, the OptiMesh system provides a minimally invasive solution for deploying osteoinductive and osteoconductive graft materials into intimate contact with a prepared grafting site.

St. Jude Medical
6901 Preston Road
Plano, TX 75024
Phone: (972)309-8000
Fax: (972)309-8150
www.sjmneuro.com
Booth #2040
St. Jude Medical is dedicated to putting more control into the hands of those who treat chronic pain. Products include Penta™ leads, the first five-column paddle leads for lateral coverage and precise field control; radiopaque, mechanical locking Swift-Lock™ anchor; and MultiSteering technology for real-time assessment and coverage of multifocal pain. Visit sjmneuro.com

Stryker
2725 Fairfield Road
Kalamazoo, MI 49002
Phone: (269)385-2600
Fax: (269)324-5484
www.stryker.com
Booth #1628
Stryker Corporation, one of the world’s leading medical technology companies, offers a broad-based range of products in spine and micro implant systems, high speed drills, surgical navigation systems, and interventional spine products.

Surgical Acuity
Ste. 190
3225 Deming Way
Middleton, WI 53562
Phone: (888)822-8489
Fax: (608)828-5261
www.surgicalacuity.com
Booth #734
Surgical Acuity designs and manufactures high-performance magnification loupes for surgeons and other medical professionals. Renowned for quality craftsmanship, Surgical Acuity loupes deliver remarkable resolution over a deep and wide viewing field. Superior visualization is achieved through innovative, lightweight optics made from only the finest grade of glass. With six different telescopes models to choose from, each available on a variety of frame styles & colors, Surgical Acuity offers one of the most comprehensive portfolios of magnification eyewear in the healthcare industry.

SurgiTel/General Scientific Corporation
77 Enterprise Drive
Ann Arbor, MI 48103
Phone: (734)996-9200
Fax: (734)662-0520
www.surgitel.com
Booth #2133
SurgiTel Systems is dedicated to offering the best in ergonomics, vision, and comfort. Coupling SurgiTel Systems’ High Definition Optics with Oakley Frames, we offer the very best in magnification systems. SurgiCam, our new loupe-mounted camera system, is digital and lightweight allowing the viewers to see images at the user’s perspective.

SurgiVision
5 Music
Irvine, CA 92618
Phone: (949)900-6833
Fax: (949)900-6834
www.surgivision.com
Booth #711
SurgiVision is a leader in the field of MRI-guided interventions, creating innovative platforms for performing the next generation of interventional procedures in the brain and heart. Utilizing a hospital’s existing MRI suite, SurgiVision’s FDA cleared ClearPoint™ system is designed to enable a range of minimally invasive procedures in the brain.
Synthes
1301 Goshen Parkway
West Chester, PA 19380-5986
Phone: (610)719-6500
Fax: (610)719-6533
www.synthes.com
Booth #1914

Synthes is a leading global medical device company. We develop, produce and market instruments, implants and biomaterials for the surgical fixation, correction and regeneration of the human skeleton and its soft tissues. Synthes also supports North American AO ASIF Continuing Education courses.

Synthes Ansbach
4500 Riverside Drive
Palm Beach Gardens, FL 33410
Phone: (561)627-1080
Fax: (561)627-1265
www.ansbach.com
Booth #1008

The ANSPACH Companies manufacture high performance instrument systems for neurosurgery, neurology, spinal procedures, and otolaryngology. Our power systems provide consistent power and smooth performance for even the most demanding applications. The advanced design of our instruments assures unparalleled performance and reliability, while allowing effortless assembly, meeting surgeon and staff needs.

Tecomet
115 Eames Street
Wilmington, MA 01887
Phone: (978)642-2400
Fax: (978)658-4334
www.tecomet.com
Booth #2302

Tecomet is a leading contract manufacturing, engineering and technology company specializing in net shape forging, precision machining, photochemical etching, surface texturing, laser/electron beam welding, and rapid prototyping. Tecomet is ISO13485 and ISO9001 and supplies components to medical markets with special emphasis on orthopedic, cranial maxillofacial, trauma, and spinal implants.

TeDan Surgical Innovations
Suite 180
11333 Chimney Rock Road
Houston, TX 77035
Phone: (713)726-0886
Fax: (713)726-0884
Booth #716

TeDan Surgical Innovations (TSI) offers surgical products and cervical and lumbar retractor systems such as our Phantom CS™, Phantom TL™, Phantom LS™, Phantom MC™, and our new Phantom ML™ for minimally invasive lumbar fusion. These retractor systems have a patented ergonomically designed blade locking mechanism. Please visit us at www.tedansurgical.com.

The Children’s Hospital
Anschutz Medical Campus
13123 East 16th Avenue, Box 080
Aurora, CO 80045
Phone: (720)777-1234
Fax: (720)777-7388
www.thechildrenshospital.org
Booth #2236

The Children’s Hospital Neurosciences Institute is nationally and internationally recognized for providing outstanding care for children and adolescents with neurological disorders. Our researchers conduct laboratory and clinical research to improve treatment options and outcomes. Specialty clinics include: Craniofacial Clinic, Neuro-Ontology Program, Spinal Defects Clinic and Epilepsy Program. Visit www.thechildrenshospital.org/neuro.

The Doctors Company
185 Greenwood Road
Napa, CA 94558
Phone: (707)226-0277
Fax: (707)226-0198
www.thedoctors.com
Booth #2039

The American Association of Neurological Surgeons has exclusively sponsored The Doctors Company’s medical liability insurance program since 2000. AANS members benefit from discounts and credits, including claims-free credits, premium discounts, and Tribute® Plan contributions. Visit us in Booth 2039 to learn more about our extensive benefits for AANS members.

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Thieme is an award-winning international medical and science publisher serving health professionals and students for more than 100 years. Thieme promotes the latest advancements in clinical practice, publishes the latest research findings, advocates medical education and is known for the high quality and didactic nature of its books, journals, and electronic products.

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Naperville, IL 60563
Phone: (630)961-1400
Fax: (630)961-1401
www.thinkfirst.org
Booth #2135

ThinkFirst is celebrating 25 years! Founded by the AANS and CNS in 1986, ThinkFirst is an independent 501c3 corporation focused on injury prevention education for kids of all ages. Start a chapter at your hospital! Help prevent traumatic injuries!

Thompson Surgical Instruments, Inc.
10170 East Cherry Bend Road
Traverse City, MI 49684
Phone: (231)922-0177
Fax: (231)922-0174
www.thompsonsurgical.com
Booth #2219

Thompson Surgical is the original manufacturer of table-mounted retractors. In use for over thirty years, the Thompson Retractor is the only mechanical retractor to offer one frame for all exposure needs, multi-planed retraction, and unlimited customization. Stop by our booth so you can see our latest innovations that will provide you uncompromised exposure.

Tomotherapy, Inc.
1240 Deming Way
Madison, WI 53717
Phone: (608)824-2839
Fax: (608)824-2992
www.tomotherapy.com
Booth #914

Tomotherapy has developed a revolutionary radiotherapy platform that now offers three distinct solutions for cancer centers and their patients: The Hi-Art® treatment system for CT-guided helical IMRT; the new TomoHD® treatment system with TomoHelical® and TomoDirect® treatment delivery modalities; and TomoMobile™, the world’s first relocatable radiotherapy solution for underserved markets.
Innovator’s in medical imaging technology, Toshiba America Medical Systems, markets, sells, distributes and services diagnostic imaging systems throughout USA. Toshiba is committed to providing our customers with the patient-focused technology and optimum system performance needed to succeed in today’s healthcare marketplace.

TranS1
301 Government Center Drive
Wilmington, NC 28403
Phone: (910)332-1700
Fax: (910)332-1701
www.TranS1.com
Booth #1035

TranS1® offers an innovative, trans-sacral approach to lumbar surgery. A mini-open access and fusion system enables lumbar fusion to be performed with complete preservation of the annulus and all paraspinal soft tissue structures. AxiaLIF/AxiaLIF 2L+ technologies result in high fusion rates, low complication rates, and improved patient recovery time.

TrueVision Systems, Inc.
114 E. Halley Street
Santa Barbara, CA 93101
Phone: (805)963-9700
Fax: (805)963-9719
www.truevisionsys.com
Booth #2232

TrueVision® is a 3D HD vision system for microscopes manufactured by TrueVision Systems Inc. (www.truevisionsys.com). The company is focused on improving many high-volume microsurgical procedures through surgical guidance software and real-time 3D operative visualization. TrueVision transforms a traditional surgical microscope into a digital 3D visualization and guidance platform for surgery.

UFSK-International OSYS GmbH –Vision Equip
Suite 74
27992 W, State Rt. 120
Lakemoor, IL 60051
Phone: (888)783-7891
Fax: (815)385-3720
www.visionequip.com
Booth #2141

Visionequeq distributor for UFSK-OSYS offers a wide range of innovative ergonomic surgeons chairs, stools and assistants stools for microsurgery.

Vetricor, LTD
Suite 350
600 N. Marienfeld
Midland, TX 79701
Phone: (432)697-7463
Fax: (432)697-1222
www.veticor spine.com
Booth #2417

Vetricor is a Texas-based medical device company. Our focus is to design, manufacture, and market spinal implants for fusion with our main emphasis on positive patient-outcome. Strategic relationships with some of the finest surgeons in the industry ensure that our products are designed with the utmost consideration and care for patient well being and ease and efficacy of use.

VERTICOR currently carries a full line of Cervical, ALIF, TLIF and PLIF implants and has several other spine products in development.

Visionsense Corp.
Ste. 302
1270 Avenue of the Americas
New York, NY 10020
Phone: (917)680-0233
Fax: (850)503-2256
www.visionsense.com
Booth #1640

Visionsense provides novel 3D endoscopy solutions that bring natural stereoscopic sight to minimally invasive surgery (MIS). With advanced sensor technology and proprietary software, the Visionsense system delivers depth perception, high resolution images and maneuvering flexibility through the smallest access diameters.

Vycor Medical Inc.’s premier product line, The ViewSite Brain Access System (VBAS), provides excellent surgical access to the operative site, allows for superior binocular vision of the surgical area and distributes the brain tissue evenly allowing the surgeons seamless entry to the target.

Weatherby Locums
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6451 North Federal Hwy
Ft. Lauderdale, FL 33308
Phone: (800)586-5022 Ext. 119
Fax: (800)463-2817
www.weatherbylocums.com
Booth #2215

Weatherby Locums is an elite physician staffing company providing superior personal service since 1995. We present the best temporary opportunities that enable each neurological surgeon to focus on optimal patient care. We offer neurological surgeons the flexibility of working locum tenens and the ability to choose from hundreds of jobs nationwide. Contact us at 800-586-5022 or visit www.weatherbylocums.com.

Wiggins Medical
2112 N. Arendell Way
Tallahassee, FL 32308-6002
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Fax: (850)942-6595
www.wigginsmedical.com
Booth #814

Wiggins Medical is the HOME OF THE ORIGINAL BLACK KERRISON. Our black coating is guaranteed not to chip, crack, or peel! If you want top quality kerrisons and IVDs, come see our “easy on the hands, smooth as butter” instruments. We also have a great selection of longer instruments.

World Neurosurgery
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Los Angeles, CA 90033
Phone: (323)442-3001
Fax: (323)442-3002
www.worldneurosurgery.org
Booth #1548

WORLD NEUROSURGERY is a publication designed to not only convey high level peer-reviewed clinical, and laboratory neuroscience, but to address issues of political, social, economic, educational, and cultural relevance on six continents as they affect the management and treatment of
neurosurgical diseases regionally and globally. It will chronicle events, places, people, our times, and literature, internationally.

**X-Spine Systems**

452 Alexandersville Road
Miamisburg, OH 45342
Phone: (937)847-8400
Fax: (937)847-8410
www.x-spine.com
Booth #1542

X-spine is a global spinal implant company dedicated to advancing spinal implant technologies that improve surgery outcomes and optimize surgeon experience. X-spine’s principles of Invention, Integration and Intuition drive our product philosophy.

**Zimmer Spine**

7375 Bush Lake Road
Minneapolis, MN 55439
Phone: (952)857-5682
Fax: (952)857-5982
www.zimmerspine.com
Booth #1920

Zimmer Spine develops, produces and markets the highest quality spine products and services that repair, replace and regenerate spine health. Zimmer Spine facilitates surgeon-to-surgeon training and provides continuous access to relevant information to improve patient outcomes. With continuous technological advancement, Zimmer constructs superior fusion and non-fusion spine systems, instrumentation systems, cervical plates, allograft bone filler and Trabecular Metal™ Technologies. Through the hands of skilled surgeons, Zimmer enhances patient quality of life.
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- North American Spine Society 628
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Registration Hours
Lobby B, Colorado Convention Center
6:30 AM – 5:30 PM
*Lunch Hour
Rooms 107, 109, 111, 113, Colorado Convention Center
12:00 – 1:00 PM
*For attendees participating in an ALL DAY clinic or in a morning and afternoon clinic only.
Beverage Breaks
F Concourse, South Side, Colorado Convention Center
9:45 – 10:15 AM
2:45 – 3:15 PM

PRACTICAL CLINIC
8:00 AM – 5:00 PM

001
Current Surgical Techniques and Approaches to MIS Spine Surgery
Rooms 102, 104, 106, Colorado Convention Center

CO-DIRECTORS:
Richard G. Fessler, MD, PhD
Daniel H. Kim, MD, FACS

FACULTY:
Sean D. Christie, MD
Kurt M. Eichholz, MD
Anthony K. Frempong Boadu, MD
Vishal C. Gala, MD, MPH
Robert F. Heary, MD
Robert E. Isaacs, MD
John C. Liu, MD
Alfred T. Ogden, MD
John E. O’Toole, MD
Mick J. Perez-Cruet, MD
Faheem A. Sandhu, MD, PhD
Justin S. Smith, MD, PhD
Trent L. Tredway, MD
Jean Marc Voyerdzis, MD

Fee: $1,900

The course is designed to provide candidates (residents/fellows) and practicing neurosurgeons with the comprehensive exposure to spinal surgical anatomy and techniques by doing side by side comparisons of minimally invasive (MIS) and traditional surgical approaches. For each segment of the spine, the surgical anatomy will be reviewed in detail using cadaveric specimens to help the participant gain insight into both the landmarks for placement of instrumentation, as well as the techniques for complication avoidance.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the anatomical nuances of all types of approaches and techniques in spinal surgical procedures including instrumentation
- Describe the anatomy of the cervical, thoracic and lumbar regions
- Cite the pros and cons of minimally invasive approaches

PRACTICAL CLINICS
8:00 AM – 12:00 PM

002
Minimally Invasive Treatment of Trigeminal Neuralgia
Rooms 205, 207, Colorado Convention Center

CO-DIRECTORS:
Jeffrey Thomas Keller, PhD
John M. Tew Jr., MD

FACULTY:
Ellen L. Air, MD, PhD
Khaled M. Azz, MD, PhD
Steven C. Bailey, MD
George Kostas Bovis, MD
Joseph C. T. Chen, MD, PhD
Aaron A. Cohen-Gadol, MD
John Joseph DePowell, MD
Sebastien Froelich, MD
Andrew W. Grande, MD
Robert G. Kerr, MD, PhD
George T. Mandybur, MD
Nancy A. McMahon, RN
Chad J. Morgan, MD
Troy D. Payner, MD
Philip V. Theodosopoulos, MD

Fee: $650

This course will familiarize participants with the pathophysiology of trigeminal neuralgia and the entire breadth of treatment options, including percutaneous lesions, open surgical management, endoscopic approaches, as well as radiosurgical treatment. The relevant anatomy will be extensively reviewed with an emphasis on key surgical points that maximize the effectiveness of treatment both in standard pathologic findings, as well as atypical presentations, recurrences after treatment and lesion related symptoms. A treatment algorithm will be presented and the nuances of treatment decision making will be extensively discussed.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the standard techniques for the treatment of trigeminal neuralgia
- Explain the decision making process regarding which treatment modality is “best” for the patient
- Discuss the current thoughts regarding the pathophysiology of trigeminal neuralgia
- Explain the diagnosis of trigeminal neuralgia versus atypical facial pain
- Discuss the issues related to recurrence of trigeminal neuralgia following treatment, as well as the subsequent treatment of these patients

700
International Spine Masters
Room 304, Colorado Convention Center

DIRECTOR:
Arnold H. Menezes, MD

FACULTY:
Richard Assaker, MD
Murat Cosar III, MD
Phyo Kim, MD, PhD
Izumi Koyanagi, MD
Luiz Pimenta, MD, PhD
Antonio Raco, MD
Vedantam Rajeshkhar, MD
Salman Y. Shair, MD
Mehmet Zileli, MD

Fee: $450

This didactic course is comprised of lectures, case presentations and discussion concerning a number of spinal issues. The faculty has broad and comprehensive experience with techniques not commonly utilized by North American neurosurgeons, as well as familiarity with new techniques, which can be expected to be performed in North America in the near future.
LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Describe the evaluation and management of a number of spinal pathologies including trauma, degenerative disease, and neoplasms
• List the advantages and disadvantages of spinal surgical techniques

**701 International Stereotactic and Functional Masters**
Room 401, Colorado Convention Center

DIRECTOR:
Andres M. Lozano, MD, PhD

FACULTY:
Carlos Gilberto Carlotti Jr., MD
G. Rees Cosgrove, MD, FRCSC
Joachim K. Krauss, MD, Prof
Kyu Sung Lee, MD, PhD
Jean Regis, MD

Fee: $450

In this educational session leading international experts in stereotactic surgery will review the history of this specialty and describe how these methods are used in contemporary practice.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Describe the difference between framed and frameless stereotactic methods
• Explain the strengths and limitations of CT imaging based stereotactic methods
• Describe the advantages and limitations of MRI based stereotactic methods
• Discuss how stereotactic atlases are used to provide target information
• Determine an appropriate entrance site for various target locations

**702 International Neurovascular Masters**
Room 402, Colorado Convention Center

DIRECTOR:
Ricardo Alexandre Hanel, MD, PhD

FACULTY:
Juha Hemesniemi, MD, PhD
Robert F. Spetzler, MD
Rokuya Tanikawa, MD
M. Christopher Wallace, MD

Fee: $450

The course shall provide a broad overview of a broad spectrum of tumor entities. Based on the expertise of a panel of international experts, the surgical environment of tumor surgery with special emphasis on new technologies or technologies under development around the world will be illustrated. Participants in the course will learn how structured preoperative preparation, intraoperative technology and postoperative follow-up will ensure optimal tumor treatment.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the optimal general strategy for the treatment of a wide spectrum of intracranial tumors including interdisciplinary approaches
• Assess the differential value of technical tools for different types of oncological neurosurgical procedures
• Advise patients on the adequate established or emerging adjuvant therapies
• Assess the value of entering patients into clinical trials

**PRACTICAL CLINICS**
1:00 – 5:00 PM

**003 Microsurgical Management of Intracranial Aneurysms: Site Specific Surgical Anatomy, Operative Intervention and Complication Management**
Room 203, Colorado Convention Center

DIRECTOR:
Arthur L. Day, MD, FACS

FACULTY:
Daniel Louis Barrow, MD
H. Hunt Batjer, MD, FACS
Ralph G. Dacey Jr., MD

Fee: $450

Complimentary Registration for Candidates and Medical Students

This clinic 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
**004**

3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base

Room 301, Colorado Convention Center

**DIRECTOR:** Albert L. Rhoton Jr., MD

This course will provide three-dimensional microsurgical instruction on anatomy and approaches through the temporal bone; cerebellum and fourth ventricle; far lateral and transcondylar approaches; approaches to the cerebellopontine angle, and anatomy and approaches to the jugular foramen.

**Fee:** $450

Complimentary Registration for Candidates and Medical Students

**LEARNING OBJECTIVES:**

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

- Discuss anatomy and approaches through the temporal bone
- Discuss approaches to the cerebellum and fourth ventricle
- Discuss far lateral and transcondylar approaches
- Discuss approaches to the cerebellopontine angle
- Discuss anatomy and approaches to the jugular foramen

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**006**

Coding, Compliance and Revenue Issues in Spine Coding

Room 402, Colorado Convention Center

**DIRECTOR:** Joseph S. Cheng, MD, MS

**FACULTY:**

- R. Patrick Jacob, MD, FACS
- Robert R. Johnson II, MD, FACS
- John G. Piper, MD
- Kim Pollock, RN, MBA
- John Kevin Ratliff, MD, FACS
- John A. Wilson, MD, FACS

**Fee:** $450

Complimentary Registration for Candidates and Medical Students

This course will cover spine surgery CPT codes and case examples from the simple to the very complex. Minimally invasive and innovative spine surgery techniques and how to code new technology will be discussed in detail. Learn how to code accurately for surgical procedures such as across spinal regions and those where an approach surgeon is used. We will show you how to easily determine which code you would bill even though the code descriptions are often confusing.

**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

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**007**

Update on Malignant Brain Tumors for the General Neurosurgeon

Room 401, Colorado Convention Center

**CO-DIRECTORS:**

- Andrew Thomas Parsa, MD, PhD
- Michael William Weaver, MD

**FACULTY:**

- Manish K. Aghi, MD
- Anthony L. Asher, MD, FACS
- Richard W. Byrne, MD
- Alexandra J. Golby, MD
- Frederick F. Lang Jr., MD
- Linda M. Liao, MD, PhD
- Russell R. Lonser, MD
- Isaac Yang, MD

**Fee:** $570

Complimentary Registration for Candidates and Medical Students

This clinic 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:

- Review the CPT and coding changes for 2011
- Describe how CPT coding affects the neurosurgeon’s revenue and compliance with current rules
- Explain the differences in charges and revenue for a primary surgeon, co-surgeon, or assistant surgeon and what the documentation requirements should be
- Discuss documentation issues in an operative report to support all the codes billed and appeal payor denials
008  Evaluation and Management of Degenerative Deformity in the Lumbar Spine

Room 403, Colorado Convention Center

DIRECTOR: Tyler Robert Koski, MD

FACULTY: Frank L. Acosta Jr., MD
Peter Douglas Angevine, MD, MPH
Patrick C. Hsieh, MD
Charles Kuntz IV, MD
Frank La Marca, MD
Praveen V. Mummamaeni, MD
Brian A. O’Shaughnessy, MD
Daniel M. Sciubba, MD

Fee: $450

This is a practical clinic where issues related to the neurosurgical management of scoliosis will be reviewed.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss detailed anatomy associated with each surgical approach
• Explain the risks associated with local anatomy from each surgical approach

010  Update on Spine Trauma Management

Room 405, Colorado Convention Center

CO-DIRECTORS: Michael G. Fehlings, MD, PhD
James S. Harrop, MD

FACULTY: Richard G. Ellenbogen, MD, FACS
Michael G. Kaiser, MD, FACS
Allan D. Levi, MD, PhD
Timothy C. Ryken, MD
Christopher I. Shaffrey, MD

Fee: $450

The objective of this course is to familiarize surgeons with the acute management of the traumatic spinal column and cord injured patient. Specifically the course will discuss the timing and treatment of the acute spinal cord injured patient with discussions on 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 case situations.

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 relative to timing of decompression procedures
• Overview present SCI trials and treatment strategies
• Discuss and detail age specific injury patterns in the SCI population (pediatric vs geriatric)
• Review through case examples optimal treatment strategies in the care of SCI patients

009  Anatomy and Surgical Approaches to the Spine

Room 404, Colorado Convention Center

DIRECTOR: Dean Barone, PA-C MPAS

FACULTY: Robert F. Heary, MD
Brian Jooheen Jian, MD, PhD
Richard P. Schlenk, MD

Fee: $450

This seminar will teach the participant detailed anatomy about the spine. It will also detail many different surgical approaches to spine surgery and the specific anatomy associated with each approach.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss detailed anatomy of the spine
• Compare and contrast different surgical approaches utilized in spine surgery

Residents: Are you the NEUROSURGICAL TOP GUN?

Prove it in the AANS neurosurgical competition for residents and fellows located in booth #2327 in the exhibit hall! For the sixth consecutive year, the Young Neurosurgeons Committee will host this three day event which includes stations with image guided lumbar pedicle screw, bone scalpel, virtual thoracic vertebroplasty and virtual ventriculostomy. Each participant has one opportunity at each intricate and demanding surgical station and is scored on his or her performance. The resident or fellow with the best combined score will be awarded the distinct honor of being the NEUROSURGICAL TOP GUN and a prize of $1000.

Be one of the first 50 participants and receive a Top Gun t-shirt!
Sunday, April 10

PRACTICAL CLINICS
8:00 AM – 5:00 PM

011 Cranial Endoscopy: State-of-the-Art
Rooms 108, 110, 112, Colorado Convention Center
DIRECTOR: Alan R. Cohen, MD, FACS
FACULTY:
Biji Bahujeyan, MD
Jacques Caemaert, MD, Prof
J. Andre Grotenhuis, MD, PhD
Costas G. Hadjipanayis, MD, PhD
Nakama Hayashi, MD, PhD
Carl B. Heilman, MD
Tenoch Herrada Pineda, MD
Henry W. S. Schroeder, MD, PhD
Theodore H. Schwartz, MD
Laligam N. Sekhar, MD, FACS
Mark M. Souweidane, MD
John C. Wellons III, MD
Fee: $1,500
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

Room 405, Colorado Convention Center
CO-DIRECTORS: Geoffrey T. Manley, MD, PhD
Shelly D. Timmons, MD, PhD
FACULTY:
Julian E. Bailes Jr., MD
Robert C. Cantu, MD, FACS
William M. Coplin, MD
Raj K. Narayan, MD
Fee: $570
This clinic emphasizes case studies and covers the significant breadth of the field of neurotrauma and critical care. It will emphasize on practical, as well as complex case management issues. In the afternoon, you will have hands on instruction in techniques and devices for ICP monitoring, Parenchymal oxygen monitoring and decompressive cranietomy.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Describe the ICU management of the TBI patient
• Describe the current surgical controversies in the management of the brain injured patient
• Identify the current concepts in dealing with brain injured athletes
• Discuss management challenges of mild traumatic brain injury and concussion
• Recognize the role of the neurosurgeon in a trauma center and trauma systems

3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base
Room 301, Colorado Convention Center
DIRECTOR: Albert L. Rhoton Jr., MD
Fee: $450
Complimentary Registration for Candidates and Medical Students

This course will provide three-dimensional microsurgical instruction on anatomy and approaches through the temporal bone; cerebellum and fourth ventricle; far lateral and transcondylar approaches; approaches to the cerebellopontine angle; and anatomy and approaches to the jugular foramen.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss anatomy and approaches through the temporal bone
- Review approaches to the cerebellum and fourth ventricle
- Discuss far lateral and transcondylar approaches
- Explain approaches to the cerebellopontine angle
- Discuss anatomy and approaches to the jugular foramen

014
Negotiating with Hospitals: Challenging the Experts

Room 203, Colorado Convention Center

CO-DIRECTORS:
E. Hunter Dyer, MD
M. Sean Grady, MD

FACULTY:
Troy D. Payner, MD
Timothy C. Ryken, MD
Ann R. Stroink, MD

Fee: $450

This course will provide case studies of both success and failure from neurosurgeons that negotiated with hospitals. Building on the information presented in previous years, the course will allow participants to gain 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. Special attention is paid to the interwoven financial relationships between hospitals and neurosurgeons and how best to leverage a neurosurgeon’s value to his/her hospital in negotiating resources. All course participants will be requested to submit their own hospital negotiation case studies for discussion of the highly interactive and results oriented portion of the course.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the salient features of each operative approach
- Explain the decision making process regarding each approach
- Discuss the steps and potential complications/how to avoid complications of each approach

016
Minimally Invasive Treatment of Anterior Cranial Base Lesions

Rooms 205, 207, Colorado Convention Center

CO-DIRECTORS:
Jeffrey Thomas Keller, PhD
John M. Tew Jr., MD
Philip V. Theodosopoulos, MD

FACULTY:
Norberto Andaluz, MD
Khaled M. Azz, MD, PhD
Luigi M. Cavallo, MD
Ondrej Choutka, MD
Aaron A. Cohen-Gadol, MD
John Joseph DePowell, MD
Roberto Jose Diaz, MD
Sebastien Froelich, MD
Andrew W. Grande, MD
Charles Teo, MD
Lee Zimmerman, MD, PhD
Mario Zuccarelli, MD

Fee: $650

The purpose of the course is to familiarize participants to various minimally invasive (MI) approaches to the anterior or cranial base. There will be a special emphasis on treatment of tumors and vascular lesions. The participants will have hands-on exposure/experience to all minimally invasive approaches, including minipteroinal, supra-transorbital, transsphenoidal and expanded transsphenoidal, and interhemispheric approaches.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the salient features of each operative approach
- Explain the decision making process regarding each approach
- Discuss the steps and potential complications/how to avoid complications of each approach

018
Thoracic and Lumbar Stabilization and Fusion: Indications and Complications

Rooms 302, 303, Colorado Convention Center

CO-DIRECTORS:
Regis W. Haid Jr., MD
Christopher I. Shaffrey, MD

FACULTY:
Paul M. Arnold, MD, FACS
Dean Chou, MD
Larry T. Khoo, MD
Charles Kurtz IV, MD
019
Management of Incidental Imaging Findings
Room 304, Colorado Convention Center

CO-DIRECTORS:
Kevin O. Lilehei, MD
R. Michael Scott, MD

FACULTY:
Sepideh Amin Hanjani, MD
Douglas L. Brockmeyer, MD
William F. Chandler, MD, FACS
William T. Couldwell, MD, PhD
Arthur L. Day, MD, FACS
Stephen J. Haines, MD
Cormac O. Maher, MD
Mark R. Proctor, MD
Daniel K. Resnick, MD

Fee: $450

In a point/counter point and case based format, 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 other findings will be discussed. The appropriate management will be reviewed and emphasized with case illustrations.

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
• Review open and minimally invasive approaches for lumbar interbody fusion (ALIF, TLIF, PLIF)
• Discuss common complications and management associated with thoracic and lumbar fusion

020
Interventional Neurovascular Disease: Avoidance and Management of Complication
Room 401, Colorado Convention Center

CO-DIRECTORS:
Brian L. Hoh, MD
Charles Joseph Prestigiacomo, MD, FACS

FACULTY:
Felipe C. Albuquerque, MD
Rocco A. Armonda, MD
Ketan R. Bulsara, MD
C. Michael Cawley, MD, FACS
Peng Roc Chen, MD
J D. Mocco, MD
B. Gregory Thompson Jr., MD

Fee: $450

Complimentary Registration for Candidates and Medical Students

A comprehensive discussion of complications and complication avoidance in the endovascular management of cerebral aneurysms, AVMs/AVFs, spinal AVMs, tumor and special problems encountered with treatment in the endovascular suite, will be discussed.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Evaluate and apply strategies when endovascular complications occur
• Discuss the treatment of intracranial aneurysms, AVMs, occlusive cerebrovascular disease and tumors
• Apply these procedures to avoid complications and effectively manage the complications
• Identify problems which are peculiar to treatments in the endovascular suite

021
Coding, Compliance and Revenue Issues in Cranial, Non-Spine and E&M Coding
Room 402, Colorado Convention Center

DIRECTOR:
Joseph S. Cheng, MD, MS

FACULTY:
R. Patrick Jacob, MD, FACS
Robert R. Johnson II, MD, FACS
John G. Piper, MD
Kim Pollock, RN, MBA
John Kevin Ratliff, MD, FACS

Fee: $450

Complimentary Registration for Candidates and Medical Students

This course will cover the most common aspects of cranial procedure coding, such as brain tumor, acoustic neuroma, aneurysm, skull base tumors, traumatic brain injuries, including hematomas and decompressive procedures and skull base surgery. Learn how to code for innovative cranial procedures such as endoscopic skull base surgery.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Review the CPT and coding changes for 2011
• Describe how CPT coding affects the neurosurgeon’s revenue and compliance with current rules
• Explain the differences in charges and revenue for a primary surgeon, co-surgeon, or assistant surgeon and what the documentation requirements are
• Discuss documentation issues in an operative report to support all the codes billed and appeal payor denials
Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation

Room 404, Colorado Convention Center

Co-Directors:
Line Jacques, MD
Robert J. Spinner, MD, FACS

Faculty:
Allan H. Friedman, MD, FACS
Holly S. Gilmer, MD
Allen H. Maniker, MD
John E. McGillicuddy, MD
Rajiv Midha, MD, MS, FRCS
Christopher J. Winfree, MD
Lynda Jun san Yang, MD, PhD
Eric L. Zager, MD

Fee: $450

Complimentary Registration for Candidates and Medical Students

This clinic will provide an overview of the neurosurgeon’s approach to patients with peripheral nerve injuries, entrapments and tumors.

Learning Objectives:
After completing this educational activity, participants should be able to:
- Discuss indications for the timing of and types of operative intervention on peripheral nerve injuries.
- Discuss patho-anatomy, clinical presentation and management of common entrapments in the upper and lower limbs.
- Explain the indications for and approaches to operative interventions on different types of benign and malignant peripheral nerve tumors.
- Explain the role of preoperative and intraoperative electrophysiology in the management of patients with these common peripheral nerve lesions.

Spinal Stabilization, Fusion and Instrumentations: Biomechanics and Techniques

Rooms 702, 704, Colorado Convention Center

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

Faculty:
Charles L. Branch Jr., MD
Virany H. Hilliard, MD
Adam S. Kanter, MD
Eric W. Nottmeier, MD
Naresh P. Patel, MD
Nicholas Theodore, MD
Eve C. Tsai, MD, PhD

Fee: $450

Complimentary Registration for Candidates and Medical Students

This clinic will illustrate various radiosurgery methods currently available.

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.
- Discuss indications of radiosurgery for functional disease of the brain.
- Explain differences among the various radiosurgery techniques available.
**PRACTICAL CLINICS**

1:00 – 5:00 PM

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**013 Transfacet Technology: An Alternative to Pedicle Screw Fixation with Interbody Techniques**

Room 201, Colorado Convention Center

**CO-DIRECTORS:**
- Randy O. Kritzer, MD
- Brian R. Subach, MD, FACS

**FACULTY:**
- Edward C. Benzel, MD
- Larry T. Khoo, MD
- Kenneth I. Renkens, MD

Fee: $750

Both the biomechanical properties and clinical applications of transfacet screw technology will be discussed as it relates to ALIF, TLIF and PLIF procedures. During the hands-on portion, participants will be able to do sawbone trials of all the techniques discussed.

**LEARNING OBJECTIVES:**

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

- Identify the biomechanical properties of transfacet screws as compared to pedicle screw constructs
- Discuss clinical applications so that surgeons will be aware of indications
- Discuss the techniques presented
- Apply the techniques into their physician practices

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**028 Deep Brain Stimulation: Update and New Directions**

Rooms 302, 303, Colorado Convention Center

**CO-DIRECTORS:**
- Aviva Abosch, MD, PhD
- Stephen B. Tatter, MD, PhD

**FACULTY:**
- Ellen L. Air, MD, PhD
- Roy A. E. Bakay, MD
- Nicholas M. Boulis, MD
- Patrick J. Connolly, MD
- Brian H. Kopell, MD
- Alon Y. Mogilner, MD, PhD

Joseph S. Neimat, MD
Joshua M. Rosenow, MD
Ashwini D. Sharan, MD

Fee: $450

Practical aspects of surgery for the treatment of Parkinson’s disease, tremor and dystonia will be presented via lectures, videos, case presentations and device demonstrations. 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 with the audience and faculty.

**LEARNING OBJECTIVES:**

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

- Evaluate patients for surgery for Parkinson’s disease, tremor and dystonia
- Apply the principles and techniques of DBS and lesioning surgeries
- Identify anatomical and physiological localization of the STN, GPI and thalamus
- Discuss emerging indications for DBS such as medically refractory obsessive compulsive disorder

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**029 Max Out the Web to Improve Your Practice**

Room 706, Colorado Convention Center

**CO-DIRECTORS:**
- Chaim B. Colen, MD, PhD
- Ann R. Stroink, MD

**FACULTY:**
- J. Bradley Bellotte, MD
- Joseph S. Cheng, MD, MS
- Benjamin Paul Rosenbaum, MD

Fee: $450

This practical course will cover aspects of web design that can help you maximize the web in your practice! The program will be divided into a didactic portion that “surfs” topics such as e-learning, using social media, and a hands-on skills section that allows you to design, or redesign, your website to meet your needs. In addition, we will discuss new technologies, online marketing of your practice, search engine optimization, improving your presence in the community, and other important topics for using the web in your practice!

**REQUIREMENTS:**

Use of your iPod touch® for our fun-filled, hands-on session will magnify your learning experience.

You should know how to search the web, read and navigate email. Knowledge of html, C++, or similar languages is NOT a requirement for this course.

**LEARNING OBJECTIVES:**

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

- Identify and discuss current web-based technologies that can improve your efficiency and increase patient satisfaction
- Utilize programs and software to enhance your neurosurgery practice
- Discuss the importance of optimizing your web design to gain a web based presence, by using social media and Search Engine Optimization (SEO) to improve online visibility of your practice
- Identify algorithms to improve your search ability and successfully reach out to the patient community
- Identify the importance of the web in collecting patient outcomes as related to patient referrals and negotiations with insurers

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**030 Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon**

Room 402, Colorado Convention Center

**CO-DIRECTORS:**
- Craig H. Rabb, MD, FACS
- Patricia B. Rakson, MD

**FACULTY:**
- Ahmed E. Badr, MD
- Perry A. Ball, MD, FACS
- Kathryn Marie Beauchamp, MD
- Kevin J. Gibbons, MD, FACS
- David O. Okonkwo, MD, PhD
- Sherry L. Taylor, MD, PhD
- Philip Andrew Villanueva, MD

Fee: $450

Complimentary Registration for Candidates and Medical Students

This course is designed for the practicing neurosurgeon, to provide a refresher and update on critical care of the neurosurgical trauma patient in the ICU. The primary focus of this course is in the area of non-neuro
critical care, including ventilator management, fluids, nutrition, infectious disease, sedation issues, and DVT prevention.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss contemporary ventilator management, lung protective strategies, and prone ventilation
• Discuss types of nutrition and impact of timing of nutrition in the head injured patient
• Describe types and methods of fluid resuscitation and management in the trauma patient with head injury
• Describe contemporary diagnosis and management; a broad spectrum of medical issues, including infectious disease, endocrine problems, renal function and “never” events

031 Choosing and Developing a Neurosurgical Practice
Room 404, Colorado Convention Center

CO-DIRECTORS:
Kathryn Marie Beauchamp, MD
Edward Robert Smith, MD

FACULTY:
Joshua J Beardsley, PA-C
Lawrence S. Chin, MD, FACS
William T. Couldwell MD, PhD
J. Nozipo Maraire, MD
Gregory J. Zipfel, MD

Fee: $450
Complimentary Registration for Candidates and Medical Students

This course will cover the basics of starting a neurosurgery practice upon finishing a residency. Topics will include office management, billing and coding, medical pitfalls, government regulations and building a practice.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss HIPAA and how it applies to their practice
• Discuss what actions place them at risk for a lawsuit and how to avoid them
• Explain proper coding for the most common operations

032 Operative Nuances for Cranial and Skull Base Procedures: A Cadaveric and Case Based Microsurgical 3-D Video Presentation
Room 301, Colorado Convention Center

CO-DIRECTORS:
Aaron A. Cohen Gadol, MD
R. Shane Tubbs, PhD

FACULTY:
Arthur L. Day, MD, FACS
Johnny B. Delashaw Jr., MD
Cormac O. Maher, MD
Troy D. Payner, MD
B. Gregory Thompson Jr., MD
Harry R. van Loveren, MD

Fee: $450
Complimentary Registration for Candidates and Medical Students

This course will provide an intensive review of the nuances involved with cranial and skull base procedures via primarily neuroanatomical, cadaveric and intraoperative surgical video presentations. Following the review of each craniotomy approach, the intradural methods of commonly performed procedures for the corresponding approach will be discussed. The faculty will provide the audience with “pearls” from their surgical experience for each approach discussed.

The surgical approaches reviewed would include the variations of pterional (clinoidectomy), orbitozygomatic, suboccipital, retrosigmoid and petrosal craniotomies. Please note the participants will receive a complimentary human skull from the course for their use in future surgical planning.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the components of a successful office practice
• Explain how to evaluate a job opportunity
• Discuss the nuances of technique used in the above procedures
• Review common intradural skull base procedures
Update on Spinal Radiosurgery

Rooms 710, 712, Colorado Convention Center

CO-DIRECTORS:
Mark H. Bilsky, MD
Peter C. Gerszten, MD, MPH

FACULTY:
Lilyana Angelov, MD, FRCSC
Steven D. Chang, MD
Jason P. Sheehan, MD, PhD
Jason Andrew Weaver, MD
Kevin C. Yao, MD

Fee: $450
Complimentary Registration for Candidates and Medical Students

Current state of the art techniques in image guided surgery of the spine will be reviewed. Emphasis will be placed on the current indications for 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 spine radiosurgery
• Explain the current indications for and outcomes after spine radiosurgery
• Explain the relative contraindications to spine radiosurgery

Opening Reception

INVECO Field at Mile High
6:30-8:30 PM

Bussing will be available between 6:15 – 9:00 PM from all official AANS hotels.

INVECO Field at Mile High is the home of championship events and the AANS 2011 Opening Reception will be no different. You will have the opportunity to experience the newly renovated club level with fantastic views of Downtown Denver, while also enjoying the amazing sunset that only the Mile High City can provide. Savory food and tasty beverages will compliment the evening as guests are truly introduced to the “Gateway to the West.”

See page 26 for more information.
**Open vs. Endoscopic Approaches to the Anterior Skull Base**

Room 301, Colorado Convention Center

**MODERATOR:** Chandranath Sen, MD

**PANELISTS:**
- Ossama Al-Metty, MD
- Carlos A. David, MD
- Fred Gentili, MD
- Sandeep M. Kunwar, MD

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
  - Explain various approaches to the anterior skull base
  - List the advantages of using the endoscope for anterior skull base approaches
  - Discuss indications and limitations of endoscopic techniques

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**Resective Strategies for Epilepsy**

Room 404, Colorado Convention Center

**MODERATOR:** Lisa P. Mulligan, MD

**PANELISTS:**
- Frederick A. Boop, MD, FACS
- Gerald A. Grant, MD
- Dennis D. Spencer, MD

This seminar will examine the preoperative evaluation for surgery and 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

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**Coil vs. Clip for Intracranial Aneurysms**

Korbel Ballroom 1ABC, Colorado Convention Center

**MODERATOR:** Adel M. Malek, MD, PhD

**PANELISTS:**
- Rocco A. Armonda, MD
- Hildo R.C. Azevedo-Filho, MD
- C. Michael Cawley, MD, FACS
- David M. Hasan, MD
- Demetrius K. Lopes, MD

Complimentary Registration for Candidates and Medical Students

This seminar will highlight the current controversies surrounding the optional management of ruptured and unruptured intracranial aneurysms. 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:
  - Analyze individual patients and make more informed treatment recommendations
  - Evaluate available data and determine their significance for ruptured and unruptured intracranial aneurysms
  - Assess treatment failures in intracranial aneurysms
  - Assemble strategies for salvage of intracranial aneurysms

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**Peripheral Nerve Entrapment Syndromes**

Korbel Ballroom 4DEF, Colorado Convention Center

**MODERATOR:** Eric L. Zager, MD

**PANELISTS:**
- Allan J. Belzberg, MD
- Line Jacques, MD
- Robert J. Spinner, MD, FACS
- Lynda Jun san Yang, MD, PhD

Complimentary Registration for Candidates and Medical Students

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

105 Complications of Complex Spinal Surgery: Lessons Learned
Korbel Ballroom 2A/3A, Colorado Convention Center
MODERATOR: Ziya L. Gokaslan, MD, FACS
PANELISTS: Anthony K. Frempong Boadu, MD, John Joseph K nightly, MD, Anthony H. Sin, MD, Kevin C. Yao, MD

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

106 Spondylolisthesis: Controversies in Management
Korbel Ballroom 2B/3B, Colorado Convention Center
MODERATOR: Philip R. Weinstein, MD
PANELISTS: Harel Deutsch, MD, Robert F. Heary, MD, Paul J. Marcotte, MD, Daniel K. Resnick, MD

A complete discussion of spondylolisthesis with emphasis on degenerative spondylolisthesis including treatment and treatment failures will be the focus of this seminar.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Identify the various pathologies in myelopathy
- Distinguish the treatment (operative) options for cervical spondylotic myelopathy
- Review operative success/failure rates in cervical spondylotic myelopathy

107 Cervical Spondylotic Myelopathy
Korbel Ballroom 4ABC, Colorado Convention Center
MODERATOR: Ian H. Kalfas, MD
PANELISTS: Michael G. Kaiser, MD, FACS, Paul K. Maurer, MD, Praveen V. Mummmaneni, MD, Hiroshi Nakagawa, MD, Gerald E. Rodts Jr., MD

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 go over treatment options and guidelines.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss neurobiological basis of psychiatric disorders
- Discuss currently available surgical treatments
- Discuss indications of psychosurgery
- Discuss current results for psychosurgical procedures

108 Functional Neurosurgery for Psychiatric Illness
Room 207, Colorado Convention Center
MODERATOR: Michael Y. Oh, MD
PANELISTS: Aviva Abosch, MD, PhD, Paul S. Larson, MD, Kendall H. Lee, MD, PhD, Parag G. Patil, MD, PhD, Ali R. Rezai, MD

Complimentary Registration for Candidates and Medical Students

This seminar will address the issues of surgery for psychiatric illness. Indications for surgery and the therapeutic results for different procedures will be discussed.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss neurobiological basis of psychiatric disorders
- Discuss currently available surgical treatments
- Discuss indications of psychosurgery
- Discuss current results for psychosurgical procedures

109 Vertebral Column Tumors
Room 205, Colorado Convention Center
MODERATOR: Mark H. Bilsky, MD
PANELISTS: Peter C. Gerszten, MD, MPH, James S. Harrop, MD, Ehud Mendel, MD, FACS, Laurence D. Rhines, MD, Daniel M. Scuibba, MD

This seminar is intended to provide an overall review of management of both primary and metastatic spinal tumors. This should include thorough evaluation of patients, as well as various surgical resection/reconstruction technologies and state of the art radiation therapy options.
LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Explain the differences in the approach to metastatic and primary spine tumors
- Discuss the difference between percutaneous cement augmentation and open surgery in the treatment of instability
- Discuss whether en bloc resection is the whole answer in primary bone tumors
- Explain how or if spinal radiosurgery has changed the treatment of metastatic spine tumors
- Discuss whether botox injections have helped postoperative muscle spasm and postradiation fibrosis

110 Surgical Approaches to the Lateral Skull Base
Room 203, Colorado Convention Center
MODERATOR: Jeffrey J. Olson, MD
PANELISTS: Jeremy N. Ciporen, MD
John G. Golfinos, MD
Joung H. Lee, MD
Laligam N. Sekhar, MD, FACS
William Alex Vandergrift, MD

This seminar will address both commonly used and unusual surgical approaches to the lateral skull base and how to avoid complications.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the pathologic processes best addressed by lateral skull base surgical approaches
- Discuss the strengths and weakness of a lateral skull base approach for a given pathologic process
- Describe the technical aspects of standard and unusual lateral skull base approaches
- Identify the most common complications to the lateral skull base and steps to take before, during and after surgery to avoid them

111 Beginning Your Academic Career: Answers to Your Questions
Room 405, Colorado Convention Center
MODERATOR: Robert J. Dempsey, MD
PANELISTS: Ann Christine Duhaine, MD
Jeffrey R. Leonard, MD
Shenandoah Robinson, MD

Complimentary Registration for Candidates and Medical Students
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.

Audience question format is oral or written.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Explain future trends in academia
- Discuss career management in academia with experts
- Discuss the future of academic medicine

112 Neuromodulation for Chronic Pain
Room 406, Colorado Convention Center
MODERATOR: Christopher J. Winfree, MD
PANELISTS: Kenneth A. Follett, MD, PhD
George T. Mandybur, MD
Alon Y. Mogilner, MD, PhD
Julie G. Pilitsis, MD, PhD
Joshua M. Rosenow, MD

Complimentary Registration for Candidates and Medical Students

This course is designed to stimulate interest in the field of neurosurgical pain management. This course will provide participants with detailed instruction in both the theory and application of a variety of neuromodulation techniques, including spinal cord stimulation, spinal nerve root stimulation, cranial nerve stimulation, motor cortex stimulation, and deep brain stimulation.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Discuss the difference between 2-D and 3-D video
- Discuss the special and additional technology that is required to acquire and produce 3-D video
- Compare and contrast the different display methods for using this 3-D video for enhancing education
- Discuss how the special tools of 3-D video can provide greater content for neurosurgical education
- Discuss how the increased content displayed with 3-D video can be used to improve the practice of neurosurgery
114
Professionalism and Ethics Topic Reviews Including: Invasive Brain Testing, Corporate Practice of Medicine and Collaboration with Industry
Room 201, Colorado Convention Center
MODERATOR:
Patrick W. McCormick, MD, FACS
FACULTY:
Kara Dawn Beasley, DO
Jaimie M. Henderson, MD
Paul Jason Ford, PhD
Richard N. Wohns, MD

This course is comprised of lectures and discussion focused on the ethics of awake brain testing including respect for patients, innovation and research; on the ethical implications of hospital employment of physicians and conflicts of interest with an emphasis on the corporate practice of medicine doctrine, and on the AANS position statement on the neurosurgeon’s interface with medical device manufacturers.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Analyze and evaluate the ethical challenges of transparency, truth telling, and therapeutic privilege in cases of awake procedures
• Explain the ethical challenges and responsibilities related to invasive testing in boundary cases between innovation and research
• Recognize the professional obligations to account for and offset various categories of patient vulnerability in neurosurgical practice
• Describe critical ethical concerns and potential conflicts of interest related to hospital employment of physicians
• Explain the key elements of the AANS guidelines for collaboration with industry

MODERATOR:
Nelson M. Oyesiku, MD, PhD
FACULTY:
Charles L. Branch Jr., MD
Erica D. Cleveland
Warren R. Selman, MD

The panelists will describe and discuss the MOC process, current standards and future implementation of MOC. Current and future ABNS diplomates will find the session instructive.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the rationale and process of MOC and demonstrate how to collect data from their clinical practice to meet the requirements of MOC
• Describe the current standards and future trends of the MOC process

116
If I Could Do That Case Over Again: Discussion of Complications of Cranial Surgery
Room 407, Colorado Convention Center
MODERATOR:
John Diaz Day, MD
PANELISTS:
David A. Kumpe, MD
Anil Nanda, MD, FACS
Marian L. Walker, MD

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

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss strategies for establishing the mid-level role in a new setting
• Identify three key elements of contract negotiation
• Analyze the debate surrounding mid-levels performing invasive neurological procedures
• Compare and contrast malpractice insurance policies

118
Osteoporosis and Spinal Fusion Surgery
Room 403, Colorado Convention Center
MODERATOR:
Deborah L. Benzil, MD
PANELISTS:
Edward C. Benzel, MD
R. Patrick Jacob, MD, FACS
Micol S Rothman, MD
Gregory R. Trost, MD
Peter Witt, MD

This course will provide a state-of-the-art update on diagnosis, pathophysiology, medical management and pre-operative treatment of osteoporosis as well as exploring the implications for spinal surgery and spinal fusion. The course will help neurosurgeon decision making that occurs in everyday office practice with the aging of the population. Experts will also share their tricks of avoiding complication when fusions are necessary in patients with osteoporosis.

117
Professional Issues: Challenges and Opportunities for the Neurosurgical Mid-level Practitioner
Room 304, Colorado Convention Center
MODERATOR:
Twylia Lay, NP, MS

This dynamic and interactive seminar will allow a forum for participant discussion of unique challenges to neurosurgical practice. The seminar will encourage participants to discuss situations and strategies for establishing your practice, art of contract negotiation, credentialing, privileging associated with invasive procedures and review of malpractice insurance coverage.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the rationale and process of MOC and demonstrate how to collect data from their clinical practice to meet the requirements of MOC
• Describe the current standards and future trends of the MOC process

115
Maintenance of Certification: Streamlining the Process
Korbel Ballroom 1DEF, Colorado Convention Center

This course is comprised of lectures and discussion focused on the ethics of awake brain testing including respect for patients, innovation and research; on the ethical implications of hospital employment of physicians and conflicts of interest with an emphasis on the corporate practice of medicine doctrine, and on the AANS position statement on the neurosurgeon’s interface with medical device manufacturers.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Analyze and evaluate the ethical challenges of transparency, truth telling, and therapeutic privilege in cases of awake procedures
• Explain the ethical challenges and responsibilities related to invasive testing in boundary cases between innovation and research
• Recognize the professional obligations to account for and offset various categories of patient vulnerability in neurosurgical practice
• Describe critical ethical concerns and potential conflicts of interest related to hospital employment of physicians
• Explain the key elements of the AANS guidelines for collaboration with industry

MODERATOR:
Nelson M. Oyesiku, MD, PhD
FACULTY:
Charles L. Branch Jr., MD
Erica D. Cleveland
Warren R. Selman, MD

The panelists will describe and discuss the MOC process, current standards and future implementation of MOC. Current and future ABNS diplomates will find the session instructive.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the rationale and process of MOC and demonstrate how to collect data from their clinical practice to meet the requirements of MOC
• Describe the current standards and future trends of the MOC process

This dynamic and interactive seminar will allow a forum for participant discussion of unique challenges to neurosurgical practice. The seminar will encourage participants to discuss situations and strategies for establishing your practice, art of contract negotiation, credentialing, privileging associated with invasive procedures and review of malpractice insurance coverage.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss strategies for establishing the mid-level role in a new setting
• Identify three key elements of contract negotiation
• Analyze the debate surrounding mid-levels performing invasive neurological procedures
• Compare and contrast malpractice insurance policies
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
• Describe techniques for avoiding complications in spinal surgery when treating patients with osteoporosis

119
Return to Play after Sports Injury
Room 402, Colorado Convention Center
MODERATOR:
Mark D. Krieger, MD
PANELISTS:
Julian E. Bailes Jr., MD
H. Hunt Batjer, MD, FACS
Richard G. Ellenbogen, MD, FACS
Robert J. Spinner, MD, FACS
Brian R. Subach, MD, FACS

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

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the standard tests and techniques for evaluating the injured athlete
• Explain the pathophysiology of sports related injuries of the head, spine, and peripheral nerves
• Apply the data and expert opinion on return to play guidelines to their practice

120
Developing New Technology: Bringing Device to Market
Room 401, Colorado Convention Center
MODERATOR:
Matthew A. Howard III, MD
PANELISTS:
John R. Adler Jr., MD
Richard D. Bucholz, MD, FACS
Kevin T. Foley, MD
Michael W. McDermott, MD

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

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Explain the steps necessary to file a patent
• Discuss the steps necessary to develop prototypes
• Discuss the steps necessary to negotiate with industry
• Discuss regulatory issues

121
Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery
Room 303, Colorado Convention Center
MODERATOR:
Christopher M. Loftus, MD, FACS
PANELISTS:
Michael G. Fehlings, MD, PhD
Hugh J. L. Garton, MD, MHSc
Bruce Tranmer, MD

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 affects of Coumadin
• Discuss when it is safe to restart Coumadin after neurosurgery procedures
• Discuss most DVT prophylaxis measures

122
Developing Philanthropy to Fund Academic Programs and Research
Room 302, Colorado Convention Center
MODERATOR:
Edie E. Zusman, MD, FACS
PANELISTS:
Mitchel S. Berger, MD, FACS
Robert F. Heary, MD
Neil A. Martin, MD
Ann R. Stroink, MD

With the current economics of health care, leading neurosurgeons from community practices, group practices and academics have recognized the value of philanthropy as the lowest overhead source of needed revenue to fund patient care programs, research and faculty salaries. Experts from around the nation will come together for the first time to show the successful and ethical ways they have raised money to help balance the bottom line for their practices and programs.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Develop new program revenue sources through philanthropy
• Describe structuring directed gifts for neurosurgery
• Identify new opportunities for research funding
• Discuss strategies for ethical corporate donations
• Discuss how to motivate individuals to participate as donors

COFFEE BREAK IN EXHIBIT HALLS A, B & C, COLORADO CONVENTION CENTER
9:00 – 9:45 AM

Plenary Session I
9:45 AM – 1:00 PM
MODERATORS
William T. Couldwell, MD, PhD
Matthew A. Howard III, MD
Four Seasons Ballroom, Colorado Convention Center
Welcome Note
9:45 – 9:50 AM
SPEAKER
Matthew A. Howard III, MD

Rhoton Family Lecture
The Quiet Revolution: Retractorless Surgery
9:51 – 10:14 AM
INTRODUCED BY
Robert E. Harbaugh, MD, FACS
SPEAKER
Robert F. Spetzler, MD

600 Surgical Results of the Carotid Occlusion Surgery Study (COSS)
10:15 – 10:29 AM
AUTHORS
Robert L. Grubb Jr., MD (St. Louis, MO); William J. Powers, MD (Chapel Hill, NC); William R. Clarke, PhD; Harold P. Adams Jr., MD (Iowa City, IA); Tom O. Videen, PhD; Colin P. Derdeyn, MD (St. Louis, MO)
DISCUSSANT
Gary K. Steinberg, MD, PhD

601 Risk Factors for Major Perioperative Complications in Adult Spinal Deformity Surgery
10:30 – 10:44 AM
AUTHORS
Praveen V. Murmaneni, MD (San Francisco, CA); Justin S. Smith, MD, PhD; Christopher Shaffrey, MD (Charlottesville, VA); Frank Schwab, MD; Nicola Hawkins, RNFA; Virginie Lafage, PhD (New York, NY); Robert Hart, MD (Portland, OR); Gregory Mundis, MD (La Jolla, CA); Douglas Burton, MD (Kansas City, KS); Breton Line, BS (Denver, CO); Behrooz Akbarnia, MD (La Jolla, CA); Oheneba Boachie Adjei, MD (New York, NY); Richard Hostin, MD (Plano, TX); Kirkham Wood, MD (Boston, MA); Shay Bess, MD (Denver, CO)
DISCUSSANT
Edward C. Benzil, MD

Hunt Wilson Lecture
Brain Tumors – It’s All About Where You are Born
10:45 – 11:04 AM
INTRODUCED BY
William T. Couldwell, MD, PhD
SPEAKER
Richard Gilbertson, MD, PhD

International Abstract Award 602
Intraoperative MRI Guided vs. Conventional Microsurgical Brain Tumor Resection Results of a Prospective Randomized Trial
11:05 – 11:19 AM
AUTHORS
Christian Senft, MD; Andrea Bink, MD; Kea Franz, MD; Thomas Gasser, MD, PhD; Volker Seifert, MD, PhD (Frankfurt, Germany)
DISCUSSANT
Mitchel S. Berger, MD, FACS

Distinguished Service Award Recipient
11:20 – 11:22 AM
INTRODUCED BY
James T. Rutka, MD, PhD
RECIPIENT
Thomas A. Marshall

AANS International Lifetime Recognition Award
11:23 – 11:25 AM
INTRODUCED BY
James T. Rutka, MD, PhD
RECIPIENT
Shigeaki Kobayashi, MD

603 Prevalence and Natural History of Pineal Cysts in Adults
11:26 – 11:40 AM
AUTHORS
Samuel Terman, BS; Wajd N. Al Holou, MD; Craig Kilburg, BS; Hugh J. Garton, MD, MHS; Cormac O. Maher, MD (Ann Arbor, MI)
DISCUSSANT
Jeffrey N. Bruce, MD, FACS

Ronald L. Bittner Award on Brain Tumor Research
604 Vaccination with Dendritic Cells Pulsed with Autologous Tumor Lysate is Associated with Prolonged Overall Survival Compared to Dendritic Cells Loaded with Tumor Associated Antigens: Results from Prospective Phase 1 Clinical Trials
11:41 – 11:55 AM
AUTHORS
Isaac Yang, MD; Won Kim, MD; Arthur Chou, MD, PhD; Brendan Fong, BS; Michael Safaee, BS; Robert M. Prins, PhD; Linda M. Liau, MD, PhD (Los Angeles, CA)
DISCUSSANT
Andrew Thomas Parasa, MD, PhD

605 Cervical Decompression Surgery without Intraoperative Monitoring
11:56 AM – 12:10 PM
AUTHORS
Vincent Traynelis, MD; Sarah Bender, MS (Chicago, IL); Katie Leick, BS; Kingsley O. Abode-iyamah, BS; Jeremy Greenlee, MD (Iowa City, IA)
DISCUSSANT
William C. Welch, MD, FACS

Presidential Address
Discovering Neurosurgery: New Frontiers
12:11 – 1:00 PM
INTRODUCED BY
Mitchel S. Berger, MD, FACS
SPEAKER
James T. Rutka, MD, PhD
Scientific Session I – Tumor
2:00 – 5:30 PM
Korbel Ballroom 1ABC, Colorado Convention Center
This session will focus on innovations in the diagnosis, management and treatment of tumor neurosurgery. Innovations which have been developed in the last twelve months will be presented.

MODERATORS
Jeffrey N. Bruce, MD, FACS
Michael W. McDermott, MD

Ronald L. Bittner Lecture
Neurosurgical Management of Brain Metastases: A Personal Perspective
2:00 – 2:29 PM
SPEAKER
Raymond Sawaya, MD

Journal of Neuro-Oncology Award
610
NFkBIA in Glioblastomas: Tumor Suppressor and Potent Predictor of Outcome
2:30 – 2:54 PM
AUTHORS
Griffith R. Harsh IV, MD (Palo Alto, CA); Denise M. Scholtens, PhD; Ajay K. Yadav, PhD; James R. Chandler, MD (Chicago, IL); Maria S. Carro, PhD (Freiburg, Germany); Claudia Bredel, PhD (Chicago, IL); Pierre A. Robe, MD, PhD (Liege, Belgium); Kenneth D. Aldape, MD (Houston, TX); Arnab Chakravarti, MD (Columbus, OH); Markus Bredel, MD, PhD (Birmingham, AL)
DISCUSSANT
Ennio Antonio Chiocca, MD, PhD

Development and Validation of a Robust Predictive/Prognostic Gene Signature for Glioblastoma Patients
2:55 – 3:09 PM
AUTHORS
Pascal O. Zinn, MD; Deepa Kushwaha, PhD; Kimberly Ng, MS; Debbie Koay, PhD; Shan Zhu, PhD; Rivka R. Colen, MD; Ekkehard M. Kasper, MD, PhD; Clark C. Chen, MD, PhD (Boston, MA)
DISCUSSANT
Frederick F. Lang Jr., MD

National Brain Tumor Foundation Mahaley Award
612
Indocyanine Green Fluorescence Endoscopy for Visual Differentiation of Pituitary Tumor from Surrounding Structures
3:10 – 3:24 PM
AUTHORS
Zachary N. Litvack, MD, MS; Suzanne A. Tharin, MD, PhD; Edward R. Laws Jr., MD, FACS (Boston, MA)
DISCUSSANT
Edward H. Oldfield, MD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

Leksell Radiosurgery Award
613
Gamma Knife Radiosurgery of Meningiomas Located in the Posterior Fossa: Factors Predictive of Outcome and Recurrence
4:01 – 4:15 PM
AUTHORS
Robert M. Starke, MD, MSc; James H. Nguyen, BS; Jessica Rainey, BA; Brian J. Williams, MD; Jonathan H. Sherman, MD; Jesse Savage, MD, PhD; Chung Po Yen, MD; Jason P. Sheehan, MD, PhD (Charlottesville, VA)
DISCUSSANT
Ossama Al-Metty, MD

Initial Experience with Five – Aminolevulinic Acid for Fluorescence Guided Resection of Gliomas
4:16 – 4:30 PM
AUTHORS
Sanjay Bhatia, MD (Morgantown, WV); Matthew R. Quigley, MD; Frank Pu, MD, PhD; Khaled M. Azz, MD (Pittsburgh, PA)
DISCUSSANT
David W. Roberts, MD

Elevated 2-hydroxyglutarate (2-HG) in Human Glioma Samples Harboring the R132 Isocitrate Dehydrogenase 1 (IDH1) Mutation
4:31 – 4:45 PM
AUTHORS
Arthur P. Chou, MD, PhD; Shadi Lalezari, BS; Albert Lai, MD, PhD; Issac Yang, MD; Colin Buchanan, MD; Horacio Soto, BS; Shuguang Bi, PhD; Robert M. Prins, PhD; Linda M. Liu, MD, PhD (Los Angeles, CA)
DISCUSSANT
Andrew Thomas Parsa, MD, PhD
Tumor Associated Macrophages Increase B7 H1 Expression and Local Immunosuppresion in Glioma

4:46 – 5:00 PM

AUTHORS
Orin Bloch, MD; Brian J. Jian, MD, PhD; Rajwant Kaur, BA; Courtney A. Crane, PhD; Martin J. Rutkowski, BA; Andrew T. Parsa, MD, PhD (San Francisco, CA)

DISCUSSANT
Linda M. Liau, MD, PhD

American Brain Tumor Association Young Investigator Award

Effect of Concentration on Accuracy of Convective Imaging Distribution of a Gadolinium-based Surrogate Tracer

5:01 – 5:15 PM

AUTHORS
Ashok R. Asthagiri, MD; Stuart Walbridge, BS; John D. Heiss, MD; Russell R. Lonser, MD (Bethesda, MD)

DISCUSSANT
Michael W. McDermott, MD

MicroRNA 328 is Associated with Non-small Cell Lung Cancer (NSCLC) Brain Metastasis and Mediates NSCLC Migration

5:16 – 5:30 PM

AUTHORS
Timothy C. Ryken, MD (Waterloo, IA); Shilpi Arora, PhD; Aarati E. Panade, PhD; Sara Nasser, PhD; Shrvan Srithar, PhD (Translational Genomics, Phoenix, AZ); Ronald L. Korn, PhD (Scottsdale Medical Imaging Scottsdale, AZ); Julianna Ross, PhD; Harshil Dhruv, PhD; Kristen Nelson, PhD (Translational Genomics Phoenix, AZ); Zita Sibenaller, PhD (Radiation Oncology University of Iowa, IA); Michael Gotway, PhD (Scottsdale Medical Imaging Scottsdale, AZ); Seungchan Kim, PhD; Glen Weiss, PhD (Translational Genomics Phoenix, AZ)

DISCUSSANT
James M. Markert Jr., MD

Scientific Session II – Spine

2:00 – 5:30 PM

DISCUSSANT
Mark H. Blitsky, MD

Outcome Analysis of Ventral Transoral Craniovertebral Decompression Procedures

2:00 – 2:29 PM

INVITED SPEAKER
Arnold H. Menezes, MD

Time to Development, Clinical and Radiographic Characteristics, and Management of Proximal Junctional Kyphosis in Adult Thoracolumbar Instrumented Fusion Based on 32 Consecutive Cases

2:30 – 2:54 PM

AUTHORS
Davis L. Reames, MD; Justin S. Smith, MD, PhD (Charlottesville, VA); D. Kojo Hamilton, MD (Baltimore, MD); Vincent Arlet, MD; Christopher I. Shaffrey, MD (Charlottesville, VA)

DISCUSSANT
Robert F. Heary, MD

Pre-operative Grading Scale to Predict Survival in Patients Undergoing Resection of Malignant Primary Osseous Spinal Neoplasms

2:55 – 3:09 PM

AUTHORS
Praveen V. Murmaneni, MD (San Francisco, CA); Cheerag D. Upadhyaya, MD, MSc (Richland, WA); Jau Ching Wu, MD (San Francisco, CA); Regis W. Haid Jr., MD (Atlanta, GA); Vincent C. Traynelis, MD (Chicago, IL); Bobby Tay, MD (San Francisco, CA); Domagoj Coric, MD (Charlotte, NC); Gregory Trost, MD (Madison, WI)

DISCUSSANT
Joseph S. Cheng, MD, MS
624
Long-term Stability after Multilevel Cervical Laminectomy for Spinal Cord Tumor Resection in von Hippel Lindau Disease
4:16 – 4:30 PM

AUTHORS
Ashok R. Astghirian, MD; Gautam U. Mehta, MD; John A. Butman, MD; Martin Baggenstos, MD; Edward H. Oldfield, MD; Russell R. Lonser, MD (Bethesda, MD)

DISCUSSANT
Ziya L. Gokaslan, MD, FACS

625
Long-term Outcomes of Patients with Multilevel Cervical Spondylotic Myelopathy after Laminectomy, Laminoplasty and Laminectomy & Fusion: A Meta Analysis of Observational Studies
4:31 – 4:45 PM

AUTHORS
Hormuzdyar H. Dasenbrock, BA; Mohammad Bydon, MD; Gayane Yenokyan, PhD; Timothy F. Witham, MD; Ziya L. Gokaslan, MD; Ali Bydon, MD (Baltimore, MD)

DISCUSSANT
Gregory R. Trost, MD

626
Treatment of 110 Symptomatic Lumbar Stenosis Patients at 16 Centers in an FDA IDE Study
4:46 – 5:00 PM

AUTHORS
Darryl J. Dirisio, MD (Albany, NY); John J. Regan, MD, FACS (Beverly Hills, CA); Charles A. Hartjen, MD, FACS (Baltimore, MD); Randall F. Dryer, MD, FACS (Austin, TX); W. Blake Rodgers, MD (Jefferson City, MO); Kenneth Pettine, MD (Loveland, CO); Jim A. Yousef, MD (Durango, CO); Alfred L. Rhyne, MD; Eric B. Laxer, MD; Leo R. Spector, MD (Charlotte, NC); Morgan P. Lorio, MD, FACS (Bristol, TN); Joseph J. Marzulli, MD; Jason M. Highsmith, MD (Charleston, SC); Kevin A. Rahn, MD; Robert M. Shugart, MD (Fort Wayne, IN); A. David Tahemia, MD (Rancho Mirage, CA); Chad J. Morgan, MD; Thomas B. Briggs, MD; John F. Ferguson, MD; Wade M. Ceola, MD, FACS (Springfield, MO); Neil Anand, MD; Rick B. Delamarner, MD (Santa Monica, CA); S. Craig Humphreys, MD; Scott Hodges, DO (Chattanooga, TN); Patrick Connolly, MD (Worcester, MA)

627
International Variations in the Clinical Presentation and Management of Cervical Spondylotic Myelopathy (CSM). One Year Outcomes of the AOspine Multi Center Prospective Study
5:01 – 5:15 PM

AUTHORS
Michael Fehlings, MD (Toronto, Canada); Branko Kojzar, MD, PhD (Seattle, WA); Ronald Bartels, MD (Nijmegen, Netherlands); Giuseppe Barbagallo, MD (Catania, Italy); Helton Defino, MD (Sao Paulo, Brazil); Paul Arnold, MD (Kansas City, KS); Qiang Zhou, MD (Chongqing, China); Mehmet Zileli, MD (Izmir, Turkey); Gamaliet Tan, MD (Singapore, Singapore); Osman Moraes, MD (Sao Paulo, Brazil); Shashank Kale, MD (New Dehi, India); Ciaran Bolger, MD (Dublin, Ireland); Manuel Alvarado, MD (Bolivarian Republic of Caracas, Venezuela); Massimo Scratti, MD (Ancona, Italy)

DISCUSSANT
Hildo R.C. Azevedo-Filho, MD

Scientific Session III – Stereotactic and Functional
2:00 – 5:30 PM

Korbel Ballroom 1DEF, Colorado Convention Center

This session will focus on innovations in the diagnosis, management and treatment of stereotactic and functional neurosurgery. Innovations which have been developed in the last twelve months will be presented.

MODERATORS
Ali R. Rezai, MD
Konstantin V. Slavin, MD

Physiological Basis for Movement Disorders Surgery: Latest Concepts
2:00 – 2:29 PM

INVITED SPEAKER
Philip A. Starr, MD, PhD

Medical Student Abstract Award (YNS)
630
Single-neuronal Responses for Tool Selection in the Human Prefrontal Cortex
2:30 – 2:54 PM

AUTHORS
Matthew K. Mian, BS; Sameer A. Sheth, MD, PhD; Shaun R. Patel, BA; Emad N. Eskander, MD; Ziv Williams, MD (Boston, MA)

DISCUSSANT
Nicholas M. Boulis, MD

631
Release of Phantom Auditory Percepts by Deep Brain Stimulation in Area LC
2:55 – 3:09 PM

AUTHORS
Paul S. Larson, MD; Steven W. Cheung, MD (San Francisco, CA)

DISCUSSANT
Matthew A. Howard III, MD
632
Insertional Effect During Surgery for Parkinson's Disease Can be Misleading
3:10 – 3:24 PM
AUTHORS
Jason M. Schwab, MD (West Bloomfield, MI); Kenneth Jenrow, PhD (Detroit, MI); Peter A. LeWitt, MD (West Bloomfield, MI)
DISCUSSANT
Steven G. Ojemann, MD

635
Interventional MRI Guided Delivery of AAV2 GDNF for a Planned Clinical Trial in Parkinson's Disease
4:31 – 4:45 PM
AUTHORS
Mark Richardson, MD, PhD; Adrian Kells, PhD; Kate Rosenbluth, PhD; Ernesto Aguilar Saleglo, PhD; Krys Bankiewicz, MD, PhD (San Francisco, CA)
DISCUSSANT
Matthew John During, MD

636
Regional Thalamic Involvement in Focal Human Epilepsy
4:46 – 5:00 PM
AUTHORS
William J. Elias, MD; Edward H. Bertram, MD (Charlottesville, VA)
DISCUSSANT
Brian H. Kopell, MD

633
Alterations in Human Gamma Network Topology during a Free Recall Memory Task
4:01 – 4:15 PM
AUTHORS
Kareem A. Zaghloul, MD, PhD (Bethesda, MD); John F. Burke III, MD (Philadelphia, PA)
DISCUSSANT
Ashesh D. Mehta

637
Accuracy Analysis of Frameless Image Guided Implantation of Depth Electrodes for Intracranial Epilepsy Monitoring
5:01 – 5:15 PM
AUTHORS
Patrick R. Mulligan, BS; David LaBorde, MD; Darlene A. Lobel, MD; Robert E. Gross, MD, PhD (Atlanta, GA)
DISCUSSANT
Edie E. Zusman, MD, FACS

634
Intracerebral Microdialysis of the Subthalamic Nucleus and Substantia Nigra during Deep Brain Stimulation Surgery
4:16 – 4:30 PM
AUTHORS
Casey H. Halpern, MD; Ephraim W. Church, BA (Philadelphia, PA); Michaux Kilpatrick, MD (Gaston, NC); Shabbar F. Danish, MD (New Brunswick, NJ); Michael F. Stiefel, MD, PhD; Maria Ker; Eileen Maloney, MSN, RN; Michael B. Robinson, PhD; Irwin Lucki, PhD; Elizabeth Kizman Grenada, BS; Tiffany Smith, BS; Gordon H. Baltuch, MD, PhD (Philadelphia, PA)
DISCUSSANT
Aviva Abosch, MD, PhD

638
Stereotactic Radiosurgery for Hemangioblastoma Patients: Factors Associated with Tumor Progression
5:16 – 5:30 PM
AUTHORS
Robert M. Starke, MD, MS; Jessica Rainey, BA; James Nguyen, BA; Faisal Sayer, MD; Jason Sheehan, MD (Charlottesville, VA)
DISCUSSANT
Robert E. Breeze, MD

640
99 Consecutive Patients Operated for Tight or Fatty Filum: Outcome and Complications
2:30 – 2:54 PM
AUTHORS
Lauren R. Ostling, MD; Charles Kurtz IV, MD; Karin Bierbrauer, MD (Cincinnati, OH)
DISCUSSANT
Monica C. Wehby, MD

641
Stereotactic Radiosurgery for Pediatric Arteriovenous Malformations
2:55 – 3:09 PM
AUTHORS
Hideyuki Kano, MD, PhD; Douglas Kondziolka, MD, MSc; John C. Flickinger, MD; Huai che Yang, MD; Thomas J. Flannery, FRCS, PhD; Nasir R. Awan, MD; Ajay Nirajnan, MD, MBA; Josef Novotny Jr., PhD; L. Dade Lunsford, MD, FACS (Pittsburgh, PA)
DISCUSSANT
R. Michael Scott, MD

Scientific Session IV – Pediatrics
2:00 – 5:30 PM
Korbel Ballroom 2A/3A, Colorado Convention Center
This session will focus on innovations in the diagnosis, management and treatment of pediatric neurosurgery. Innovations which have been developed in the last twelve months will be presented.
MODERATORS
Alan R. Cohen, MD, FACS
Mark D. Krieger, MD

Decision Making in the Management of Chiari and Tethered Spinal Cords
2:00 – 2:29 PM
INVITED SPEAKER
Timothy B. Mapstone, MD

99 Consecutive Patients Operated for Tight or Fatty Filum: Outcome and Complications
2:30 – 2:54 PM
AUTHORS
Lauren R. Ostling, MD; Charles Kurtz IV, MD; Karin Bierbrauer, MD (Cincinnati, OH)
DISCUSSANT
Monica C. Wehby, MD

Stereotactic Radiosurgery for Pediatric Arteriovenous Malformations
2:55 – 3:09 PM
AUTHORS
Hideyuki Kano, MD, PhD; Douglas Kondziolka, MD, MSc; John C. Flickinger, MD; Huai che Yang, MD; Thomas J. Flannery, FRCS, PhD; Nasir R. Awan, MD; Ajay Nirajnan, MD, MBA; Josef Novotny Jr., PhD; L. Dade Lunsford, MD, FACS (Pittsburgh, PA)
DISCUSSANT
R. Michael Scott, MD
642
Cervicomедullary Decompression for Dynamic Foramen Magnum Stenosis in Achondroplasia
3:10 – 3:24 PM
AUTHORS
Debraj Mukherjee, MD, MPH (Los Angeles, CA); Parham Moftakhar, MD (San Francisco, CA); Barry D. Pressman, MD; David L. Rimoin, MD; Moise Danielpour, MD (Los Angeles, CA)
DISCUSSANT
Douglas L. Brockmeyer, MD

Question and Answer
3:25 – 3:29 PM

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

643
Surgical Management of the Symptomatic, Enlarging, Isolated Fourth Ventricle
4:01 – 4:15 PM
AUTHORS
Yasser Jeelani, MD; Hui ju Liu, MD; Ira Bowen, BA; Mark Krieger, MD; J. Gordon McComb, MD (Los Angeles, CA)
DISCUSSANT
Alan R. Cohen, MD, FACS

644
Effect of Amusement Park Rides on Programmable Shunt Valve Settings
4:16 – 4:30 PM
AUTHORS
Jennifer Strahle, MD; Kelly Collins, BS; Hugh J.L. Garton, MD, MHS; William Stetler, MD; Thomas Garton; Brandon Smith, BS; Cormac O. Maher, MD (Ann Arbor, MI)
DISCUSSANT
James M. Drake, MD

645
Post Hemorrhagic Hydrocephalus and Shunts: What are the Predictors of Multiple Revision Surgeries?
4:31 – 4:45 PM
AUTHORS
Prashant Chittiboina, MD, MPH; Papireddy Bollam, MD (Shreveport, LA); Helena Pasieka, MD (Ann Arbor, MI); Christina M. Notarianni, MD; Brian K. Willis, MD; Anil Nanda, MD, FACS (Shreveport, LA)
DISCUSSANT
Karin M. Muraszko, MD

646
The Effect of Gel Film on Retethering of Neural Tube Defects
4:46 – 5:00 PM
AUTHORS
Jesse Winer, MD; Dan Solchanyk, BS; Ira E. Bowen, BA; Alex Tuchman, MD; Mark D. Krieger, MD; J. G. McComb, MD (Los Angeles, CA)
DISCUSSANT
Marion L. Walker, MD

Preuss Award
647
WIP1 Enhances Tumor Formation in a Sonic Hedgehog Dependent Model of Medulloblastoma
5:01 – 5:15 PM
AUTHORS
Ganesh Rao, MD (Houston, TX); Daniel Fults, MD; Carolyn Pedone, MS (Salt Lake City, UT); Tiffany Doucette, PhD (Houston, TX)
DISCUSSANT
Liliana C. Goumnerova, MD, FRCSC

Synthes Skull Base Award
648
The Surgical Management of Pediatric Cushing’s Disease
5:16 – 5:30 PM
AUTHORS
Joshua J. Wind, MD (Washington, DC); Russell R. Lonser, MD; Lynnette K. Nieman, MD (Bethesda, MD); Edward H. Oldfield, MD (Charlottesville, VA)
DISCUSSANT
Frederick A. Boop, MD, FACS

Scientific Session V – Cerebrovascular
2:00 – 5:30 PM
Korbel Ballroom 4ABC, Colorado Convention Center
This session will focus on innovations in the diagnosis, management and treatment of cerebrovascular neurosurgery. Innovations which have been developed in the last twelve months will be presented.
MODERATORS
Jacques J. Morcos, MD, FRCS
B. Gregory Thompson Jr., MD

The Dural Vasculature and Related Clinical Disorders
2:00 – 2:29 PM
INVITED SPEAKER
Arthur L. Day, MD, FACS

650
Neuroprotective Effects of Post Synaptic Density 95 Inhibition in a Gyrencephalic Non Human Primate Model of Acute Ischemic Stroke: Impact on Neuroimaging, Histologic, Neurobehavioural and Functional Molecular Outcomes
2:30 – 2:54 PM
AUTHORS
Douglas J. Cook, MD, PhD; Lucy Teves; Michael Tymianski, MD, PhD, FRC (Toronto, Canada)
DISCUSSANT
E. Sander Connolly Jr., MD
IMPROVEMENT IN GLASGOW OUTCOME SCORE AFTER BRAINSTEM Cavernous Malformation Surgery is Associated with Larger Lesions and Earlier Treatment: Results in 260 patients

2:55 – 3:09 PM

AUTHORS
Adib A. Abla, MD (Phoenix, AZ); Gregory Lekovic, MD, PhD (Los Angeles, CA); Jay Turner, MD, PhD; Robert F. Spetzler, MD (Phoenix, AZ)

DISCUSSANT
Jacques J. Morcos, MD, FRCS

AANS MEDICAL STUDENT SUMMER RESEARCH FELLOWSHIP

652

SAH INDUCED CHANGES IN MICROGLIA AND THE IMPACT OF CAPILLARY FUNCTION

3:10 – 3:24 PM

AUTHORS
Benjamin A. Plog; Katherine Moll; Hongyi Kang; G. Edward Vates, MD, PhD (Rochester, NY)

DISCUSSANT
R. Loch Macdonald, MD, PhD

QUESTION AND ANSWER

3:25 – 3:29 PM

COFFEE BREAK IN EXHIBIT HALLS A, B & C, COLORADO CONVENTION CENTER

3:30 – 4:00 PM

653

INTRACRANIAL VENOUS SINUS STENTING FOR BENIGN INTRACRANIAL HYPERTENSION: CLINICAL INDICATIONS, TECHNIQUE, AND PRELIMINARY RESULTS

4:01 – 4:15 PM

AUTHORS
Charles B. Newman, MD (San Diego, CA); Yin C. Hu, MD (Cleveland, OH); Shervin R. Dashti, MD, PhD (Louisville, KY); Harold L. Rakate, MD; Cameron G. McDougall, MD; Felipe C. Albuquerque, MD (Phoenix, AZ)

DISCUSSANT
David A. Kumpe, MD

654

SYMPTOMATIC PATIENTS WITH INTRALUMINAL CAROTID THROMBUS: OUTCOME WITH A STRATEGY OF INITIAL ANTICOAGULATION

4:16 – 4:30 PM

AUTHORS
Ananth K. Vellimana, MD; Yasha Kadkhodayan, MD; Colin P. Derdeyn, MD; Gregory J. Zipfel, MD (St. Louis, MO)

DISCUSSANT
Christopher M. Loftus, MD, FACS

655

REPEAT STEREOTACTIC RADIOSURGERY FOR ARTERIOVENOUS MALFORMATIONS

4:31 – 4:45 PM

AUTHORS
Hideyuki Kano, MD, PhD; Douglas Kondziolka, MD, MSc; John C. Flickinger, MD; Huai che Yang, MD; Thomas J. Flannery, FRCS, PhD; Nasir R. Awan, MD; Ajay Niranjani, MD, MBA; Josef Novotny Jr., PhD; L. Dade Lunsford, MD, FACS (Pittsburgh, PA)

DISCUSSANT
Mark E. Linskey, MD

656

MECHANICAL THROMBECTOMY AS FIRST LINE TREATMENT FOR VENOUS SINUS THROMBOSIS: TECHNICAL CONSIDERATIONS AND PRELIMINARY RESULTS USING THE ANGIOJET DEVICE

4:46 – 5:00 PM

AUTHORS
Shervin R. Dashti (Louisville, KY); Yin Hu, MD (Cleveland, OH); David Fiorella, MD, PhD (Stony Brook, NJ); Cameron McDougall, MD; Felipe Albuquerque, MD (Phoenix, AZ); Tom Yao, MD (Louisville, KY)

DISCUSSANT
David A. Kumpe, MD

YASARGIL LECTURE

REFLECTIONS ON THE HISTORY OF NEUROVASCULAR SURGERY

5:01 – 5:30 PM

INTRODUCED BY
Murat Gunel, MD

SPEAKER
M. Gazi Yasargil, MD

SCIENTIFIC SESSION VI – NEUROTHERAPY

2:00 – 5:45 PM

KORBEL BALLROOM 2B/3B, COLORADO CONVENTION CENTER

THIS SESSION WILL FOCUS ON INNOVATIONS IN THE DIAGNOSIS, MANAGEMENT AND TREATMENT OF NEUROTHERAPY NEUROSURGERY. INNOVATIONS WHICH HAVE BEEN DEVELOPED IN THE LAST TWELVE MONTHS WILL BE PRESENTED.

MODERATORS
Shelly D. Timmons, MD, PhD
Alex B. Valadka, MD, FACS

REDEFINING TRAUMATIC BRAIN INJURY

2:00 – 2:29 PM

INVITED SPEAKER
Geoffrey T. Manley, MD, PhD

660

PLASTICITY OF THE INJURED HUMAN SPINAL CORD: INSIGHTS REVEALED BY FUNCTIONAL SPINAL MRI USING UNIQUE SEEP IMAGING

2:30 – 2:54 PM

AUTHORS
David W. Cadotte, MSc, MD (Toronto, Canada); Patrick Stroman, PhD (Kingston, Canada); David W. Mikulis, MD (Toronto, Canada); Rachaël Bosma, BSc (Kingston, Canada); Michael G. Fehlings, MD, PhD (Toronto, Canada)

DISCUSSANT
Langston T. Holly, MD
661 Adequate Nutrition in the Neuroscience ICU: Results of a Quality Improvement Study
2:55 – 3:09 PM
AUTHORS Brandon G. Rocque, MD; Carolina Sandoval Garcia, MD; Laura E. Isaacson, RD; Lisa M. Gierach, RD; Jonathan T. Ketzler, MD; Joshua E. Medow, MD (Madison, WI)
DISCUSSANT George T. Manley, MD, PhD

662 Prognostic Significance of T2 MR Brainstem Injury
3:10 – 3:24 PM
AUTHORS Matthew R. Quigley, MD; Brandon Chew, MD; Christopher M. Spearman; Jack E. Wilberger, MD (Pittsburgh, PA)
DISCUSSANT Eve C. Tsai, MD, PhD

Question and Answer
3:25 – 3:29 PM

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

663 A Protocol for Emergent Reversal of Clopidogrel Prior to Neurosurgical Interventions
4:01 – 4:15 PM
AUTHORS Walter P. Jacobsen, DO; Amit Singla, MBBS, FACS; Peter Kim, MD, PhD; Richard Ogbuji, BA; Eric Deshaies, MD (Syracuse, NY)
DISCUSSANT Adel M. Malek, MD, PhD

664 Goal Directed Brain Tissue Oxygen Monitoring in Traumatic Brain Injury
4:16 – 4:30 PM
AUTHORS Joel Green, MD (Grand Rapids, MI); Daniela C. Pellegrini, BSN (Chicago, IL); Wayne E. Vanderkolk, MD; Bryan E. Figueroa, MD; Alan Davis, PhD (Grand Rapids, MI); Evert A. Eriksson, MD (Charleston, SC)
DISCUSSANT Peter David LeRoux, MD

665 Serum Sodium Levels and Optimization of Brain Tissue Oxygenation and Intracranial Pressures in Severe TBI
4:31 – 4:45 PM
AUTHORS Ripul R. Panchal, DO; Mark A. Krel, MS; Dan E. Miulli, DO; Daniel S. Hutton, DO; Javed Siddiqi, MD, PhD (Colton, CA)
DISCUSSANT Odette Althea Harris, MD, MPH

666 The Epidemiological Trends of Head Injury in the Largest Canadian Adult Trauma Center from 1986 to 2007
4:46 – 5:00 PM
AUTHORS Shobhan Vachhrajani, MD; David W. Cadotte, MSc, MD; Farhad Pirouzmand, MD (Toronto, Canada)
DISCUSSANT Jamie S. Ullman, MD

667 Venous Thromboembolism Chemoprophylaxis Protocol for Head Trauma Patients: A Quality Improvement Experience
5:01 – 5:15 PM
AUTHORS Christopher M. Nickele, MD; Timothy K. Kamps; Joshua E. Medow, MD (Madison, WI)
DISCUSSANT James M. Ecklund, MD, FACS

668 Effect of Xenon in Xenon CT Cerebral Blood Flow Studies on the Physiology of Comatose Patients
5:16 – 5:45 PM
AUTHORS Jennifer Kosty, BA; William A. Kofke, MD; Eileen Maloney Wilensky, CRNP; Suzanne Frangos, CNRN; Joshua M. Levine, MD; Peter D. LeRoux, MD, FACS; Eric L. Zager, MD (Philadelphia, PA)
DISCUSSANT Howard Yonas, MD

Kenichiro Sugita International Symposium
2:00 – 5:45 PM
Rooms 705, 707, 709, Colorado Convention Center

The AANS-Sugita International Symposium will bring together neurosurgeons from around the world who were influenced by the teachings of Professor Kenichiro Sugita. In his lifetime, Dr. Sugita was arguably the most influential and innovative neurosurgeon in Japan. He devoted himself to the treatment of vascular neurosurgical conditions and pioneered the use of stereotactic head frames, aneurysm dissectors, and novel aneurysm clips. He was Professor and Chair of Neurosurgery at Shinshu University in Matsumoto Japan (1978 – 1988), and at Nagoya University (1988 – 1994). Given his devotion to teaching neurosurgical trainees, and his interests in international neurosurgery, he established a scholarship program which enabled young neurosurgeons from around the world to travel to Nagoya to learn from his complex skull base, and vascular neurosurgical cases. A superb scientific program has been created to honor the name of and celebrate in the career of Professor Sugita. Neurosurgeons of international repute will speak at the symposium, and describe the ways in which their careers were influenced by Professor Sugita.
Introduction and Welcome to the Kenichiro Sugita International Symposium
2:00 – 2:09 PM
SPEAKER
Christopher M. Loftus, MD, FACS

The Value of the International Training Program, LSU Shreveport
2:10 – 2:14 PM
SPEAKER
Anil Nanda, MD, FACS

Memories of Professor Sugita
2:15 – 2:29 PM
SPEAKER
Shigeaki Kobayashi, MD

The Traditions of Dr. Sugita, Shinshu University
2:30 – 2:39 PM
SPEAKER
Kazuhiro Hongi, MD

The Sugita Scholarship Program, Nagoya University
2:40 – 2:49 PM
SPEAKER
Toshihiko Wakabayashi, MD, PhD

Treatment of Complex Intracranial Vascular Lesions, BNI
2:50 – 3:04 PM
SPEAKER
Robert F. Spetzler, MD

What Dr. Sugita Taught Me, The Brigham
3:05 – 3:19 PM
SPEAKER
Ossama Al Mefty, MD

Welcome from the AANS President
3:20 – 3:29 PM
SPEAKER
James T. Rutka, MD, PhD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

Question and Answer
4:01 – 4:14 PM

Neurosurgical Treatment of Intracranial AVMs, Henry Ford Hospital
4:15 – 4:29 PM
SPEAKER
Ghaus M. Malik, MD

The History of Microvascular Neurosurgery. Dr. Sugita's Influence in World Wide Practices, University of Vermont
4:30 – 4:44 PM
SPEAKER
Bruce Tranmer, MD

What Dr. Sugita Taught Me in My Practice of Neurosurgery, Pelita Harapan University, Bali, Indonesia
4:45 – 4:59 PM
SPEAKER
Eka Julianta Wahjoepramono, MD

Memories of the Sugita Scholarship Program. Testimonies to be Delivered by Former Sugita Scholars
5:00 – 5:08 PM
SPEAKER
Lon F. Alexander, MD

Joint Annual Business Meeting of the American Association of Neurological Surgeons and the American Association of Neurosurgeons
5:30 – 6:30 PM
Rooms 102, 104, Colorado Convention Center

History Dinner
6:30 – 9:30 PM
Mile High Station
Featuring the Setti S. Rengachary Memorial Lecture given by Thomas G. Andrews, PhD
See page 26 for more information.

AANS International Reception
7:30 – 9:00 PM
Capitol Ballrooms 1, 2 & 3, Hyatt Regency Denver
See page 26 for more information.
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

202
Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications
Korbel Ballroom 4ABC, Colorado Convention Center

MODERATOR:
Kevin T. Foley, MD

PANELISTS:
Domagoj Coric, MD
Kurt M. Eichholz, MD
Langston T. Holly, MD
Bong Soo Kim, MD
Paul Santiago, MD

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

203
Lumbar Spine Fusion
Korbel Ballroom 1ABC, Colorado Convention Center

MODERATOR:
Joan Frances O’Shea, MD

PANELISTS:
Andrew T. Dailey, MD
Eric M. Massicotte, MD, MSc
Russ P. Nockels, MD
Daniel K. Resnick, MD

The principles of selecting suitable approaches, techniques and tactics of multimodality treatment of acoustic neuromas will be described.
• Explain how the contributions by Macewen and Bennett/Godlee fit together with examination of how conclusions about priorities can be nuanced

**205**  
**Cavernous Malformation: Current Controversies in Management**  
Room 402, Colorado Convention Center  
**MODERATOR:** Murat Gunel, MD  
**PANELISTS:** Michael T. Lawton, MD  
R. Michael Scott, MD  
Robert F. Spetzler, MD  
Gary K. Steinberg, MD, PhD  

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

**206**  
**Functional Mapping of the Cerebral Cortex: Advantages and Limitations**  
Room 203, Colorado Convention Center  
**MODERATOR:** Richard W. Byrne, MD  
**PANELISTS:** Gerhard M. Friehs, MD  
P. Charles Garel, MD  
Isabelle M. Germano, MD, FACS  
Hiroto Kavasaki, MD  
Daniel L. Silberfeld, MD  

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

**207**  
**Chiari Malformations: Diagnosis Treatments and Failures**  
Korbel Ballroom 4DEF, Colorado Convention Center  
**MODERATOR:** Edward H. Oldfield, MD  
**PANELISTS:** Ulrich Batzdorf, MD  
Arnold H. Menezes, MD  
Karin M. Muraszko, MD  

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  
• Recognize the indications for treatment of Chiari malformations  
• Discuss the options for treatment of Chiari malformations

**208**  
**Update on Lumbar Stenosis**  
Room 304, Colorado Convention Center  
**MODERATOR:** Robert E. Isaacs, MD  
**PANELISTS:** David W. Beck, MD  
Christopher H. Comey, MD  
William Bradford DeLong, MD  
Carl Laurysen, MD  
Claudius Thorne, MD  

This seminar will evaluate short term and long term outcomes of both surgical and nonsurgical treatment of lumbar stenosis. It will also evaluate recently developed minimal access treatments for stenosis.  

**LEARNING OBJECTIVES:**  
After completing this educational activity, participants should be able to:  
• Discuss the natural history of spinal stenosis  
• 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

**209**  
**Controversies in the Management of Intracerebral Hematomas**  
Korbel Ballroom 1DEF, Colorado Convention Center  
**MODERATOR:** John M. Tew Jr., MD  
**PANELISTS:** Jonathan A. Friedman, MD  
Alexander David Mendelow, FRCS, PhD  
David W. Newell, MD  
Yong Kwang Tu, MD  

The pathophysiology of spontaneous intracerebral hemorrhage 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
210 Advances in Carotid Disease: Surgery vs. Endovascular Therapy
Korbel Ballroom 2A/3A, Colorado Convention Center
MODERATOR:
Christopher M. Loftus, MD, FACS

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Identify patients best treated by open surgery
• Identify patients best treated by endovascular approaches
• Discuss the limits of endovascular and open surgical treatment
• Identify risk factors for the endovascular and open surgical treatment

211 Pituitary Tumors
Room 303, Colorado Convention Center
MODERATOR:
Edward R. Laws Jr., MD, FACS

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss optimal management of prolactinomas
• Describe approach advances in and extensions of transsphenoidal surgery
• Construct appropriate adjunctive treatment algorithms for patients

212 Current Use of Biologic Graft Extenders for Spinal Fusion
Room 201, Colorado Convention Center
MODERATOR:
James S. Harrop, MD

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

213 Management of Spinal Axis Trauma
Room 403, Colorado Convention Center
MODERATOR:
Gregory R. Trost, MD

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss the pertinent issues and alternatives
• Review rationale for various spine trauma treatments

214 Intracranial Endoscopy
Room 404, Colorado Convention Center
MODERATOR:
Alan R. Cohen, MD, FACS

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Review the current state of intracranial endoscopy
• Explain the endoscopic treatment of hydrocephalus, cysts and tumors
• Describe the indications for endoscopic transnasal and skull base surgery
• Evaluate the efficacy of endoscope assisted craniosynostosis surgery
• Discuss complications and strategies for complication avoidance

215 Malignant Brain Tumors: State-of-the-Art Treatment
Room 205, Colorado Convention Center
MODERATOR:
Joseph M. Piegmeier, MD

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss new advances in the management of malignant gliomas including gene therapy, convection enhanced drug and immunotherapy. These advances will be discussed in the context of tumors managed by the neurosurgeon.
LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Examine innovative techniques for surgery
- Discuss current concepts in the medical field
- Review the tumor biology with gene and vaccine therapy
- Discuss the relevant clinical results of implantable devices
- Explain the role and timing of surgical procedures
- Discuss forces shaping healthcare
- Develop strategies to maximize financial success during residency
- Discuss the future of neurosurgery

216 Improving Your Bottom Line
Room 405, Colorado Convention Center
MODERATOR:
James I. Ausman, MD, PhD
PANELISTS:
Gregory B. Lanford, MD
Troy D. Payner, MD
Khalid A. Sethi, MD
Kristopher Michael Webb, MD

This seminar will survey the solutions neurosurgeons have made to the constrictive economic environment using practicing neurosurgeons as faculty. Successful examples will cover the small practice to the academic center. This seminar encourages audience participation and will cover options ranging from entrepreneurial to employment.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
- Appraise techniques employed by managing partners of large neurosurgical practices to reduce overhead
- Discuss ways to manage personnel and develop innovative ways to increase the bottom line and run a more productive practice
- Discuss forces shaping healthcare
- Explain how to grow a practice in today’s and tomorrow’s healthcare environment

A wide range of treatment strategies and implantable devices are being developed to treat facet disease, spinal stenosis and other manifestations of posterior column disease without fusion. The implantable devices include X-Stop, Dynasis, Tops and others. The results of the most recent clinical trials will be presented by investigators involved in these studies.

218 Getting the Most Out of Your Residency
Korbel Ballroom 2B/3B, Colorado Convention Center
MODERATOR:
Lawrence S. Chin, MD, FACS
PANELISTS:
Howard M. Eisenberg, MD
Richard G. Ellenbogen, MD, FACS
Alexander Arash Khalessi, MD
N. Scott Litofsky, MD
Karin R. Swartz, MD

Complimentary Registration for Candidates and Medical Students

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:
- Discuss the normal anatomy of the posterior spinal column, as well as the pathophysiology of degenerative disease
- Discuss the biomechanical basis of non-fusion technology
- Explain the design features of both pedicle screw-based and inter-spinous process implants
- Compare and contrast the differing treatment strategies
- Discuss the relevant clinical results of pedicle screw-based stabilization devices and of inter-spinous process implants
- Discuss clinically relevant aspects of the pathophysiology of spinal cord injury
- Discuss 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

219 Management of Acute Spinal Cord Injury
Room 207, Colorado Convention Center
MODERATOR:
Michael G. Fehlings, MD, PhD
PANELISTS:
Richard C. E. Anderson, MD
Charles Kuntz IV, MD
Scott A. Shapiro, MD
Christopher B. Shields, MD, FRCSC
Andrea L. Strayer, MSN, CNRN

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
- Discuss 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

220 Non Resective Procedures for Epilepsy
Room 407, Colorado Convention Center
MODERATOR:
Nicholas M. Barbaro, MD
PANELISTS:
Robert R. Goodman, MD, PhD
Jean Regis, MD
Matthew D. Smyth, MD

This seminar will focus on the surgical approaches to epilepsy that do not involve removal of tissue. Various electrical stimulation techniques will be discussed including vagus nerve stimulation and deep brain stimulation (open and closed loop), 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 will also 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 in the surgical treatment of epilepsy
- Review the currently approved non-resective surgical treatments of epilepsy

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**221**
**Contemporary Management for Adult Hydrocephalus**
Room 406, Colorado Convention Center

**MODERATOR:**
Guy M. McKhann II, MD

**PANELISTS:**
Marvin Bergsneider, MD
Giovanni Broggi, MD
Petra Margarete Klinge, MD, PhD
Mark G. Luciano, MD, PhD

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:
- Explain the venous hazards of intracranial surgery
- Recognize operative procedures to avoid injury and complications related to the major venous sinuses
- Intracranial veins, the cavernous sinus and jugular foramen
- Discuss the anatomy of the approaches to the cavernous sinus and jugular foramen

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**222**
**Cerebral Venous System: Surgical Considerations**
Room 301, Colorado Convention Center

**MODERATOR:**
Albert L. Rhoton Jr., MD

**PANELISTS:**
Ossama Al-Mefty, MD
Turker Kilic, MD, PhD
Jacques J. Morcos, MD, FRCS
Laligam N. Sekhar, MD, FACS
Chandranath Sen, MD
M. Christopher Wallace, MD

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:
- Develop new program revenue sources through philanthropy
- Describe structuring directed gifts for neurosurgery
- Identify new opportunities for research funding
- Discuss strategies for ethical corporate donations
- Discuss how to motivate individuals to participate as donors

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**Plenary Session II**
9:40 AM – 1:00 PM

**MODERATORS**
Carl B. Heilman, MD
Paul C. McCormick, MD
Four Seasons Ballroom, Colorado Convention Center

**Update on AMA**
9:40 – 9:44 AM

**SPEAKER**
Peter W. Carmel, MD

**Richard C. Schneider Lecture**

**The Visual Dimensions of Future Neurosurgical Education**
9:45 – 10:04 AM

**INTRODUCED BY**
Troy M. Tippett, MD

**SPEAKER**
Jon H. Robertson, MD
Early Decompressive Craniectomy for Patients with Severe Traumatic Brain Injury and Refractory Intracranial Hypertension (DECRA) – A Prospective Randomised Clinical Trial

10:05 – 10:19 AM

AUTHORS
D. James Cooper, MD; Jeffrey V. Rosenfeld, MD, FRACS; Lynnette Murray, BS (Melbourne, Australia); Yaseen Arabi, MD (Riyadh, Saudi Arabia); Andrew Davies, MD; Paul D’Urso, MBBS, PhD; Thomas Kossmann, MD, FRACS; Jenny Ponsford, PhD (Melbourne, Australia); Peter Reilly, MD, FRACS (Adelaide, Australia); Ian Sepeleit, MD (Sydney, Australia); Rory Wolf, PhD (Melbourne, Australia)

DISCUSSANT
David O. Okonkwo, MD, PhD

Efficacy of Tranexamic Acid on Blood Loss and Transfusion Rates in Pediatric Craniosynostosis Surgery: A Double Blind Placebo Controlled Study

10:20 – 10:34 AM

AUTHORS
Mark R. Proctor, MD; Petra Meier, MD; Luis Pereira, PhD; Francis McGowan, MD; Laurie Scharp, BSC; Gary Rogers, MD; John Meara, MD; Randy Prescilla, MD; Sulpicio Soriano, MD; David Zurakowski, Navil Sethna, MD; Susan Gooibe, MD (Boston, MA)

DISCUSSANT
David F. Jimenez, MD, FACS

Special Lecture
The Future of Scientific Manuscript Writing

10:35 – 10:51 AM

INTRODUCED BY
Paul C. McCormick, MD

SPEAKER
Douglas S. Kondziolka, MD

National Neurosurgical Bootcamp Courses for PGY1 Residents

10:52 – 11:06 AM

AUTHORS
Nathan R. Seiden, PhD (Portland, OR); Thomas C. Origitano, MD (Chicago, IL); Kim J. Burchiel, MD (Portland, OR); Christopher C. Getch, MD (Chicago, IL); Valerie C. Anderson, PhD (Portland, OR); Nicholas M. Barbaro, MD (San Francisco, CA)

DISCUSSANT
Ralph G. Dacey Jr., MD

Theodore Kurze Lecture
Illustrating a Neurosurgical Manuscript: From OR to the Sistine Chapel

11:07 – 11:23 AM

INTRODUCED BY
James T. Rutka, MD, PhD

SPEAKER
Ian Suk, BScBMC, CMI

Rhoton Lecture Series with 3-D Integration

12:00 – 12:04 PM

SPEAKER
William T. Couldwell, MD, PhD

Cushing Medalist

12:05 – 12:07 PM

INTRODUCED BY
James T. Rutka, MD, PhD

RECIPIENT
A. John Popp, MD

Cushing Orator

From Plymouth Rock to the Little Bighorn: Discovery and Leadership in American History

12:08 – 1:00 PM

INTRODUCED BY
James T. Rutka, MD, PhD

SPEAKER
Nathaniel Philbrick

Cost Effectiveness of Transforaminal Lumbar Inter-body Fusion (TLIF) for Grade I Degenerative Spondylolisthesis

11:45 – 11:59 AM

AUTHORS
Matthew J. McGirt, MD; Owoicho Adogwa, MPH; Scott L. Parker, BS; Alexandra Paul, MD; Brandon Davis, MD; Oran Aaronson, MD; Clint Devon, MD; Joseph S. Cheng, MD

DISCUSSANT
Paul C. McCormick, MD
Symposium: Culture and Neurosurgery in the New World: Evidence from Pre-Columbian America
2:01 – 2:04 PM
Introduction of Dr. Levin, Assistant Curator of Mesoamerican Archaeology, Denver Museum of Nature and Science
SPEAKER
Mark C. Preul, MD

From Brain Surgery to Heart Extraction: Medicine and Ritual in Ancient MesoAmerica
2:05 – 2:40 PM
SPEAKER
Marc N. Levin, PhD

Tracing Pre-Columbian Medicine and Surgery through Terracotta and Stone Imagery – From the Olmecs to the Myans
2:41 – 2:45 PM
SPEAKER
Mark C. Preul, MD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM
711 Connectivity of the Septum Pellucidum: Revisiting a Target for Chronic Pain
2:10 – 2:19 PM
 AUTHORS
Patrick Schweder, MD; Alex Green, MD, FRCS; Peter Hansen, PhD; Gerardine Quaghebeur, MD; Tipu Aziz, MD, FRCS (Oxford, United Kingdom)

712 Effects of Epidural Steroid Injections on Blood Glucose Levels in Patients with Diabetes Mellitus
2:20 – 2:29 PM
 AUTHORS
Matthew J. McGirt, MD; Jesse Even, MD; Kirk McCullough, MD; Clinton Devin, MD (Nashville, TN)

713 Microdiscectomy Improves Pain-associated Depression, Somatic Anxiety, and Mental Well Being in Patients with Herniated Lumbar Disc
2:30 – 2:39 PM
 AUTHORS
Scott L. Parker, BS (Baltimore, MD); Richard L. Lebow, MD; Owoicho Adogwa, BS; Adam S. Reig, MD; Joseph Cheng, MD; Matthew J. McGirt, MD (Nashville, TN)

714 The Effects of Preoperative SF – 36 Mental Component Summary Scores and Patient Pain Expectations on Clinical Outcomes Following Anterior Cervical Discectomy and Fusion
2:40 – 2:49 PM
 AUTHORS
Patrick Schweder, MD; Peter Hansen, PhD; Alex Green, MD; Gerardine Quaghebeur, MD; Tipu Aziz, MD, FRCS (Oxford, United Kingdom)

715 Total Sensory Rhizotomy in the Treatment of Intractable Trigeminal Neuralgia
2:50 – 2:59 PM
 AUTHORS
John J. DePowell, MD; Nancy McMahon, RN; Jeffrey T. Keller, PhD; John M. Tew Jr., MD (Cincinnati, OH)

716 Subcutaneous Electric Stimulation for the Treatment of Pain due to Postherpetic Neuralgia
3:00 – 3:09 PM
 AUTHORS
Ivano Dones, MD; Angelo Franzini, MD; Giovanni Broggi, MD (Milan, Italy)

717 Gamma Knife Radiosurgery for Trigeminal Neuralgia in Patients with MRI Detected Vascular Impingement of the Affected Nerve
3:10 – 3:19 PM
 AUTHORS
Jason P. Sheehan, MD; Chun Po Yen, MD; David Schlesinger, PhD (Charlottesville, VA)

718 Deep Brain Stimulation of the Thalamic Radiation for Chronic Pain: Target Functional Connectivity and Analgesia
3:20 – 3:29 PM
 AUTHORS
Patrick Schweder, MD; Peter Hansen, PhD; Alex Green, MD; Gerardine Quaghebeur, MD; Tipu Aziz, MD, FRCS (Oxford, United Kingdom)

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

John Loeser Lecture
Destructive Pain Procedures in Neurosurgery
4:01 – 4:45 PM
 SPEAKER
Yucel Kanpolat, MD

Symposium
Ulterior Stimulation… Where are We Going with Neuromodulation?
4:46 – 5:30 PM
 SPEAKER
Daniel S. Bennett

AANS/CNS Section on Pediatrics
2:00 – 5:30 PM
 MODERATOR
Mark D. Krieger, MD
Korbel Ballroom 2A/3A, Colorado Convention Center

Presentation of Hydrocephalus Association and Kenneth Shulman Awards
Donald D. Matson Lecture
2:00 – 2:53 PM
 SPEAKER
Thomas G. Luerssen, MD

750 Long-term Follow-up of Surgically Treated Juvenile Patients with Moyamoya Disease
2:54 – 3:01 PM
 AUTHORS
Maki Mukawa, MD; Tadashi Nariai, MD, PhD; Masaru Aoyagi, MD, PhD; Kikuo Ohno, MD, Prof (Tokyo, Japan)
**Discussant**  
3:02 – 3:03 PM  
**Open Discussion**  
3:04 – 3:05 PM

**751**  
**Inflammation Suppresses Hypoxia-Inducible-Factor 2 in Injured Developing Brain: A Mechanism to Explain Cumulative Damage from Combined Infection and Hypoxia-Ischemia**  
3:06 – 3:13 PM  
**AUTHORS**  
Shenandoah Robinson, MD; Vincent Ma, BA; Obihe Irumudomon, BA; Mark Eden, BA; Elizabeth Shick, MS (Cleveland, OH)  
**Discussant**  
3:14 – 3:15 PM  
**Open Discussion**  
3:16 – 3:17 PM

**752**  
**Intrathecal Spinal Cord Gene Delivery for Spinal Muscular Atrophy**  
3:18 – 3:25 PM  
**AUTHORS**  
Jason S. Taub, MD; Griffin Baum; Thais Federici, PhD; Nicholas M. Boulis, MD (Atlanta, GA)  
**Discussant**  
3:26 – 3:27 PM  
**Open Discussion**  
3:28 – 3:29 PM

**Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center**  
3:30 – 4:00 PM

**753**  
**Cerebral Salt Wasting: Incidence and Risk Factors in 282 Sequential Pediatric Brain Tumor Patients**  
4:01 – 4:08 PM  
**AUTHORS**  
Ashutosh Singhal, MD; Anish Mitra, BSc; Douglas Cochrane, MD; Paul Steinbok, MBBS, FRCS (Vancouver, Canada)  
**Discussant**  
4:09 – 4:10 PM  
**Open Discussion**  
4:11 – 4:12 PM

**754**  
**Radiographic Features Which Predict Lack Of Complete Response To Chemotherapy In Pediatric Intracranial Germinomas**  
4:13 – 4:20 PM  
**AUTHORS**  
Jamie Bothelo II, MD; Mark D. Krieger, MD; Ira E. Bowen, BA; Yasser Jeelani, MD; J Gordon McComb, MD (Los Angeles, CA)  
**Discussant**  
4:21 – 4:22 PM  
**Open Discussion**  
4:23 – 4:24 PM

**755**  
**Expression of Aquaporin-4 in Experimental Mild Hydrocephalus**  
4:25 – 4:32 PM  
**AUTHORS**  
Kamran Aghayev, MD (Tampa, FL); Ercan Bal, MD; Tural Rahimi, MD; Melike Mut, MD; Serdar Balci, MD (Ankara, Turkey); Frank Vrionis, MD, PhD (Tampa, FL); Nejat Akalan, PhD (Ankara, Turkey)  
**Discussant**  
4:33 – 4:34 PM  
**Open Discussion**  
4:35 – 4:36 PM

**756**  
**Ring Apophyseal Fracture in Pediatric Lumbar Disc Herniation – A Common Entity**  
4:37 – 4:44 PM  
**AUTHORS**  
Tarek A. Radwan, MD; Michael K. Simoni, BS; Clifford J. Eskey, MD, PhD; Brent T. Harris, MD, PhD; Carter P. Dodge, MD; Simon C. Hillier, MD; Beth A. Costine, PhD; Ann-Christine Duhaime, MD (Lebanon, NH)  
**Discussant**  
4:44 – 4:45 PM

**757**  
**Use of Unplanned Reoperation Rates in Pediatric Neurosurgery as a Quality Indicator**  
4:46 – 4:53 PM  
**AUTHORS**  
Nitin Mukerji, MD, MSc; Alistair Jenkins, FRCS; Claire Nicholson, FRCS; Damian Holliman, FRCS, PhD; Patrick Mitchell, FRCS (Newcastle upon Tyne, United Kingdom)  
**Open Discussion**  
4:53 – 4:54 PM

**758**  
**Retrospective Study of Spinal Metastasis of Pilocytic Astrocytoma**  
4:55 – 5:02 PM  
**AUTHORS**  
Joseph Chung, BS; Mark D. Krieger, MD; Ira E. Bowen, BA; Yasser Jeelani, MD; J G. McComb, MD (Los Angeles, CA)  
**Open Discussion**  
5:02 – 5:03 PM

**759**  
**The Effect of Age in a Swine Model of Pediatric TBI: An MRI-Histologic Correlational Study**  
5:04 – 5:11 PM  
**AUTHORS**  
Tarek A. Radwan, MD; Michael K. Simoni, BS; Clifford J. Eskey, MD, PhD; Brent T. Harris, MD, PhD; Carter P. Dodge, MD; Simon C. Hillier, MD; Beth A. Costine, PhD; Ann-Christine Duhaime, MD (Lebanon, NH)  
**Open Discussion**  
5:11 – 5:12 PM
760
Endoscopic Transventricular Anatomy of the Mesial Temporal Lobe: Cadaveric Demonstration of a New Operative Approach
5:13 – 5:20 PM
AUTHORS
Biji Bahluleyan, MD; William Fisher, BA; Alan R. Cohen, MD (Cleveland, OH)
Open Discussion
5:20 – 5:21 PM

761
Disconnective Surgery for Sub Hemispheric Epilepsy
5:22 – 5:29 PM
AUTHORS
Roy T. Daniel, MD (Lausanne, Switzerland); Santhosh Thomas, MD; Maya Thomas, MD; Ari G. Chacko, MD (Vellore, India)
Open Discussion
5:29 – 5:30 PM

740
Clinical Application of Diffusion Tensor Tractography (DTT) of Traumatic Brachial Plexus Injuries
4:01 – 4:12 PM
AUTHORS
Thomas Schmidt, MD (Guenzburg, Germany); Thomas Kretschmer, MD, PhD (Oldenburg, Germany); Christian Heinen, MD; Maria Pedro, MD; Gregor Antoniadis, MD, PhD; Christian-Rainer Wirtz, MD, PhD; Ralph Konig, MD (Guenzburg, Germany)

Discussion
4:13 – 4:15 PM

741
Behavioral Outcomes in Rodents Following Nerve Injury Repair Using Skin Derived Precursor Schwann Cells
4:16 – 4:27 PM
AUTHORS
Ranjan Kumar, MSc; Rajiv Midha, MD, MSc; Joey K. Grochmal, MD; Stephen W. Kemp, PhD; Joanne Forden, BSC; Kathleen J. Khu, MD; Aubrey A. Webb, PhD (University of Calgary, Canada)
Discussion
4:28 – 4:30 PM

743
Intraoperative High Resolution Ultrasound in the Management of Traumatic Nerve Lesions: A New Technique
4:31 – 4:41 PM
AUTHORS
Ralph W. Koenig, MD; Maria T. Pedro, MD; Christian P.G. Heinen, MD; Wirtz R. Christian, MD, PhD; Gregor Antoniadis, MD, PhD (Guenzburg, Germany); Thomas Kretschmer, MD, PhD (Oldenburg, Germany); Thomas E. Schmidt (Guenzburg, Germany)
Discussion
4:42 – 4:44 PM

744
Schwannomatosis: Surgical Management of an Under-Recognized Group of Patients
4:45 – 4:56 PM
AUTHORS
Marie-Noelle Herbet-Bloun, MD; Kimberly K. Amrami, MD; Neel B. Shah, MD; Dusica Babovic-Vukasanovic, MD; Robert J. Spinner, MD (Rochester, MN)
Discussion
4:57 – 4:59 PM
Intraoperative Mapping to Maximize Extent of Resection for Low-grade Gliomas
5:00 – 5:11 PM

AUTHORS
Yvens B. Fernandes, MD, PhD; Ricardo Ramina, MD, PhD; Guilherme Borges, MD, PhD (Campinas, Brazil)

Discussion
5:12 – 5:14 PM

Question and Answer
5:15 – 5:30 PM

AANS/CNS Section on Tumor I
2:00 – 5:30 PM

MODERATOR
Jeffrey N. Bruce, MD, FACS
Korbel Ballroom 1ABC, Colorado Convention Center

Presentation of Tumor Section Awards
2:00 – 2:05 PM

SPEAKER
Jonas M. Sheehan, MD

Symposium
Maximizing Extent of Resection in Primary Brain Tumors: Why Would We, and How Should We?
2:06 – 2:10 PM

SPEAKER
Jeffrey N. Bruce, MD, FACS

Why Extent of Resection Matters for Low and High Grade Gliomas?
2:11 – 2:30 PM

SPEAKER
Mitchel S. Berger, MD, FACS

Intraoperative MRI for Maximizing Extent of Resection
2:51 – 3:10 PM

SPEAKER
Volker Seifert, MD, PhD

Intraoperative Fluorescence Labeling of Malignant Gliomas to Maximize Extent of Resection
3:11 – 3:30 PM

SPEAKER
David W. Roberts, MD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

Afternoon Session
4:00 – 5:30 PM

MODERATOR
John A. Boockvar, MD

Announcement of Current and Future ABTA Award Winners
4:01 – 4:05 PM

SPEAKER
Christopher M. McPherson, MD

HSP Immunotherapy for Recurrent Glioblastoma Patients: PI(3) Kinase Activation Predicts Poor Clinical Outcomes
4:06 – 4:20 PM

SPEAKER
Andrew Thomas Parsa, MD, PhD

Post-transcriptional Regulation of MGMT: Implications on the Prognostic/Predictive Value of MGMT Promoter Methylation
4:21 – 4:30 PM

AUTHORS
Clark C. Chen, MD, PhD; Pascal Zinn, MD; Deepa Kushwaha, PhD; Kimberly Ng, BS; Debbie Koay, PhD (Boston, MA)

CpG Island DNA Methylation Sites are Associated with Atypical Potential in Meningiomas
4:31 – 4:40 PM

AUTHORS
Andrew E. Sloan, MD; Mark D. Adams, PhD; Mark Cohen, MD; Nick Bambakidis, MD; Robert Miller, PhD; Warren R. Selman, MD; Jill Barnholtz-Sloan, PhD (Cleveland, OH)

Histopathologic Features of Brain Tumors Revealed with In-vivo Intraoperative Fiber-optic Confocal Laser Endomicroscopy Using Fluorescein Sodium in Humans
4:41 – 4:50 PM

AUTHORS
Nikolay L. Martirosyan, MD; Jennifer M. Eschbacher, MD; Peter Nakaji, MD; Nader Sanai, MD; Kris A. Smith, MD; Mark C. Preul, MD; Robert F. Spetzler, MD (Phoenix, AZ)

Temozolamide and Radiation Therapy Does Not Cause EGFRvIII Loss
4:51 – 5:00 PM

AUTHORS
Ankit I. Mehta, MD, Oscar Persson, MD, PhD; James E. Herndon II, PhD; Gary E. Archer, PhD; Roger McLendon, MD; Amy B. Heimberger, MD; Duane A. Mitchell, MD, PhD; Darell D. Bigner, MD, PhD; John H. Sampson, MD, PhD (Durham, NC)
724
Direct Cortical Stimulation for Continuous Monitoring of Motor-Evoked Potentials During Supratentorial Tumor Resection
5:01 – 5:10 PM
AUTHORS
Matthew C. Tate, MD, PhD; Lanjun Guo, MD; Roger S. Noss, PhD; Andrew T. Parsa, MD, PhD; Manish K. Aghi, MD, PhD; Edward F. Chang, MD, PhD (San Francisco, CA)

725
Surgery for Gliomas Adjacent to Motor Cortex and Factors Influencing Surgical Management in 365 Cases
5:11 – 5:20 PM
AUTHORS
Sujit S. Prabhu, MD; Tarek Abuleem, MD; Dima Suki, PhD; Ian McCutcheon, MD; Jeffrey Weinberg, MD; Frederick Lang, MD; Franco Demonte, MD, FRCS; Raymond Sawaya, MD (Houston, TX)

726
Insular Glioma Resection with Intra-operative High-field Magnetic Resonance Imaging and Functional Neuro-navigation
5:21 – 5:30 PM
AUTHORS
Xiaolei Chen, MD, PhD; Yan Zhao, MD; Fei Wang, MD; Zhijun Sun, MD; Xi Zhao, MD; Yubo Wang, MD; Bai-nan Xu, MD, PhD (Beijing, China)

AANS/CNS Section on Tumors Business Meeting
5:31 – 5:35 PM

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June 10 and 11, 2011 • New York City

Advanced Endoscopic Skull Base and Pituitary Surgery

COURSE DIRECTORS:
Vijay K. Anand, MD, FACS
Theodore H. Schwartz, MD, FACS

GUEST FACULTY:
Aldo Stamm, MD
John Jane Jr., MD

2-DAY COURSE DESCRIPTION: This course is a comprehensive overview of the newly emerging field of endoscopic skull base surgery combining didactic sessions with hands-on cadaver dissection. At the completion of this course, participants should be well equipped to start utilizing these approaches in their own practices. Endoscopic instruments and surgical navigation equipment will be available to participants for use on fresh cadavers during laboratory sessions. Participants will have an opportunity to discuss difficult cases with the faculty during panel discussions. Early registration is highly recommended.

ACCREDITATION & CREDIT DESIGNATION STATEMENTS: Weill Cornell Medical College is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

Weill Cornell Medical College designates this educational activity for a maximum of 16 AMA PRA Category 1 Credit(s)™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

LOCATION:
Weill Cornell Medical College
1500 York Avenue, New York, NY 10065

INFORMATION: Course Coordinator
Tel: 212-585-6800
email: jeg9059@nyp.org
www.cornellneurosurgery.org

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PANELISTS:
William T. Couldwell, MD, PhD
Nelson M. Oyesiku, MD, PhD
Craig Andrew Van Der Veer, MD
The panelists will describe the certification process from residency to certification. Emphasis will be placed on strategies to prepare for the oral ABNS examination.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss requirements for board certification
• Prepare for the ABNS oral examination

302 Multidisciplinary Management of Cerebral AVMs
Room 302, Colorado Convention Center

MODERATOR:
Neil A. Martin, MD

PANELISTS:
Aaron S. Dumont, MD
David M. Hasan, MD
Bruce E. Pollock, MD
Robert H. Rosenwasser, MD, FACS
Gary K. Steinberg, MD, PhD

Complimentary Registration for Candidates and Medical Students
This will be a comprehensive discussion of the multidisciplinary management of complex cerebral AVMs. The perspective of neurosurgeons, radiosurgeons and interventionalists will be presented.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss indications for treatment of patients with AVMs

304 Foraminal and Far Lateral Lumbar Disc Herniations
Korbel Ballroom 1ABC, Colorado Convention Center

MODERATOR:
John A. Jane Sr., MD, PhD

PANELISTS:
Benoit Goulet, MD, FRCSC
Patrick W. Hitchon, MD
Noel I. Penn, MD, FRCS
Paul D. Sawin, MD

The clinical and imaging characteristics of foraminal and far lateral lumbar disc herniations, as well as the surgical anatomy will be presented. The various surgical approaches paramedian, transmuscular and endoscopic will be described and the indications will be discussed.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Recognize a foraminal and far lateral lumbar disc herniation
• Identify the surgical approaches for foraminal and lateral lumbar disc herniations
• Assess the prognosis of foraminal and lateral disc herniations
LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:

- Identify potential brain targets for deep brain stimulation in Parkinson’s disease
- Discuss technical alternatives in placement of DBS electrodes
- Review complications of DBS for Parkinson’s disease

307 Current and Future Treatments for Hydrocephalus
Room 402, Colorado Convention Center
MODERATOR: Mark G. Luciano, MD, PhD
PANELISTS: Marvin Bergsneider, MD
Abhaya Vivek Kulkarni, MD, FRCS
Michael G. Muñoz, MD
David I. Sandberg, MD

This seminar will review the physiology of hydrocephalus and how new shunt systems and sensor technology are likely to change our way of treating patients. The dynamic aspects of CSF flow and pressure gradients will be discussed, as well as what pressure sensors reveal about the causes of patient symptoms and how a shunting system might be made using physiological data.

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

- Identify CSF dynamics and how it changes with hydrocephalus
- Distinguish the relationship between clinical symptoms and CSF pressure measurements
- Recognize how this new approach might lead to a better shunt system based on physiological measurements

308 History of Neurosurgery for Neuro-endocrinology
Room 112, Colorado Convention Center
MODERATOR: Chris A. Sloffer, MD, MBA
PANELISTS: Aaron A. Cohen Gadol, MD
Giuseppe Lanzino, MD
Charles Joseph Prestigiacomo, MD, FACS

There is a robust history of the components of the neuroendocrine systems spanning from ancient times, through the middle ages, and well into the 20th century as the physiology and pathology of those organs became better understood. This seminar will explore the history of neuroendocrine system.

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

- Discuss the evolution of thought regarding the pineal body from ancient through modern times
- Explain the history of thought regarding the pituitary gland
- Describe Harvey Cushing’s views regarding the pituitary and the surgical approaches to that area
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

312 Building a Comprehensive Spine Center
Room 403, Colorado Convention Center
MODERATOR: E. Hunter Dyer, MD
PANELISTS: Mark D. D’Alise, MD, FACS
James J. Lynch, MD
Nathan E. Simmons, MD
This seminar instructs participants on how to develop a multidisciplinary spine center within their hospital and community setting.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Recognize the core components to build an effective spine center
• Discuss interventional options and design treatment protocols for spine
• Apply strategies for developing an effective spine program in your practice

313 Neurosurgical Management of Intractable Pain
Korbel Ballroom 2B/3B, Colorado Convention Center
MODERATOR: Philip L. Gildenberg, MD, PhD
PANELISTS: Giovanni Broggi, MD
Robert M. Levy, MD, PhD
Oren Sagher, MD
Konstantin V. Slavin, MD
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
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
• Accomplish the aforementioned via ‘real life’ case examples

316 Cerebral Trauma State-of-the-Art Treatment
Korbel Ballroom 4ABC, Colorado Convention Center
MODERATOR:
Alex B. Valadka, MD, FACS
PANELISTS:
Austin R. Colohan, MD, FACS
Joshua Eric Medow, MD
David O. Okonkwo, MD, PhD
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

317 The Spectrum of Adjuvant Therapy for Brain Tumors
Room 203, Colorado Convention Center
MODERATOR:
Frederick F. Lang Jr., MD
PANELISTS:
Jeffrey N. Bruce, MD, FACS
Randall Lynn Jensen, MD, PhD
James M. Markert Jr., MD
Complimentary Registration for Candidates and Medical Students
This seminar will provide a state-of-the-art review of the different treatment options available for patients with malignant brain tumors. These treatment options influence radiation therapy, including radiosurgery and chemotherapy.
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 treatment options as well as benefits and pitfalls of giant intracranial carotid artery aneurysms
• Name the patient population that will benefit from open versus endovascular treatment of giant aneurysms
• Describe the indications for 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

319 Controversies in Cerebrovascular and Endovascular Neurosurgery
Room 301, Colorado Convention Center
MODERATOR:
Erol Veznedaroglu, MD
PANELISTS:
Christopher J. Koebe, MD
Michael T. Lawton, MD
Elad I. Levy, MD, FACS
Christopher S. Ogilvy, MD
B. Gregory Thompson Jr., 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 are often controversial. This seminar will examine the different treatment modalities for carotid artery disease, intracerebral aneurysms, and arteriovenous malformations. The panelists will present data and their own personal treatment methods to support their particular position. Each panelist will present their actual treatment paradigms and will be asked to support it.
LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Discuss current standards of care for adjuvant therapy of malignant gliomas
• Describe current scientific advances and newly developed adjuvant therapies for malignant gliomas
• Discuss current problems with the design of effective therapies and recommend appropriate treatment options
• Design the best treatment programs based on current data for patients with brain tumors
LEARNING OBJECTIVE:
After completing this educational activity, participants should be able to:
• Discuss and employ techniques to avoid complications in cases of minimally invasive spine, fusions and deformity corrections.

321 Treatment of Congenital Spine Deformity in Both Pediatric and Adult Patients

Room 406, Colorado Convention Center

MODERATOR: Amer F. Samdani, MD

PANELISTS: Joshua E. Heller, MD
Steven W. Hwang, MD
Daniel M. Scuibba, MD

This course targets both the pediatric and adult surgeon who treats patients with congenital spine deformities. Brief didactic lectures will summarize the classification, natural history, and treatment options for patients with congenital spine deformity. Case based discussions will highlight key points such as: indications for operating, surgical technique of posterior based hemivertebrae resection, deformity correction maneuvers, and postoperative management.

LEARNING OBJECTIVES:
After completing this educational activity, participants should be able to:
• Review the classification of congenital spine deformities
• Discuss the indications for operating on congenital spine deformities
• Explain the pros and cons of short segment fusion versus growing system in pediatric patients with congenital spine deformity
• Discuss the indications and treatment options of congenital spine deformity in the adult patient
• Review the associated anomalies and their work up in patients with congenital spine deformity

Plenary Session III
9:40 AM – 1:15 PM

MODERATORS
Nicholas M. Barbaro, MD
Anil Nanda, MD, FACS

Four Seasons Ballroom, Colorado Convention Center

3-D Microsurgery, Live Surgery and Web-based Conferencing: The Tools for the Next Generation of Neurosurgical Education

9:40 – 9:44 AM

SPEAKER
Aaron A. Cohen-Gadol, MD

Louise Eisenhardt Lecture

The Indomitable Spirit of Margaret Tobin Brown

9:45 – 10:04 AM

INTRODUCED BY
Shelly D. Timmons, MD, PhD

SPEAKER
Kristen Iversen

800 Final Results of the SVASNA Study in Idiopathic Normal Pressure Hydrocephalus

10:05 – 10:19 AM

AUTHORS
Ullrich Meier, MD, PhD; Johannes Lemcke, MD (Berlin, Germany); Cornelia Muller, MD; Michael Fritsch, MD, PhD (Greifswald, Germany); Michael Kiefer, MD, PhD; Regina Eymann, MD, PhD (Homburg/Saar, Germany); Uwe Kehler, MD, PhD; Niels Langer, MD (Hamburg-Altona, Germany); Martin Schuhmann, MD, PhD; Andreas Speil, MD (Tubingen, Germany); Friedrich Weber, MD, PhD; Victor Remenez, MD (Cologne-Merheim, Germany); Veit Rohde, MD, PhD; Hans-Christian Ludwig, MD, PhD (Gottingen, Germany); Dirk Stengel, MD, PhD (Berlin, Germany)

DISCUSSANT
Guy McKhann II, MD

801 Deep Brain Stimulation of the Human Entorhinal Region Enhances Memory

10:20 – 10:34 AM

AUTHORS
Itzhak Fried, MD, PhD; Nanthia A. Suthana, PhD; Zuifi Haneef, MD; Roy Mukamel, PhD; John Stern, MD; Eric Behnke, BSEE; Charles Wilson, PhD; Arne Ekstrom, PhD; Barbara Knowlton, PhD (Los Angeles, CA)

DISCUSSANT
Andres M. Lozano, MD, PhD

Special Lecture

Advances in Neurosurgical Simulation

10:35 – 10:49 AM

INTRODUCED BY
James T. Rutka, MD, PhD

SPEAKER
Robert DiRaddo, PhD

802 Cerebral Cavernous Malformations and Pregnancy – Risk of Hemorrhage and Influence on Obstetric Management

10:50 – 11:04 AM

AUTHORS
Christopher D. Witw, BSC (Winnipeg, Canada); Amal Abou Hamden, MBBS, BSc; Abhaya V. Kulkami, MD, PhD (Toronto, Canada); Joseph A. Silvaggio, MD (Winnipeg, Canada); M. Christopher Wallace, MD, MSc (Toronto, Canada)

DISCUSSANT
Frederic B. Meyer, MD

Integra Foundation Award

803 Transsphenoidal Surgery for Cushing’s Disease After Non Diagnostic Inferior Petrosal Sinus Sampling

11:05 – 11:19 AM
AUTHORS
Sameer Sheth, MD, PhD; Matthew K. Mian, BS; Jonathan Neal; Beverly Biller, MD; Brooke Swearingen, MD (Boston, MA)

DISCUSSANT
Nelson M. Oyesiku, MD, PhD

NREF Grant Presentations
11:20 – 11:24 AM

SPEAKER
Griffith R. Harsh IV, MD

CNS Update
11:25 – 11:27 AM

SPEAKER
Christopher C. Getch, MD
2010 – 2011 CNS President

804
Anterior Versus Transforaminal Lumbar Interbody Fusion in Long Deformity Constructs: A Matched Cohort Analysis
11:28 – 11:42 AM

AUTHORS
Ian G. Dorward, MD; Lawrence G. Lenke, MD; Keith H. Bridwell, MD; Patrick T. O’Leary, MD; Geoffrey E. Stoker, BS; Joshua M. Pahys, MD; Matthew M. Kang, MD; Brenda A. Sides, MS; Linda A. Koester, BS (St. Louis, MO)

DISCUSSANT
Tyler Robert Koski, MD

Special Presidential Announcement:
Introduction of the Next AANS President, Paul C. McCormick, MD, 2011 – 2012 AANS Strategic Plan
11:43 – 11:45 AM

SPEAKER
James T. Rutka, MD, PhD

Van Wagenen Fellow Presentation
11:46 – 11:50 AM

INTRODUCED BY
David W. Newell, MD

RECIPIENTS
Nicholas F. Marko, MD
Ben Waldau, MD

Van Wagenen Lecture
Formation of Lasting Memories. Nogo Receptor-regulated Synaptic Plasticity in Health and CNS Damage
11:51 AM – 12:10 PM

INTRODUCED BY
Nicholas M. Barbaro, MD

SPEAKER
Lars Olson, PhD

805
Three-year Follow-up Results of BRAT
12:11 – 12:25 PM

AUTHORS
Robert F. Spetzler, MD; Cameron McDougall, MD; Joseph Zabramski, MD; Felipe Albuquerque, MD; Peter Nakaji, MD; Shez Partovi, MD (Phoenix, AZ)

DISCUSSANT
Elad I. Levy, MD, FACS

Humanitarian Award
12:26 – 12:30 PM

INTRODUCED BY
Roberto C. Heros, MD

RECIPIENT
Barth A. Green, MD, FACS

WINS Louise Eisenhardt Award
806
Proteomic Profiling of Pediatric Brainstem Glioma Using Cerebrospinal Fluid
12:31 – 12:45 PM

AUTHORS
Amanda Muhs Saratsis, MD; Suresh Magge, MD; Javad Nazarian, PhD (Washington, DC)

DISCUSSANT
Timothy B. Mapstone, MD

807
Relationship between Cerebral Perfusion Pressure Thresholds and Mortality from Severe Traumatic Brain Injury
12:46 – 1:00 PM

AUTHORS
Baxter Allen, MD; Linda M. Gerber, PhD; Ya Lin Chiu, MS; Jeffrey P. Greenfield, MD, PhD; Jamshid Ghajar; MD, PhD (New York, NY)

DISCUSSANT
Shelly D. Timmons, MD, PhD

808
Lateral Hypothalamic Deep Brain Stimulation for Intractable Obesity: Optimization of Electrode Stimulation Parameters from Metabolic Chamber Experiments
1:01 – 1:15 PM

AUTHORS
Donald M. Whiting, MD; Nestor D. Tornycz, MD (Pittsburgh, PA); Julian Bailes, MD (Morgantown, WV); Benjamin B. Whiting (Pittsburgh, PA); Lilian Levitan, PhD; Virgile Lecoultre, PhD; Eric Ravussin, PhD (Baton Rouge, LA); Bryan Wilent, PhD; Dunbar Alcindor, MD; Cathrin Butefisch, MD; Cynthia Angle, RN; Diane Cantella, RN; Michael Y. Oh, MD (Pittsburgh, PA)

DISCUSSANT
Robert G. Grossman, MD

AANS/CNS Cerebrovascular Section
2:00 – 5:30 PM
Korbel Ballroom, 4ABC, Colorado Convention Center
Symposium
Impact on Outcome of Multi-Modality Management of Cerebrovascular Diseases: The Collaborative Approach
2:00 – 3:29 PM
MODERATORS
Ketan R. Bulsara, MD
Andrew J. Ringer, MD

Introduction of Raymond M. Donaghy Lecturer
2:00 – 2:05 PM
SPEAKER
Murat Gunel, MD

Raymond M. Donaghy Lecture
2:06 – 2:35 PM
SPEAKER
Daniel Louis Barrow, MD

Endovascular Training Standards: One Size Does Not Fit All
2:36 – 2:47 PM
SPEAKER
Andrew J. Ringer, MD

Multimodal AVM Management
2:48 – 3:00 PM
SPEAKER
Gary K. Steinberg, MD, PhD

Management of Giant Aneurysms
3:01 – 3:29 PM
SPEAKER
Howard A. Riina, MD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

Abstract Presentations
4:01 – 5:30 PM
MODERATORS
Giuseppe Lanzino, MD
J D. Mocco, MD

810
Neurosurgeons Involved in the Treatment of Retinoblastoma
4:01 – 4:08 PM
AUTHORS
Pascal Jabbour, MD; Hatem Kobtan, MD; Carol Shields, MD; Robert Rosenwasser, MD (Philadelphia, PA)

Synthes Cerebrovascular Section Resident/Fellow Award

811
Moyamoya Phenomena in the United States
4:09 – 4:16 PM
AUTHORS
Robert M. Starke, MD, MSc (Virginia, NY); Webster Crowley, MD (Virginia, VA); Mitchell Mallett, PhD (Philadelphia, PA); Pascal M. Jabbour, MD; Fernando Gonzalez, MD; Stavropoulos I. Tjoumakaris, MD; Robert H. Rosenwasser, MD; Aaron Dumont, MD (Philadelphia, PA)

812
Intrathecally Administered Ibuprofen Effectively Decreases ICAM-1 Expression and Angiographic Vasospasm in a Primate Model of SAH
4:17 – 4:24 PM
AUTHORS
Gustavo Pradilla, MD; Tomas Garzon Muvdi, MD; Diana L. Vargas, MD; Federico G. Legnani, MD; Quoc Anh Thai, MD; Carlos A. Pardo, MD; Rafael J. Tamargo, MD, FACS (Baltimore, MD)

813
Relation of Signal Hyperintensities on MRI and Neuropsychological Function in Patients with Unruptured Cerebral Aneurysms
4:25 – 4:32 PM
AUTHORS
Yoshiaki Kumon, MD, Prof; Hideaki Watanabe, MD, PhD; Akihiro Inoue, MD, PhD; Masahiko Tagawa, MD, PhD; Shiro Ohue, MD, Prof; Takanori Ohnishi, MD, Prof (Toon City, Japan)

814
Microembolic Signal Monitoring after Coiling of Unruptured Cerebral Aneurysms: An Analysis of 123 Consecutive Cases
4:33 – 4:40 PM
AUTHORS
Gerit A. Schubert, MD; Claudius Thome, MD (Innsbruck, Austria); Joseph M. Eskridge, MD (Seattle, WA)

Question and Answer
4:41 – 4:50 PM

815
Does Magnetic Resonance Imaging Produce Further Benefit for Detecting a Bleeding Source in Subarachnoid Hemorrhage of Unknown Origin?
4:51 – 4:58 PM
AUTHOR
Homajoun Maslehaty (Kiel, Germany)

816
Detection of Pulsation in Ruptured and Unruptured Cerebral Aneurysms by ECG-Gated 3D-CT Angiography (4D-CTA) with 320-Row Area Detector CT (ADCT) and Evaluation of its Clinical Usefulness
4:59 – 5:06 PM
AUTHORS
Motoharu Hayakawa, MD; Shingo Maeda, MD; Akio Sadato, MD; Takeya Watabe, MD; Syuei Imizu, MD; Takafumi Kaito, MD; Natsuki Hattoni, MD; Thukasa Ganaha, MD; Shigeta Moriya, MD; Kazuhiro Katada, MD; Kazuhiro Murayama, MD; Yoko Kato, MD; Yuichi Hikose, MD, PhD (Toyoake, Japan)

817
Inhibition of Vasospasm in Haptoglobin 2-2 Mice Using S-4-CPG S-4-carboxyphenylgicine), a Metabotropic Glutamate Receptor Antagonist
5:07 – 5:14 PM
AUTHORS
Tomas Garzon Muvdi, MD, MSc; Gustavo Pradilla, MD; Jake Ruzevick, BS; Matthew Bender, BS; Lindsay Edwards; Rafael J. Tamargo, MD, FACS (Baltimore, MD)

818
Diffusion Weighted Imaging Changes Associated with Stent Mediated Aneurysm Coiling are Stent Type and Location Dependent
5:15 – 5:22 PM
AUTHORS
Adel M. Malek, MD, PhD; Robert S. Heller, MD; William Miele, MD; Daniel D. Do Dai, MD (Boston, MA)

819
Graft Longevity and Neurological Outcome for Intracranial Arterial Pedicle and Vein Bypass Surgery
5:23 – 5:30 PM
AUTHORS
Sheau Fung Sia, MD, MS (Macquarie Park, Sydney, Australia); Andrew Stewart Davidson, FRACS; Nazih Nabil Assaad, FRACS; Marcus Stoodley, PhD, FRCS; Michael Kerin Morgan, MD, FRACS (Macquarie University, Sydney, Australia)

AANS/CNS Section on Stereotactic and Functional Surgery
2:00 – 5:30 PM
MODERATORS
Aviva Abosch, MD, PhD
Konstantin V. Slavin, MD
Korbel Ballroom 1DEF, Colorado Convention Center

Symposium
2:00 – 2:59 PM
Functional Neuroanatomy of the Movement Disorders
2:00 – 2:20 PM
SPEAKER
Robert E. Gross, MD, PhD
Functional Neuroanatomy of the Epilepsies
2:21 – 2:40 PM
SPEAKER
Warren W. Boling, MD, FRCSC
Functional Neuroanatomy of Psychiatric Disorders
2:41 – 2:59 PM
SPEAKER
G. Rees Cosgrove, MD, FRCSC

820
Phase Coherence of Neuronal Noise in Hippocampal Epileptiform Dynamics
3:00 – 3:09 PM
AUTHORS
Demitre Serletis, MD, PhD; Taufik A. Valiante, MD, PhD, FRC; Berj L. Bardakjian, PhD; Peter L. Carlen, MD, FRCSC (Toronto, Canada)

821
How Brain Rhythms Influence Occipital Cortex During Visual Processing
3:10 – 3:19 PM
AUTHORS
Kai J. Miller, PhD; Adam O. Hebb, MD; Rajesh PN Rao, PhD; Jeffrey G. Ojemann, MD (Seattle, WA); Eric C. Leuthardt, MD (St. Louis, MO)

822
Intraoperative Wireless Fast Scan Cyclic Voltammetry Monitoring in Humans
3:20 – 3:29 PM
AUTHORS
Kendall H. Lee, MD, PhD; Su Youne Chang, PhD; Kevin Bennet, MBA; Jamie VanGompel, MD; DongPyo Jang, PhD; Christopher Kimble, BS; Inyong Kim, BS; Fredric Meyer, MD; Richard Marsh, MD; Stephan Goerss, BA (Rochester, MN); Paul Garris, PhD (Normal, IL); Charles Blaha, PhD (Memphis, TN)
Deep Brain Stimulation in Human Globus Pallidus Internus Inhibits and Time-locks Local Neuronal Activity
4:10 – 4:19 PM
AUTHORS
Daniel R. Cleary, MS (Portland, OR); Ashwin Viswanathan, MD (Houston, TX); Diaa Bahgat, MD; Mary M. Heinricher, PhD; Kim J. Burchiel, MD (Portland, OR)

High-resolution FMRI Detects Activity and Neuromodulation of Individual Brainstem Nuclei
4:20 – 4:29 PM
AUTHORS
Joe Wildenberg, PhD; Mitchell Tyler, MS; Yuri Danilov, PhD; Kurt Kaczmarek, PhD; John Kuo, MD, PhD; Mary E. Meyerand, PhD (Madison, WI)

The Neural Basis of Cortical-Stimulation Induced Memory Retrieval in Humans
4:30 – 4:39 PM
AUTHORS
Bradley C. Lega; Joshua Jacobs, PhD; Christopher Anderson, MD (Philadelphia, PA)

Dynamic Information Transfer Between Cortical Motor Areas During Movement
4:40 – 4:49 PM
AUTHORS
Kai J. Miller, PhD; Adam O. Hebb, MD (Seattle, WA); Mitchel S. Berger, MD (San Francisco, CA); Eberhard E. Fetz, PhD; Jeffrey G. Ojemann, MD (Seattle, WA)

Pharmacological Silencing of the Nucleus Accumbens Shell Reduces Oral EtOH Consumption in Alcohol-Preferring (P) Rats
4:50 – 4:59 PM
AUTHORS
Jessica Wilden, MD; Simon N. Katner, PhD; Victoria K. McQueen, BS; William J. McBride, MD, PhD; Zachary A. Rodd, PhD (Indianapolis, IN)

Noninvasive Connectivity Analysis: A Novel Methodology for Functional Cortical Mapping
5:00 – 5:09 PM
AUTHORS
Laszlo Entz, MD (Hungary, Budapest); Stephan Bickel, MD, PhD (New Hyde Park, NY); Corey J. Keller, MSc (Bronx, NY); A.M. Clare Kelly, PhD (New York, NY); Peter B. Kingsley, PhD; Sanjay Jain, MD (Manhasset, NY); Sean Hwang, MD (New Hyde Park, NY); Lorand Eross, MD, PhD (Hungary, Budapest); Ashesh D. Mehta, MD, PhD (New Hyde Park, NY)

Long-term Outcomes after Gamma Knife Radiosurgery for Non-functional Pituitary Adenomas
5:10 – 5:19 PM
AUTHORS
Kyung Jae Park, MD, PhD; Phillip V. Parry, MD; Hideyuki Kano, MD, PhD; Douglas Kondziolka, MD; Ajay Niranjan, MD, MBA; John C. Flickinger, MD; L. Dade Lunsford, MD (Pittsburgh, PA)

Prognosticators of Seizure Freedom after Surgery for Focal Cortical Dysplasia: A Systematic Review
5:20 – 5:30 PM
AUTHORS
Nathan Rowland, MD, PhD; Nicholas Barbaro, MD; Edward Chang, MD (San Francisco, CA)
Byron Cone Pevehouse, MD
Award
880
Rise in Non-accidental Head Trauma Incidence and Severity in Infants Associated with Economic Recession
4:01 – 4:07 PM
AUTHORS
Mary I. Huang, MS; MaryAnn O’Riordan, MS; Ellen Fitzenzider, RN; Lolita McDavid, MD; Shenandoah Robinson, MD (Cleveland, OH)

Robert Florin MD Award
881
Neurosurgeons as Innovators: An Examination of Patents and Royalties
4:08 – 4:14 PM
AUTHORS
Maya Babu, MD, MBA (Rochester, MN); Brian V. Nahed, MD (Boston, MA); Robert F. Heary, MD (Newark, NJ)

882
Feasibility and Safety of Single-stage Stereotactic Biopsy and Radiosurgery and its Cost Benefit Compared with Two-stage Procedure
4:15 – 4:21 PM
AUTHORS
Kyung Jae Park, MD, PhD; Hideyuki Kano, MD, PhD; Douglas Kondziolka, MD, MSc; Ajay Nirajan, MD, MBA; John C. Flickinger, MD; L. Dade Lunsford, MD (Pittsburgh, PA)

883
Comparative Effectiveness of Minimally Invasive versus Open Transforaminal Lumbar Interbody Fusion: Two-year Assessment of Narcotic Use, Return to Work, Disability, and Quality of Life
4:22 – 4:28 PM
AUTHORS
Matthew J. McGirt, MD; Owoicho Adogwa, BS; Scott Parker, BS; Oran Aaronson, MD; Joseph S. Cheng, MD (Nashville, TN)

884
More Complications on a Neurological Surgery Service after Implementation of Work Hour Restriction
4:29 – 4:35 PM
AUTHORS
Travis Dumont, MD; Ryan Jewell, MD; Michael A. Horgan, MD; Paul L. Penar, MD; Bruce I. Tranmer, MD (Burlington, VT)

885
Role of Polyanalgesia and Its Cost Impact in Intrathecal Drug Delivery
4:36 – 4:42 PM
AUTHORS
Krishna Kumar, MBBS, FRCS; Syed AA Rizvi; Sharon Bishop, RN, MS (Regina, Canada)

886
Chronic Subdural Hematoma Treatment with SEPS Costs Less than Burr Holes
4:43 – 4:49 PM
AUTHORS
David Balser, BS; Shaun Rodgers, MD; Jason H. Huang, MD; Uzma Samadani, MD, PhD (New York, NY)

887
4:50 – 4:56 PM
AUTHORS
Hormuzdiyar H. Dasenbrock, BA; Timothy F. Witham, MD; Jean Paul Wolinsky, MD; Ziya L. Gokaslan, MD; Ali Bydon, MD (Baltimore, MD)

888
A Review of Defensive Medicine in Neurosurgery
4:57 – 5:03 PM
AUTHORS
Timothy R. Smith, MD, PhD; Christopher Getch, MD; George Cybulski, MD; Hunt Batjer, MD (Chicago, IL)

889
Patient Population and Reimbursement in a Tertiary Neurosurgical Service Before and After the Massachusetts Health Care Reform
5:04 – 5:10 PM
AUTHORS
Clemens M. Schirmer, MD (Springfield, MA); Carl B. Heilman, MD (Boston, MA)

890
Access to Neurosurgical Care in Upstate New York
5:11 – 5:17 PM
AUTHORS
John W. German, MD; Julia Cox, BS; Shiveindra Jayamohan, MD; Wayne N. Shelton, PhD (Albany, NY)

Question and Answer
5:18 – 5:30 PM

AANS/CNS Section on Spine
2:00 – 5:30 PM
Korbel Ballroom, 4DEF, Colorado Convention Center
Symposium
Costs and Quality – The Changing Landscape of Spinal Surgery with Healthcare Reform
2:00 – 3:30 PM

MODERATORS
Joseph S. Cheng, MD, MS
Christopher E. Wolfia, MD

Introduction to Costs and Quality – The Changing Landscape of Spinal Surgery with Healthcare Reform
2:00 – 2:18 PM

SPEAKER
Michael W. Groff, MD
Evidenced Based Medicine and Guidelines in Spinal Surgery
2:19 – 2:36 PM

SPEAKER
John E. O'Toole, MD
Development of Quality Indicators in Spinal Surgery
2:37 – 2:54 PM

SPEAKER
Daniel K. Resnick, MD
Quality and Value Assessment of Spine Surgery in the Era of Healthcare Reform
2:55 – 3:12 PM

SPEAKER
Matthew Joseph McGirt, MD
Incorporating Quality and Compliance Into Your Spinal Surgery Practice
3:13 – 3:29 PM

SPEAKER
John Joseph Knightly, MD

Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center
3:30 – 4:00 PM

Abstract Presentations
4:01 – 5:30 PM

MODERATOR
Joseph S. Cheng, MD, MS

860
Cost Effectiveness of Multilevel Hemilaminectomy for Lumbar Stenosis Associated Radiculopathy
4:01 – 4:08 PM

AUTHORS
Matthew J. McGirt, MD; Erin Fulchiero, BS; Brandon J. Davis, MD, PhD; Owoicho Adogwa, BS; Oran Aaronson, MD; Joseph S. Cheng, MD; Clinton Devin, MD
(Nashville, TN)

861
The AOSpine North America Cervical Spondylotic Myelopathy Study: Perioperative Complication Rates Associated with Surgical Treatment Based on a Prospective Multicenter Study of 302 Patients
4:09 – 4:17 PM

AUTHORS
Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD (Charlottesville, VA); Branko Kopjar, MD (Seattle, WA); Paul M. Arnold, MD (Kansas City, KS); Sang Wook Yoon, MD (Atlanta, GA); Alexander R. Vaccaro, MD (Philadelphia, PA); Darrel S. Brodke, MD (Salt Lake City, UT); Michael Janssen, MD (Denver, CO); Jens Chapman, MD (Seattle, WA); Rick Sasso, MD (Indianapolis, IN); Eric J. Woodard, MD (Boston, MA); Robert Banco, MD (Newton, MA); Eric Massicotte, MD (Toronto, Canada); Mark B. Dekutoski, MD (Rochester, MN); Ziya L. Gokaslan, MD (Baltimore, MD); Christopher Bono, MD (Boston, MA); Michael G. Fehlings, MD, PhD (Toronto, Canada)

International Travel Scholarship
863
Craniovertebral Realignment: Concept, Design and Technique
4:26 – 4:33 PM

AUTHOR
Atul H. Goel, MD (Mumbai, India)

Question and Answer
4:34 – 4:38 PM

864
The Short Term Effect of Surgery on Health Related Quality of Life and Functional Outcome in Patients with Metastatic Epidural Spinal Cord Compression (MESCC) Initial Results of the AOSpine North America Prospective Multicenter Study
4:39 – 4:46 PM

AUTHORS
Branko Kopjar, MD, PhD (Seattle, WA); Michael Fehlings, MD (Toronto, Canada); Alexander Vaccaro, MD (Philadelphia, PA); Paul Arnold, MD (Kansas City, KS); Charles Fisher, MD (Vancouver, Canada); Ziya Gokaslan, MD (Baltimore, MD); James Schuster, MD (Philadelphia, PA); Mark Dekutoski, MD (Rochester, MN); Joel Finkelstein, MD (Toronto, Canada); Laurence Rhines, MD (Houston, TX)
865  
Predictors of Success in the Surgical Treatment for Cervical Spondylotic Myelopathy: Analysis of the AOSpine North America Multi-Center Prospective Study in 260 Subjects  
4:47 – 4:54 PM

AUTHORS  
Michael Fehlings, MD (Toronto, Canada); Branko Kopjar, MD, PhD (Seattle, WA); S. Tim Yoon, MD (Atlanta, GA); Paul Arnold, MD (Kansas City, KS); Eric Massicotte, MD (Toronto, Canada); Alexander Vaccaro, MD (Philadelphia, PA); Darrel Brodke, MD (Salt Lake City, UT); Christopher Shaffrey, MD (Charlottesville, VA); Eric Woodard, MD (Boston, MA); Robert Banco, MD (Newton, MA); Jens Chapman, MD (Seattle, WA); Michael Janssen, DO (Denver, CO); Rick Sasso, MD (Indianapolis, IN); Christopher Bono, MD (Boston, MA); Mark Dekutoski, MD (Rochester, MN); Ziya Gokaslan, MD (Baltimore, MD)

866  
Long-term Prospective Analysis of Minimally Invasive Transforaminal Lumbar Interbody Fusion and Percutaneous Pedicle Screw Placement  
4:55 – 5:02 PM

AUTHORS  
Mick Perez Cruet, MD, MSc; Girish Hiremath, MD; Ramiro Perez de la Toro, MD; David Cooley, BA; Sophia Lang Perez, BA (Royal Oak, MI)

867  
Intra-operative Glucose Levels and its Association with Developing Post-operative Surgical Site Infections Following Spine Surgeries  
5:03 – 5:10 PM

AUTHORS  
Frances Mao; Ajit Krishnaney, MD (Cleveland, OH)
844  
Radiation Exposure in Subarachnoid Hemorrhage Patients: Potential Quality Improvement Target  
4:17 – 4:24 PM  
AUTHORS  
Judith M. Wong, MD; Ning Lin, MD; Christopher B. Martel; Georgios A. Zenonos, MD; William B. Gormley, MD  
(Boston, MA)

845  
Does a Clinically Useful Threshold for Tissue Oxygen Tension Exist in Cerebral Ischemia?  
4:25 – 4:32 PM  
AUTHORS  
Troels Halfeld Nielsen, MD; Susanne Irene Engell, MS; Rikke Aagaard Johnsen, MS; Mette Katrine Schulz, MD, PhD; Oke Gerke, MSC; Palle Toft, MD, PhD; Carl Henrik Nordstrom, MD, PhD (Odense C, Denmark)

846  
Inhibition of Nogo Receptor 1 Enhances Recovery of Cognitive Function after Traumatic Brain Injury  
4:33 – 4:40 PM  
AUTHORS  
Jing Tong, MD; Xiaodi Han, MD; Xiaolin Chen, MD; Jason H. Huang, MD (Rochester, NY)

Question and Answer  
4:41 – 4:53 PM

847  
Role of MRI in Outcome Prediction in Acute Traumatic Brain Injury: Preliminary Results of a Prospective Multicenter Observational Trial  
4:54 – 5:01 PM  
AUTHORS  
Esther Yuh, MD, PhD; Shelly R. Cooper, BA; Diane J. Morabito, RN (San Francisco, CA); David O. Okonkwo, MD, PhD (Pittsburgh, PA); Alex B. Valadka, MD (Austin, TX); Wayne A. Gordon, PhD (New York, NY); Andrew Maas, MD, PhD (Antwerp, Belgium); Pratik Mukherjee, MD, PhD; Geoffrey T. Manley, MD, PhD (San Francisco, CA)

850  
Axonal Regeneration after Spinal Cord Injury in Conditional EphrinB2 Knock-out Mice  
5:02 – 5:09 PM  
AUTHORS  
Zeguang Ren, MD, PhD; Xiaolin Chen, MD; Jiankai Yang, MD; Xi Li (Rochester, NY); Yuanli Zhao, MD, PhD (Beijing, China); Maiken Nedergaard, MD, PhD (Rochester, NY)

851  
Suppression of Thalamocortical Oscillation Following Traumatic Brain Injury in Rats  
5:10 – 5:17 PM  
AUTHORS  
Jonathan A. Forbes, MD; Peter E. Konrad, MD; Chang Qing Kao (Nashville, TN)

852  
Venous Thromboembolism in Subarachnoid Hemorrhage  
5:18 – 5:25 PM  
AUTHORS  
Erin M. Wash, BS (New Orleans, LA); Joseph C. Serrone, MD (Cincinnati, OH); Jed Hartings, PhD; Norberto Andaluz, MD; Mario Zuccarello, MD (Cincinnati, OH)
### Nanoparticles as Vectors for Therapeutic Delivery in Glioma

3:16 – 3:29 PM  
**SPEAKER**  
Costas G. Hadjipanayis, MD, PhD

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### Coffee Break in Exhibit Halls A, B & C, Colorado Convention Center

3:30 – 4:00 PM

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### Abstract Presentations

4:01 – 5:30 PM  
**MODERATOR**  
Manish K. Aghi, MD

<table>
<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<td>870</td>
<td>c-Myc Modulates the Dynamic Transition Between Tumor Initiating States in Glioblastoma</td>
<td>Clark C. Chen, MD, PhD; David Kozono, MD, PhD; Masayuki Nitta, MD, PhD; Kimberly Ng, BS; Pascal O. Zinn, MD; Deepa Kushwana, PhD; Debbie Kaoy, PhD; Shan Zhu, PhD (Boston, MA)</td>
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<td>871</td>
<td>West of Scotland GBM Survival vs Stupp GBM Calculator Study</td>
<td>Mario Teo, MBBS, BSc; Brian Clark, MD; Willie Stewart, MD; Roy Rampling, MD, Prof; Allan James, MD; Jerome St. George, MBBS, FRCS (Glasgow, United Kingdom)</td>
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<td>872</td>
<td>Complement Activation in Necrotic Tissue Promotes Glioblastoma Proliferation and Angiogenesis</td>
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**Rooms 210 & 212, Colorado Convention Center**  
Phone: 303-228-8421  
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- Saturday, April 9  7:00 AM– 6:00 PM  
- Sunday, April 10  7:00 AM– 6:00 PM  
- Monday, April 11  7:00 AM– 6:00 PM  
- Tuesday, April 12  7:00 AM– 6:00 PM  
- Wednesday, April 13  7:00 AM– 6:00 PM

**AANS Hotel Office**  
Agate B, Hyatt Regency Denver  
Phone: 303-486-4908  
**Hours:**  
- Thursday, April 7  7:00 AM – 5:00 PM  
- Friday, April 8  7:00 AM – 5:00 PM  
- Saturday, April 9  7:00 AM – 5:00 PM  
- Sunday, April 10  7:00 AM – 5:00 PM  
- Monday, April 11  7:00 AM – 5:00 PM  
- Tuesday, April 12  7:00 AM – 5:00 PM  
- Wednesday, April 13  7:00 AM – 5:00 PM

**AANS Press Room**  
**Room 101, Colorado Convention Center**  
Phone: 303-228-8431  
No outside materials for distribution and no sharing of lists will be allowed.  
**Hours:**  
- Monday, April 11  8:30 AM – 5:00 PM  
- Tuesday, April 12  8:30 AM – 5:00 PM  
- Wednesday, April 13  8:30 AM – 5:00 PM

**AANS Speaker Ready Room**  
**Room 103, Colorado Convention Center**  
Phone: 303-228-8428  
**Hours:**  
- Saturday, April 9  7:00 AM – 5:00 PM  
- Sunday, April 10  6:00 AM – 4:00 PM  
- Monday, April 11  6:30 AM – 5:00 PM  
- Tuesday, April 12  6:30 AM – 5:00 PM  
- Wednesday, April 13  6:30 AM – 5:00 PM

**Accessibility**  
The Colorado Convention Center is committed to accommodating the needs of individuals with disabilities in accordance with the Americans with Disabilities Act. All areas are wheelchair accessible. Electronic doors are located at Lobbies A, B, D and F entrances. TDD phones are located in Lobbies A and B and the Grand Concourse by the women’s restroom. These telephones adhere to ADA code height requirements. All elevators are equipped with Braille signage. Additionally, restrooms and drinking fountains are ADA accessible.

To reserve wheelchairs and scooters call Scootaround at (888) 441-7575 or visit their web site at www.scootaround.com. There is a minimum of three days per rental or you can rent by the week. Rates include delivery and pickup to and from your hotel or the convention center.

**Admission To Sessions/Exhibits**  
Badges are required to enter all scientific sessions and the exhibit hall. Badges are distributed at the time of registration. Badges must be worn at all times. Participants of the 2011 AANS 79th Annual Scientific Meeting are identified by the following badge colors:  
- **Physician Attendees**  
  - Green  
- **Candidates/Medical Student**  
  - Burgundy  
- **Physician Extenders (RNs, PAs and Allied)**  
  - Purple  
- **Staff**  
  - Royal Blue  
- **Exhibitors**  
  - Gray  
- **Spouse/Guests**  
  - Orange  
- **Media**  
  - Yellow

**Americans 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 and services. If you require any of the auxiliary aids or services identified in the Americans with Disabilities Act in order to attend any AANS program, please contact the AANS Headquarters Office, Rooms 210, 212, Colorado Convention Center or call 303-228-8421.

**Attendee On-Site Registration Hours**  
**Lobby B, Colorado Convention Center**  
- Friday, April 8  5:00 – 7:00 PM  
- Saturday, April 9  6:30 AM – 5:30 PM  
- Sunday, April 10  6:30 AM – 5:30 PM  
- Monday, April 11  6:30 AM – 4:00 PM  
- Tuesday, April 12  6:30 AM – 4:00 PM  
- Wednesday, April 13  6:30 AM – 4:00 PM
Attire
Attire for the AANS 79th Annual Scientific Meeting is business or business casual depending on the nature of the event or unless otherwise indicated.

Baggage and Coat Check
Baggage and coat check will be available in the Registration Area, Lobby B, Colorado Convention Center during the following times:

- **Saturday, April 9**: 7:30 AM – 5:30 PM
- **Sunday, April 10**: 7:30 AM – 5:30 PM
- **Monday, April 11**: 6:30 AM – 6:00 PM
- **Tuesday, April 12**: 6:30 AM – 6:00 PM
- **Wednesday, April 13**: 6:30 AM – 6:00 PM

A $2 fee will be charged to the attendee for each item checked.

Beverage Breaks
**Saturday, April 9**
- F Concourse South, Colorado Convention Center
  - 9:45 – 10:15 AM
  - 2:45 – 3:15 PM

**Sunday, April 10**
- 700’s Corridor, Colorado Convention Center
  - F Concourse South, Colorado Convention Center
  - 9:45 – 10:15 AM
  - 2:45 – 3:15 PM

**Monday, April 11 – Wednesday, April 13**
- Exhibit Halls A, B & C, Colorado Convention Center
  - 9:00 – 9:45 AM
  - 3:30 – 4:00 PM

Boarding Pass
Print your boarding pass before you leave for the airport! The Boarding Pass Kiosk is in Registration, Lobby B, Colorado Convention Center.

Business Center
A full-service business center is located just off Lobby A in the red-carpeted corridor. We provide on-site printing, signage, equipment rentals and much more! Attendees will appreciate the Hands Free Ship-It-Home Service, which stores, packs and ships attendee items for one low price. No need to lug it everywhere back to the hotel or airport.

The Business Center also has workstations with high-speed Internet, as well as, office supplies, copy, fax and printing services. You can also upload your artwork on our website for expedient service!

In addition, the Business Center remains open two hours after exhibits close on the last day for exhibitor shipping.

Contact the business center in advance for special printing, signage services and rentals of copiers and fax machines. Hours are 7:30 AM – 5:30 PM on convention days.

**Phone:** 720-904-2300
**Fax:** 720-904-0796

**Cell Phones And Pagers**
As a courtesy to other attendees and speakers, the AANS asks that you turn off or put your cell phone or pager on silence during all scientific sessions. If you must make a call, please step outside the meeting room.

**Child Care Services**
Please check with your concierge at your hotel.

**CME Self-Reporting Stations**
AANS Resource Center, Booth #2026.

**E-Mail Stations**
AANS Resource Center, Booth #2026, and Lobby B, Colorado Convention Center.

**Exhibit Hours**
**Exhibit Hall A, B & C, Colorado Convention Center**
- **Monday, April 11**: 9:00 AM – 4:00 PM
- **Tuesday, April 12**: 9:00 AM – 4:00 PM
- **Wednesday, April 13**: 9:00 AM – 4:00 PM

**First Aid Room**
Located in Lobby E, Colorado Convention Center. The station will be staffed by an EMT.

**Phone:** 303-228-8007

**First Aid Room**
- **Friday, April 8**: 8:00 AM – 7:00 PM
- **Saturday, April 9**: 7:00 AM – 7:00 PM
- **Sunday, April 10**: 7:00 AM – 7:00 PM
- **Monday, April 11**: 6:00 AM – 6:00 PM
- **Tuesday, April 12**: 6:00 AM – 6:00 PM
- **Wednesday, April 13**: 6:00 AM – 7:00 PM
Future Meetings

80th AANS Annual Scientific Meeting
Miami, FL
April 14-18, 2012

81st AANS Annual Scientific Meeting
New Orleans, LA
April 27-May 1, 2013

82nd AANS Annual Scientific Meeting
San Francisco, CA
April 5-9, 2014

Headquarters Hotel

Hyatt Regency Denver
650 15th Street
Phone: (303) 436-1234

High Altitude Tips

DRINK PLENTY OF WATER while in Denver. Drinking plenty of water is the number one way to help your body adjust easily to the higher altitude. The low humidity in Colorado keeps the air dry, like the desert, so you need twice as much water in Denver as you would drink at home. It is also recommended that you go easy on the alcohol in the mountains and in Denver, as its effects will feel stronger there. The effects of exercise are more intense as well. If you normally run 10 miles a day at home, you might try six miles in Denver.

Information Booth

Lobby A, Colorado Convention Center

Hours:
Friday, April 8 5:00 – 7:00 PM
Saturday, April 9 7:00 AM – 5:30 PM
Sunday, April 10 7:00 AM – 5:30 PM
Monday, April 11 6:45 AM – 6:00 PM
Tuesday, April 12 6:45 AM – 6:00 PM
Wednesday, April 13 6:45 AM – 5:00 PM

iPod touch® Charging Centers And Information/Help

AANS Resource Center, Booth 2026 and iPod touch® lounge in Lobby B, Colorado Convention Center.

Lost And Found

Security Office off of Lobby B by the 700 Rooms.

Meeting Location

Colorado Convention Center
1700 14th Street
Denver, CO 80202
www.denverconvention.com

Miami Convention And Visitors Bureau – AANS Annual Scientific Meeting 2012

Lobby A, Colorado Convention Center

No Smoking Policy

Smoking is not permitted at any of the official AANS events, the Colorado Convention Center and the majority of the official AANS hotels. In addition, smoking is prohibited by Colorado state law in all bars, nightclubs and restaurants.

Recorded Presentations

2011 AANS ANNUAL SCIENTIFIC MEETING ARCHIVED PRESENTATIONS

You can have 24/7, on-demand access to over 200 presentations delivered here in Denver.

• Catch sessions missed due to schedule conflicts
• Revisit or download favorite presentations
• Access stellar research with discussions of neurosurgery’s new frontiers

All presentations will be available for downloading in MP4 formats for iPad®, iPod touch® or iPhone® devices. MP3 audio files can be downloaded as a free additional feature. Content is archived for 2 years online, and a CD-ROM option is available.

See pages 32-33 or stop by the AANS Resource Center (Booth 2026).

Restaurant Reservation Desk

Please visit the Information Desk located on the Main Level of the Colorado Convention Center in Lobby A.

Phone: 303-228-8167

Hours:
Friday, April 8 3:00 – 7:00 PM
Saturday, April 9 9:00 AM – 5:00 PM
Sunday, April 10 9:00 AM – 5:00 PM
Monday, April 11 9:00 AM – 5:00 PM
Tuesday, April 12 9:00 AM – 5:00 PM
Wednesday, April 13 9:00 AM – 4:00 PM
You may also download the application “Open Table” on your iPod touch®. Open Table is an iTouch application that allows you to make free restaurant reservations at over 11,000 Open Table-enabled restaurants. Specify your dining date, desired time and party size to view available tables at nearby restaurants listed by proximity or plotted on an interactive map. Making reservations has never been easier!

Safety

For your safety, the AANS recommends removing your badge when walking throughout the city of Denver. In addition, please refrain from walking by yourself in the city streets at night.

Shuttle Bus Schedule

The AANS will provide shuttle service at regular intervals between the Colorado Convention Center and the following hotels:

Convention Center – Outside Lobby B

Route A  Pink Route- Every 12-24 minutes
  Westin Denver Downtown – Lawrence Street near front entrance
  Ritz Carlton – 19th Street side of hotel
  Marriott City Center – Curbside on California Street

Route B  Green Route – Every 12-24 minutes
  Sheraton Denver – Curbside on Court Place
  Grand Hyatt – Welton Street side of hotel
  Brown Palace – Across Tremont Street

All other official AANS annual meeting hotels are within walking distance.

Please note: A full schedule is available at the above hotels and in Registration.

Taping And Photography Prohibited

Audio-taping, videotaping or photography by individuals is strictly prohibited in all scientific sessions.

Ticket Sales, Tours And Attractions

Tickets for the Opening Reception, Practical Clinics, Breakfast Seminars, Mid-level Practitioner Lunch Session, YNS Lunch Session (No Charge), International Reception (No Charge), WINS Breakfast and the History Section Dinner are available for purchase (if applicable) in Registration located in Lobby B of the Colorado Convention Center.

The AANS Tour Desk is located at the Hyatt Regency Denver Lobby, in front of Perks. Attendees can sign up and purchase tickets for guest tours. All tours will depart from the front of the Hyatt Regency Denver.

Hours:
Saturday, April 9  8:30 AM – 4:00 PM
Sunday, April 10  7:30 AM – 4:00 PM
Monday, April 11  7:30 AM – 1:30 PM

Transportation

CAR RENTAL
AANS is pleased to provide members the opportunity for car rental savings through Alamo Rent-a-Car in conjunction with the AANS Annual Scientific Meeting. Alamo provides AANS members’ year round discounts off car rentals at 138 locations in North America and 275 overseas locations. In addition, members are given the opportunity to earn valuable miles, credits or points with airlines and hotels through Alamo’s partnership with most major airlines and hotel partners. To request your year-round discount, call Alamo toll-free at the number listed below or visit online at www.alamo.com. At the time of reservation, don’t forget to identify yourself as an AANS member and provide the identification information below.

For Reservations Call:
Alamo Rent-a-Car  
(800) 462-5266
I.D. Number: 706768

RETURN AIRPORT SERVICE – SAVE OVER $35 FROM THE TAXI RATE!

Direct-to-airport service will be available from the Colorado Convention Center beginning Tuesday, April 12 (1:15 – 6:15 PM) through Wednesday April 13 (11:15 AM – 6:15 PM) with continuous service every hour. The cost for this direct service is $20.00 which includes luggage handling. Due to limited seating, you are strongly encouraged to make your reservation well in advance. If interested, send an e-mail to www.seatinfo@seatplanners.com with your full name and preferred date and time of service requested. Keep in mind that the airport is approximately 25 miles from downtown Denver, so allow yourself an ample amount of time before your flight. You will receive a confirmation email indicating that your return trip to the airport is scheduled and confirmed. All reservations must be paid on-site in Denver at the AANS Shuttle Information Counter located just outside Lobby B Registration prior to your shuttle departure. Cash and credit card (Visa, MasterCard, and American Express) payments will be accepted.

WiFi

Complimentary in the Colorado Convention Center.
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Candidate (Resident/Fellow) status is for individuals enrolled in a neurosurgery residency training program approved by ABNS, RCPSC, or MCNS, or in an accredited neurosurgical fellowship. No application is necessary, residents and fellows in Canada and Mexico are encouraged to register with AANS member services to insure their inclusion.

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International Candidate (Resident/Fellow) category is for residents or fellows who are enrolled in a verifiable non-North American neurological training program. Each applicant for International Resident Membership shall complete an electronic application and provide a letter from the applicant’s Program Director certifying that the applicant is in a training program.

Honorary members shall be chosen from recognized leaders in the field of neurological sciences. Honorary Membership is bestowed upon the recipient by the AANS as described in “The Rules and Regulations of the Board of Directors of the American Association of Neurological Surgeons (AANS)”.

Associate category includes doctors in related medical disciplines who are non-neurosurgeons as well as neuroscience nurses, nurse practitioners, and physician assistants who reside in North America.

Allied membership is for individuals who are certified surgical technologists and are certified by the Liaison Council on Certification for the Surgical Technologist with advanced certification in neurological surgery or who are office staff of a member neurosurgeon.

Lifetime membership is for individuals who are retired from the practice of neurosurgery or who have been an AANS member for at least 30 years.
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For more information visit the AANS Resource Center in booth #2026 in the Exhibit Hall.

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David Michael Wrubel, MD
Benson P. Yang, MD
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Yi Jonathan Zhang, MD
Samuel D. Critides Jr., MD
Dennis James Geyer, MD
Jonathan E. Gilhooly, MD
Christopher J. Koebbe, MD
Luis Manuel Tumialan, MD

New Fellow of the American Association of Neurological Surgeons (FAANS) Members (22)

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W. Bradley Jacobs, MD, FRCSc
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Alessandro Landi, MD
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Nils Warneke, MD
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Zhiqiang Yi, MD
Mohammad Yehya Zabara, MD

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Hitoshi Fukuda, MD
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Andrew W. Grande, MD
Manish K. Kasliwal, MD
Joshua Landa, MD
Denny Martin, MD
Reza Mobasheri, MD
Mustafa Nadi, MD
Veronica Ortega Lopez, MD
Ahmed Salem Quateen, MBChB
Vafi Salmasi, MD
Manish S. Sharma, MBBS
GandhiVarme Subramaniam, MD
Fernando Techy, MD
Travis Tierney, MD, PhD
Gentian Toshkezi II, MD
Geberth Urbania, MD
Takafumi Wataya, MD
Hekmat Zarzour, MD

New International Candidate/Resident-Fellow Members (58)
Mahmoud Abbassy, MD
Maleeha Ahmad, MRCS
Hazem Akil, MD
Bhawani S. Sharma, MBBS

New Associate Members (31)
Tracey Anderson, ACNP
Rebecca Babcock, MS, PA-C
Cammi Bowman, RN
Melissa Clark, PA-C
Dori Danbury, PA-C
Donald Eilsworth, RN
Linda Ferranti, RN
Shawn Finnegan, PA-C
Holly Gallup, RN
Jeffrey Haughton, PA-C
MEMBERSHIP IN THE AANS

<table>
<thead>
<tr>
<th></th>
<th>Dues</th>
<th>Journal of Neurosurgery</th>
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<tbody>
<tr>
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<tr>
<td>Non-Neurosurgeon Physician Nurse, Nurse Practitioner, Physician Assistant</td>
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<td>Surgical Assistant</td>
<td>$85</td>
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</tr>
<tr>
<td>Neurosurgical Office Staff</td>
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</tr>
</tbody>
</table>

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Annual Scientific Meeting Mission
The main goals of the American Association of Neurological Surgeons’ Annual Scientific Meeting are to serve as a primary source of continuing medical education, tailored specifically to our specialty; to advance neuroscience research, 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 2011 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 to provide continuing medical education for physicians. The AANS designates this live activity for a maximum of 42.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

* A maximum of 18.25 AMA PRA Category 1 Credit(s)™ for general sessions only.

CME Credit For Breakfast Seminars
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### DISCLOSURES

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<td>Robert A. Mericle, MD</td>
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Boston Scientific
  Consultant
Farideh Nejat, MD
  Tehran University of Medical Sciences
  Consultant
Russ P. Nockels, MD
  Medtronic
  Consultant
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  Globus
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  Consultant
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  Consultant
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  Orthofix
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Autonomic Technologies  
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SurgiVision  
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