



09

AANS ANNUAL MEETING

May 2–6, San Diego, California

SHAPING NEUROSURGERY'S
FUTURE: A GLOBAL ENTERPRISE

Program Guide



American
Association of
Neurological
Surgeons

and the American Association of Neurosurgeons

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	Friday, May 1	Saturday, May 2	Sunday, May 3		
6:30 AM					
7:00 AM					
7:30 AM					
8:00 AM		International Master Practical Clinics	AM Practical Clinics		
8:30 AM					
9:00 AM					
9:30 AM					
10:00 AM					
10:30 AM					
11:00 AM					
11:30 AM					
12:00 PM				All Day and PM Practical Clinics	All Day Practical Clinics
12:30 PM					
1:00 PM					
1:30 PM					
2:00 PM					
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3:00 PM					
3:30 PM					
4:00 PM					
4:30 PM					
5:00 PM	Registration				
5:30 PM					
6:00 PM					
6:30 PM			Opening Reception		
7:00 PM					
7:30 PM					
8:00 PM					
8:30 PM					
9:00 PM					

Monday, May 4 Tuesday, May 5 Wednesday, May 6

Registration	Breakfast for Seminar Attendees		Registration	Breakfast for Seminar Attendees		Registration	Breakfast for Seminar Attendees		6:30 AM
	Breakfast Seminars			Breakfast Seminars			Breakfast Seminars		7:00 AM
	Plenary Session I Richard C. Schneider Lecture Hunt-Wilson Lecture Cushing Medal Cushing Oration			Plenary Session II Van Wagenen Lecture Theodore Kurze Lecture Distinguished Service Award Presidential Address			Plenary Session III Louise Eisenhardt Lecture Rhoton Family Lecture Humanitarian Award		7:30 AM
	Lunch	YNS Lunch Session		Lunch			Lunch		8:00 AM
	Visit the Exhibits			Visit the Exhibits			Visit the Exhibits		8:30 AM
	Scientific Sessions Tumor, Spine, S&F, Peds, CV, Trauma, (Bittner Lecture)			Section Sessions Pain, Tumor I, History, Peripheral Nerve, Pediatrics, Socioeconomic Session			Section Sessions CV, S&F, Trauma, Spine, Tumor II		9:00 AM
	American Association of Neurological Surgeons Annual Business Meeting	History Section Dinner							9:30 AM
	International Reception								10:00 AM
									10:30 AM
									11:00 AM
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						8:30 PM			
						9:00 PM			



Edward R. Laws Jr., MD
Richard C. Schneider Lecturer
Plenary Session I, May 4th



Evan Snyder, MD, PhD
Hunt-Wilson Lecturer
Plenary Session I, May 4th



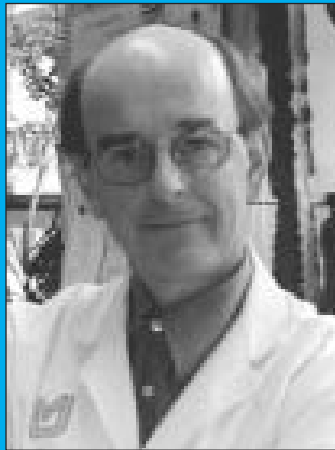
Edward H. Oldfield, MD
Cushing Medalist
Plenary Session I, May 4th



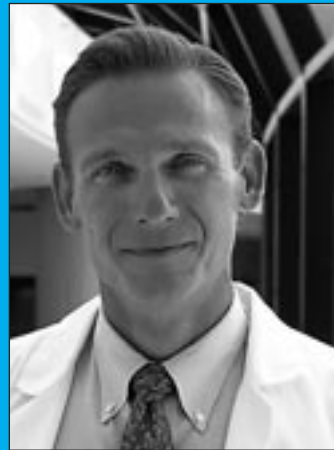
Uwe E. Reinhardt, PhD
Cushing Oration
Plenary Session I, May 4th



Robert L. Martuza, MD
Ronald L. Bittner Lecturer
Scientific Session I, May 4th



Anders Bjorklund, MD
Van Wagenen Lecturer
Plenary Session II, May 5th



John C. Reed, MD, PhD
Theodore Kurze Lecturer
Plenary Session II, May 5th



In Memory of Samuel J. Hassenbusch, MD, PhD
Distinguished Service Award
Plenary Session II, May 5th



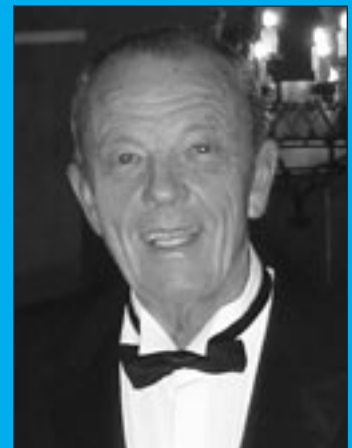
Geraldine Brooks
Louise Eisenhardt Lecturer
Plenary Session III, May 6th



Adm. William Joseph Fallon
Rhoton Family Lecture
Plenary Session III, May 6th



Armando J. Basso, MD, PhD
Humanitarian Award
Plenary Session III, May 6th



Albino P. Bricolo, MD
AANS International Lifetime
Recognition Award
International Reception

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 7,400 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 our public pages at www.NeurosurgeryToday.org.



James R. Bean, MD

James R. Bean, MD, was named president of the American Association of Neurological Surgeons (AANS) at the 76th

AANS Annual Meeting in Chicago, Ill., April 26-May1, 2008. An active member of the AANS since 1988, Dr. Bean served for three years as AANS treasurer prior to serving his term as president-elect. He served as editor of the AANS *Bulletin* (now AANS *Neurosurgeon*) from 2003-2005. He has served as chairman of the AANS/CNS Council of State Neurosurgical Societies (1997-1999), the AANS/CNS Coding and Reimbursement Committee (2000-2002), and the AANS/CNS Washington Committee (2002-2004).

He is a member of the following committees: Executive, Finance, the Neurosurgery Research and Education Foundation (NREF) Executive Council, NeurosurgeryPAC Board of Directors, Nominating (Chair), and Strategic Planning.

Dr. Bean completed his undergraduate work at the University of Virginia in 1970, and received his medical degree from the Tulane University School of Medicine in 1973. He

completed his neurosurgical residency at the University of Kentucky Medical Center in 1980, and a research fellowship focusing on brain tumor immunology (1978) and cerebrovascular ischemia (1979) at the Institute of Neurology, National Hospital for Nervous Diseases, Gough Cooper Department of Neurological Surgery, Queen Square in London, England. Dr. Bean became Board-certified in 1983. Dr. Bean is currently president of Neurosurgical Associates, PSC, in Lexington, Ky., the practice he joined in 1982.

He is a member of numerous professional societies including the American College of Surgeons, American Medical Association, Congress of Neurological Surgeons, Kentucky Medical Association, Kentucky Neurosurgical Society, Lexington Medical Society and the Southern Neurosurgical Society.

Dr. Bean has published numerous journal articles and book chapters including *Concepts in Neurosurgery*, and was a previous editor (1994-2000) of *Changing Times*, a socioeconomic fax newsletter.

CUSHING CIGARETTE BOX

Each year at the Annual Meeting of the American Association of Neurological Surgeons (AANS), the outgoing president is presented with a special memento 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 2,000th 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.

AANS PRESIDENTS

2008–09 James R. Bean, MD
 2007–08 Jon H. Robertson, MD
 2006–07 Donald O. Quest, MD
 2005–06 Fremont P. Wirth, MD

2004–05 Robert A. Ratcheson, MD
 2003–04 A. John Popp, MD
 2002–03 Roberto C. Heros, MD
 2001–02 Stan Pelofsky, MD
 2000–01 Stewart B. Dunsker, MD
 1999–00 Martin H. Weiss, MD
 1998–99 Russell L. Travis, MD, FACS
 1997–98 Edward R. Laws Jr., MD
 1996–97 J. Charles Rich, MD
 1995–96 Sidney Tolchin, MD
 1994–95 Edward L. Seljeskog, MD
 1993–94 Julian T. Hoff, MD
 1992–93 Merwyn Bagan, MD
 1991–92 James T. Robertson, MD
 1990–91 David L. Kelly Jr., MD
 1989–90 Albert L. Rhoton Jr., MD
 1988–89 George T. Tindall, MD
 1987–88 Henry D. Garrettson, MD
 1986–87 Robert G. Ojemann Jr., MD
 1985–86 Russel H. Patterson Jr., MD
 1984–85 Sidney Goldring, MD
 1983–84 Byron C. Pevehouse, MD
 1982–83 Frank R. Wrenn, MD
 1981–82 W. Kamp Clark, MD
 1980–81 Robert B. King, MD
 1979–80 W. Eugene Stern, MD
 1978–79 Donald F. Dohn, MD
 1977–78 Charles G. Drake, MD
 1976–77 Lester A. Mount, MD
 1975–76 Richard L. DeSaussure, MD
 1974–75 Richard C. Schneider, MD
 1973–74 Lyle A. French, MD
 1972–73 William F. Meacham, MD
 1971–72 Guy L. Odom, MD
 1970–71 Collin S. MacCarty, MD
 1969–70 A. Earl Walker, MD
 1968–69 Donald D. Matson, MD
 1967–68 Henry G. Schwartz, MD
 1966–67 Eben Alexander Jr., MD
 1965–66 Francis Murphey, MD
 1964–65 Frank H. Mayfield, MD
 1963–64 Barnes Woodhall, MD
 1962–63 David L. Reeves, MD
 1961–62 Leonard T. Furlow, MD
 1960–61 J. Grafton Love, MD
 1959–60 James L. Poppen, MD
 1958–59 Bronson S. Ray, MD
 1957–58 Howard A. Brown, MD
 1956–57 Leo M. Davidoff, MD
 1955–56 Frederic Schreiber, MD
 1954–55 Harry Wilkins, MD
 1953–54 Edgar A. Kahn, MD
 1952–53 William J. German, MD
 1951–52 Paul C. Bucy, MD
 1950–51 W. Edward Chamberlain, MD
 1949–50 Frank Tumball, MD

1948–49 Winchell M. C. Craig, MD
 1947–48 Cobb Pitcher, MD
 1946–47 Frank R. Teachenor, MD
 1944–46 Franc D. Ingraham, MD
 1943–44 Edgar F. Fincher, MD
 1942–43 Eric Oldberg, MD
 1941–42 Tracy J. Putnam, MD
 1940–41 Cornelius G. Dyke, MD
 1939–40 R. Eustace Semmes, MD
 1938–39 Louise Eisenhardt, MD
 1937–38 Temple Fay, MD
 1936–37 Kenneth G. MacKenzie, MD
 1935–36 Merrill C. Sosman, MD
 1934–35 R. Glen Spurling, MD
 1933–34 John F. Fulton, MD
 1932–33 William P. Van Wagenen, MD

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 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.

2009 Cushing Orator



Uwe E. Reinhardt, PhD

Uwe E. Reinhardt, PhD, a native of Germany, has taught at Princeton University since 1968. He is currently the

James Madison Professor of Political Economy, and professor of Economics and Public Affairs.

He received his undergraduate degree from the University of Saskatchewan, Canada in 1964, when he was also awarded the Governor General’s Gold Medal as Most Distinguished Graduate of his class. He earned a PhD in economics from Yale University in 1970. His doctoral dissertation, entitled *Physician Productivity and Demand for Health Manpower*, was subsequently published as a book.

In 1998, the Columbia University School of Nursing honored him with the Second

Century Award for Excellence in Health Care. He has also received honorary doctorate degrees from the Medical College of Pennsylvania, Mount Sinai School of Medicine, City University of New York, and from the College of Optometry of the State University of New York.

In 1978, he was elected to the Institute of Medicine of the National Academy of Sciences, serving on the Governing Council from 1979 to 1982. At the institute, he has served on a number of study panels, among them the Committee on the Implications of For-Profit Medicine.

Professor Reinhardt has served on numerous governmental committees and commissions. From 1986 to 1995 he served three consecutive three-year terms as a commissioner on the Physician Payment Review Commission. Currently, he is a member of the *Council on the Economic Impact of Health Reform*. He is also on the Board of Advisors of the *National Institute of Health-Care Management*, a Washington based think tank devoted to issues in managed care.

In 1997, he joined the Pew Health Professions Commission and was appointed to the *External Advisory Panel for Health, Nutrition and Population* of The World Bank. In 1998, he was appointed as commissioner of the Kaiser *Commission on Medicaid and the Uninsured*. Since then, he has served on the Board of Trustees of the *Duke University Health System* and chaired the Coordinating Committee of *The Commonwealth Fund’s International Program in Health Policy*.

Professor Reinhardt has been or is a member of numerous editorial boards, among them the *Journal of Health Economics*, the *Milbank Memorial Bank Quarterly*, *Health Affairs*, *The New England Journal of Medicine*, and *The Journal of the American Medical Association*.

Past Cushing Orators

2008 Douglas Brinkley, PhD
 2007 Thomas Friedman
 2006 George F. Will
 2005 Edmund Morris
 2004 Ken Burns
 2003 Henry A. Kissinger, PhD
 2002 Benazir Bhutto

2001 Tom Brokaw
 2000 Doris Kearns Goodwin
 1999 President George Herbert Walker Bush
 1998 Eric Wieschhaus, PhD
 1997 William J. Bennett, PhD
 1996 William F. Buckley, Jr.
 1995 General Colin L. Powell
 1994 Beverly Sills
 1993 The Hon. Morris B. Abram, Esq.
 1992 Susan Eisenhower
 1992 Ronald Z. Sagdeev, PhD
 1991 Yevgeny Yevtushenk
 1990 President James Earl Carter, Jr.
 1989 Theodore Cooper, MD, PhD
 1988 The Hon. Brian Dickson
 1987 H. Ross Perot
 1986 The Hon. Richard D. Lamm
 1985 Raymond E. Arvidson, PhD
 1984 Robert M. Rosenzweig, PhD
 1983 Edmund D. Pellegrino, MD
 1982 Mortimer J. Adler, PhD
 1981 Julius Axelrod, PhD
 1980 The Hon. Kingman Brewster
 1979 The Hon. Paul Rogers
 1978 C. Rollins Hanlon, MD
 1977 Eli Ginzberg, PhD
 1976 Robert O. Egeberg, MD
 1975 Paul W. McCracken, MD
 1974 Malcolm Moos, PhD
 1973 Wernher von Braun, PhD
 1972 Robert Q. Marston, MD
 1971 Wilder Penfield, MD
 1970 Edwin L. Crosby, MD
 1969 John S. Millis, PhD
 1968 R. Buckminster Fuller, PhD
 1967 William H. Stewart, MD
 1966 Philip Handler, MD
 1965 Louise Eisenhardt, MD

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. “Buz” Hoff.



Edward R. Laws, MD, FACS

Edward R. Laws, MD, FACS, is currently director of the Pituitary Tumor Center at the Brigham and

Women’s Hospital in Boston.

In 2007, he joined the faculty at Stanford University, where he served as surgical director of the Pituitary/Neuroendocrine Center. From 1992-2007, he held dual positions as professor of Neurosurgery and professor of Medicine at the University of Virginia, where he also established a Neuroendocrine Center. From 1987-1992, he served as professor and chairman of the Department of Neurosurgery at The George Washington University.

Dr. Laws received his medical degree from Johns Hopkins University School of Medicine in 1963. He did his surgical internship and neurosurgical residency at Johns Hopkins, under A. Earl Walker MD.

Dr. Laws has served in leadership positions in numerous professional medical organizations, including as president of the AANS, the Congress of Neurological Surgeons, the American College of Surgeons, the World Federation of Neurosurgical Societies, and the Pituitary Society.

He was chairman of the Board of Trustees of the Foundation for International Education in Neurosurgery, director of the American Board of Neurological Surgery, and in 2005 was elected to membership in the Institute of Medicine of the National Academy of Science.

During his surgical career, Dr. Laws has operated on more than 7,500 brain tumors, of which 5,000 have been pituitary lesions. He has authored more than 500 scientific papers and book chapters, and with Andrew Kaye, is co-editor of the encyclopedic volume, *Brain Tumors*. He has also served as editor of *Neurosurgery*. He remains actively involved in surgery and brain tumor and neuroendocrine research.

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.



Admiral

William J. Fallon

United States Navy
(Former Commander,
U.S. Central
Command)

In 2008, William J. Fallon retired as a four

star Admiral after a distinguished 40 year career of military and strategic leadership. He led U.S. and Allied forces in eight separate commands and played a leadership role in military and diplomatic matters at the highest levels of the U.S. government.

As head of U.S. Central Command, Admiral Fallon directed all U.S. military operations in the Middle East, Central Asia and Horn of Africa, focusing on combat efforts in Iraq and Afghanistan. He also led the U.S. Pacific Command for two years, directing political-military activities in the Asia-Pacific region. His achievements include a resumption of military engagement with China, new outreach to India, a new agreement on a strategic framework with Japan, and humanitarian assistance to the victims of the 2006 Tsunami in SE Asia.

On 9/11, Admiral Fallon was serving in the Pentagon as vice chief of the Navy. He personally directed the recovery of the Navy staff in the wake of the attack and led in the planning of the retaliatory attacks on Al Qaeda and Taliban forces in Afghanistan. Admiral Fallon directed the planning of the \$124 billion Navy budget and management of 380,000 personnel.

Retiring as former commander of the U.S. Central Command, Fallon led U.S. military forces in the Middle East during the critical turnaround of Iraq in 2007-08. A firm believer in a strong military to ensure stability and security, he shares his passionate views about national security affairs and the United States' role in the world.

Admiral Fallon is a graduate of Villanova University, the U.S. Naval War College, the

National War College, and has a masters in International Studies from Old Dominion University. He started his military career as a combat aviator flying from a carrier during the Vietnam War. Later, he led a Carrier Air Wing in combat during the Gulf War of 1991, and commanded a Navy Battle Group and the U.S. 6th Fleet Battle Force during NATO military operations in Bosnia.

Admiral Fallon is currently a Robert E. Wilhelm Fellow at the Massachusetts Institute of Technology, Center for International Studies.

Van Wagenen Lecture

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



Anders Björklund, MD, PhD

Anders Björklund, MD, PhD, is currently professor of histology and section chief at the Wallenberg Neuroscience Center,

University of Lund, Sweden, a position he has held since 1983. He received his medical degree and doctorate in histology in 1969.

He holds several honorary degrees: Doctor Honoris Causa, University of Turin, Italy (1987); Doctor Honoris Causa, University of Copenhagen, Denmark (1989); and Master of Science, University of Oxford, United Kingdom (1989).

Dr. Björklund is a prolific author, with more than 500 publications in the fields of neuroanatomy, neuronal regeneration, cell transplantation and repair in the central nervous system. He served as president of the European Neuroscience Association from 1996-1998.

He is the recipient of numerous awards and honors. Among these are: The Göran Gustafsson Prize and Award from the Swedish Academy of Sciences, 1990; The IPSEN Prize in Neuronal Plasticity from the IPSEN Foundation, Paris, 1990 (with Albert Aguayo and Fred H. Gage); The International Cajal Award from the Cajal Institute, Madrid,

Spain, 1991; The Charles A. Dana Award from the Dana Foundation, New York, 1992 (with Fred H. Gage); The Jubilee Medal Prize from the Swedish Society for Medicine, Stockholm, 1993; The Anders Jahre Prize for Medical Research from Oslo University, Norway, 1995 (with Lars Olson); The Söderberg Prize for Medical Research from the Swedish Society for Medicine, Stockholm, 2000 (with Olle Lindvall); The Wendell JS Krieg Lifetime Achievement Award from the Cajal Club, June 2006; and the Lundbeck Foundation Nordic Award for Outstanding Research, Copenhagen, March 2007.

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.



Robert L. Martuza, MD

Robert L. Martuza, MD, FACS, is the Higgins Professor of Neurosurgery at Harvard Medical School and chief

of the Neurosurgery Service at the Massachusetts General Hospital, positions he has held since 2000.

He received his medical degree from Harvard Medical School. As a medical student, he worked in virology research and during his internship and residency in neurosurgery at the Massachusetts General Hospital he was a research fellow in Neuro-oncology.

Dr. Martuza was on the neurosurgical staff at the MGH from 1986-1991, and associate professor at Harvard Medical School, director of the Neurofibromatosis Clinic and co-director of the Brain Tumor Center. He left MGH in 1991 and was professor and chairman of the Department of Neurosurgery at Georgetown University School of Medicine until 2000.

His clinical interests focus on nervous system tumors of various types, with a particular interest in acoustic neuromas, meningiomas, and the various forms of the neurofibromatoses.

His major research focuses on applications of molecular genetics to neurosurgery. In the 1980s, Dr. Martuza began the first studies of the possibility that viruses could be genetically engineered to selectively replicate within and kill cancer cells while not harming normal tissue. This research subsequently entered clinical trials and has since led to a large and developing field with multiple laboratories worldwide studying oncolytic viruses of various types for cancer therapy.

Dr. Martuza has authored 200 peer-reviewed articles, chapters and reviews. He is a member of the Institute of Medicine of the National Academy of Sciences, a director of the American Board of Neurological Surgery and has been the recipient of the Grass Award from the Society of Neurological Surgeons and the Von Recklinghausen's Award from the National Neurofibromatosis Foundation.

Hunt- Wilson Lecture

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



Evan Y. Snyder, MD, PhD

Evan Y. Snyder, MD, PhD, a developmental and child neurologist, is currently professor and director of the Stem Cell and

Regeneration Program at Burnham Institute for Medical Research in La Jolla, Calif., and the founder and director of the Southern California Stem Cell Consortium. He is also director of the National Institutes of Health (NIH)-sponsored Human Embryonic Stem Cell Research Center.

Dr. Snyder received combined medical and doctorate degrees from the University of Pennsylvania. He was a NIH Medical Scientist Training Program Awardee. His postdoctoral training included chief pediatric resident at Boston Children's Hospital, chief neurology resident at Harvard Medical School, a neonatology fellowship at Boston Children's Hospital, and a research fellowship in the Department of Genetics at

Harvard Medical School. He is board certified in pediatrics, perinatal-neonatal medicine, and neurology.

His research interests are in the areas of embryology, molecular and cellular basis of neural development, tissue engineering, gene therapy, and embryonic stem cell biology. His research is characterized by a multidisciplinary approach to exploring the biology of stem cells and their role throughout life and therapeutic potential.

In addition to his very productive research, he serves on local, national, and international scientific committees, advisory and editorial boards, and as a reviewer for journals and granting agencies. He is a member of many professional organizations and study sections. His extensive publication list includes papers, abstracts, reviews, book chapters, and related educational materials. He holds several patents involving possible therapeutic uses of stem cells.

Dr. Snyder's recognition for research includes awards from the University of Pennsylvania, W. Alton Jones Cell Science Center, American Academy of Neurology, Boston Children's Hospital, Harvard Medical School, Society for Pediatric Research, Child Neurology Society, Brain Tumor Society, American Association of Clinical Chemistry, and American Society for Neural Transplantation and Repair.

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.



John C. Reed, MD, PhD

John C. Reed, MD, PhD, is president and chief executive officer of Burnham Institute for Medical Research, where he has worked

as a scientist and leader for more than 15 years. Dr. Reed is also professor and Donald Bren Presidential Chair at Burnham, with adjunct professor appointments at several universities.

Dr. Reed's scientific accomplishments include authorship of over 700 research publications and more than 50 book chapters. He was recognized as the world's most highly cited scientist for his research publications during the decade 1995-2005 in the broad field of "cell biology" and also in the field of "general biomedicine" by the Institute for Scientific Information.

Dr. Reed is the recipient of numerous awards and honors, and has been awarded in excess of 70 research grants for his work. He is a named inventor for more than 60 patents, the founder of four biotechnology companies, an advisor to numerous biotechnology and pharmaceutical companies, and serves or has served on the boards of directors of several public and private biotechnology companies and life-sciences organizations.

Recipients of Honorary Membership

2007 James A. Ferrendelli, MD
 2007 Darell D. Bigner, MD, PhD
 2007 Albert J. Aguayo, MD
 2005 Armando J. Basso, MD, PhD
 2004 Jacques Brotchi, MD, PhD
 1997 Carl H. Hauber, JD, CAE
 1995 Roy W. Black
 1995 John W. Holter
 1992 Madjid Samii, MD, PhD
 1990 H. Alphons D. Walder, MD
 1990 Andrei P. Romodanov, MD
 1989 M. Gazi Yasargil, MD
 1988 Chung-Cheng Wang, MD
 1988 B. Ramamurthi, MD
 1988 Karl August Bushe, MD
 1987 Bernard Pertuiset, MD
 1987 Emil Pasztor, MD
 1987 Willem Luyendijk, MD
 1987 A.N. Kononov, MD
 1986 Shozo Ishii, MD
 1986 Hajime Handa, MD
 1986 Murray Goldstein, DO
 1986 F. John Gillingham, MD
 1984 Kurt Schurmann, MD
 1984 Lindsay Symon, MD
 1983 Elizabeth C. Crosby, MD
 1975 Gerard Guiot, MD
 1974 Keiji Sano, MD
 1974 Gosta Norlen, MD
 1974 Hugo Krayenbuhl, MD
 1971 Wilder Penfield, MD
 1969 R. Eustace Semmes, MD
 1969 Dorothy Russell, MD

1967 Oscar Hirsch, MD
 1955 Norman M. Dott, MD
 1948 Eduard A. V. Busch, MD
 1944 Howard C. Naffziger, MD
 1940 Alfred W. Adson, MD
 1937 Sir Geoffrey Jefferson, MD
 1936 Ernest Sachs, MD
 1936 Herbert Olivecrona, MD
 1931 Harvey Cushing, MD

AWARD RECIPIENTS

2009 Cushing Medalist



Edward H. Oldfield, MD

Edward H. Oldfield, MD, joined the Department of Neurosurgery at the University of Virginia in 2007, where he

leads a multidisciplinary effort in the treatment of pituitary tumors and contributes to the research program in the Department of Neurosurgery. He holds the Crutchfield Chair in Neurosurgery and is a professor of neurosurgery and internal medicine.

Dr. Oldfield received his medical degree from the University of Kentucky in 1973, followed by a basic surgical residency at Vanderbilt University. He then spent a year as a visiting registrar in neurology and neurosurgery at The National Hospital for Nervous Disease, Queen Square, London, England, before beginning neurosurgical residency at Vanderbilt University, which he completed in 1980.

After a year in private neurosurgical practice in Lexington, Ky., Dr. Oldfield joined the National Institute of Neurological Disorders and Stroke (NINDS) at the National Institutes of Health (NIH) as a senior staff fellow in neurosurgery and completed a 2-year intramural NIH fellowship in cellular immunology of tumors. In 1984 he became chief of the Clinical Neurosurgery Section, Surgical Neurology Branch, NINDS, and from 1986-2007, was the chief of the Surgical Neurology Branch, NINDS, NIH.

Dr. Oldfield served on the editorial boards of *Neurosurgery* (1992-1994), and the *Journal of Neurosurgery* (1994-2002), serving as co-

chairman of the latter from 2001-2002. In 2007, he was elected president of the Society of Neurological Surgeons. He is the author of more than 400 original scientific and clinical contributions to the medical literature and is co-inventor of patents on convection-enhanced drug delivery and genetic therapy.

He is the recipient of numerous awards including the Grass Medal for Meritorious Research in Neurological Science (1995), the Farber Award of the AANS (1999), and the Distinguished Alumnus Award, University of Kentucky Medical Alumni Association (2006).

Past Cushing Medalists

2008 Charles B. Wilson, MD
 2007 Robert G. Grossman, MD
 2006 David G. Kline, MD
 2005 Martin H. Weiss, MD
 2004 John A. Jane, Sr., MD, PhD
 2003 Stewart B. Dunkser, MD
 2002 Edward R. Laws, Jr., MD
 2001 Julian T. Hoff, MD
 2000 Russell H. Patterson, Jr., MD, FACS
 1999 David J. Kelly, Jr., MD
 1998 Albert L. Rhoton, Jr., MD
 1997 Robert G. Ojemann, MD
 1996 Shelley N. Chou, MD, PhD
 1995 Richard DeSaussure, MD
 1994 Byron C. Pevehouse, MD
 1993 Sidney Goldring, MD
 1992 W. Eugene Stern, MD
 1991 William F. Collins, MD
 1990 Robert B. King, MD
 1989 Lester A. Mount, MD
 1988 Charles G. Drake, MD
 1987 William F. Meacham, MD
 1986 Lyle French, MD
 1985 Francis Murphey, MD
 1984 Eben Alexander, Jr., MD
 1983 Guy L. Odom, MD
 1982 W. James Gardner, MD
 1981 Bronson S. Ray, MD
 1980 Paul C. Bucy, MD
 1979 Henry G. Schwartz, MD
 1978 William H. Sweet, MD
 1977 Frank H. Mayfield, MD

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 neurosurgeons within their profession.



The 2009 Distinguished Service Award is given in memory of Samuel J. Hassenbusch, MD, PhD. Mrs. Rhonda Hassenbusch will be presented with this award in her husband's honor.

Past Recipients of the Distinguished Service Award

2008 Peter W. Carmel, MD
 2007 Mary Louise Sanderson
 2006 Lyal Leibrock, MD
 2005 John C. Van Gilder, MD
 2004 John A. Kusske, MD
 2003 Troy M. Tippet, MD
 2002 John A. Jane Sr., MD, PhD
 2001 Donald H. Stewart Jr., MD
 2001 Frank P. Smith, MD
 2000 George Ablin, MD
 2000 Robert H. Wilkins, MD
 1999 W. Ben Blackett, MD, FACS, JD
 1998 Mark J. Kubala, MD
 1997 Ernest W. Mack, MD
 1996 Robert E. Florin, MD
 1995 Charles Edwin Bracket, MD
 1994 William A. Buchheit, MD
 1993 Roy W. Black, Codman & Shurtlett, Vice President

2009 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.



Armando J. Basso, MD, PhD

Armando J. Basso, MD, PhD, was appointed professor in neurosurgery at the University of Buenos Aires in 1986, and is

currently director of the Applied Neurosciences Institute and professor of Neurosurgery at the University of Buenos Aires.

Dr. Basso has been a visionary leader in organized neurosurgery, both regionally and internationally. He is past president of the Argentine Neurosurgical Association, the Latin American Federation of Neurosurgical Societies, the World Federation of Neurosurgical Societies (WFNS), and the World Federation of Skull Base Societies. He is currently president of the WFNS Foundation, and historian and honorary president of the WFNS.

Over the years, Dr. Basso has been an instrumental force in furthering the core educational mission of the WFNS. He has demonstrated unwavering dedication, creating and teaching neurosurgical courses in developing countries around the world. In addition, on behalf of the WFNS, Dr. Basso has worked collaboratively with the World Health Organization to publish worldwide trauma data.

Fluent in Portuguese, Dr. Basso has been an official guest of national congresses and regional meetings in Brazil for many years. His contribution to the teaching and development of the specialty in Brazil has been outstanding and unparalleled.

Dr. Basso was born in Buenos Aires, Argentina, and began his medical studies at the School of Medicine, University of Buenos Aires in 1952. Prior to graduating from medical school in 1958, he traveled to the United States to Elizabeth, N.J. with a fellowship in neuropharmacology.

In 1960, Dr. Basso initiated his neurosurgical training at the Institute of Neurosurgery, University of Buenos Aires, under the guidance of German Dickman, a disciple of

Walter Dandy. Pursuing his interest in transphenoidal surgery, he traveled to Paris in 1965, and under the guidance of Gerard Guiot, actively participated as foreign resident and later as associated investigator in the development of his master's research on hypophyseal and skull base surgery, as well as surgical treatment of dyskinesias.

His more than 160 peer-reviewed publications focus primarily on skull base pathology and surgery.

Past Recipients of the Humanitarian Award

2008 Robert J. Dempsey, MD
 2007 Benjamin C. Warf, MD
 2006 Gene E. Bolles, MD
 2005 Tetsuo Tatsumi, MD, FACS
 2004 Charles L. Branch Sr., MD
 2002 Edgar M. Housepian, MD
 2001 Gary D. Vander Ark, MD
 2000 Merwyn Bagan, MD, MPH
 1999 Thomas B. Flynn, MD
 1998 Lee Finney, MD
 1997 Robert J. White, MD
 1995 Melvin L. Cheatham, MD
 1994 E. Fletcher Eyster, MD
 1993 Manuel Velasco-Suarez, MD
 1992 William H. Mosberg Jr., MD
 1991 George B. Udvarhelyi, MD
 1990 A. Roy Tyrer, Jr., MD
 1989 Hugo V. Rizzoli, MD
 1988 Gaston Acosta-Rua, MD
 1987 Courtland H. Davis Jr., MD

Louise Eisenhardt Lecture



Geraldine Brooks

Geraldine Brooks was a correspondent for *The Wall Street Journal* for 11 years, where her beats included some of the world's most troubled areas,

including Bosnia, Somalia, and the Middle East.

Her fiction debut, *Year of Wonders: A Novel of the Plague* was published in 10 countries and was a 2001 Notable Book of the Year by *The New York Times*, *The Washington Post*, and *The Chicago Tribune*. For her second novel *March*, Ms. Brooks was awarded the 2006 Pulitzer Prize for Fiction. She is also the

author of two acclaimed works of nonfiction, *Nine Parts of Desire: The Hidden World of Islamic Women*, and *Foreign Correspondence: A Pen Pal's Journey from Down Under to All Over*. Her newest novel, *People of the Book*, instantly became a *New York Times* bestseller.

Born and raised in Australia, Ms. Brooks lives with her husband, Tony Horwitz, and their son in Massachusetts. She was a fellow at the Radcliffe Institute for Advanced Studies at Harvard University in fall 2005.

AANS INTERNATIONAL LIFETIME RECOGNITION AWARD



Albino P. Bricolo, MD

Albino P. Bricolo, MD, is professor of Neurosurgery at the University of Verona Medical School in Verona, Italy, a position

he had held since 1986. Prior to that, he was associate professor of Neurotraumatology at the same institution (1983-1986). He served as chairman of the Division of Neurosurgery at University Hospital of Verona for nearly 30 years (1976-2005). He was assistant professor of Surgery (Neurosurgery) at Northwestern Medical School in Chicago, Ill. (1980-1981).

Dr. Bricolo received his medical degree from the University of Modena Medical School in 1959. He received Italian board certification in Nervous and Mental Diseases from the University of Modena in 1963; followed by board certification in Neurosurgery from the University of Genova in 1964.

Dr. Bricolo has held many leadership positions in organized neurosurgery. He is currently vice president of the World Federation of Neurosurgical Societies (WFNS) and a faculty member of the WFNS Education Committee. He served as president of the World Academy of Neurological Surgery (2005-2007), and president of the Italian Society of Neurosurgery (2001-2003).

In addition to the AANS, Dr. Bricolo is a member of numerous professional organizations including the Italian Society of

Neurosurgery, Italian Society of Neurology, European Society for Stereotactic and Functional Neurosurgery, the European Association of Neurosurgical Societies (former vice-president), Academia Euroasiana Neurochirurgica, North American Skull Base Society, European Skull Base Society, Italian Skull Base Society, and American Academy of Neurological Surgery, among others.

Dr. Bricolo has published more than 300 articles and 10 book chapters. He has given over 500 presentations, lectures and seminars at international conferences, congresses, theoretical and practical courses and meetings.

His primary scientific interests are head and spine injuries, comatose and vegetative states, pain, applied neurophysiology, neurotraumatology, skull base surgery, brainstem tumors, and intramedullary spinal cord tumors.

AANS/CSNS SOCIOECONOMIC SESSION

Cone Pevehouse Award



Jay Jagannathan, MD

Jay Jagannathan, MD, is starting his chief residency at the University of Virginia. During his neurosurgical training,

he studied as a clinical fellow at the National Institutes of Health, and as a senior registrar at Auckland Hospital in New Zealand. He received his medical degree from the University of Maryland.

Dr. Jagannathan has completed advanced training in the field of complex spine, having completed a combined neurosurgery and orthopedic surgery spine fellowship under the direction of Christopher I. Shaffrey, MD, and Vincent M. Arlet, MD. He also completed a radiosurgery fellowship under the direction of Jason Sheehan, MD, and Ladislau Steiner, MD, PhD. His interest in socioeconomics was fostered by close mentorship from Edward R. Laws Jr., MD, and Edward H. Oldfield, MD.

Dr. Jagannathan has coauthored more than 75 peer-reviewed papers, editorials and book chapters and has served as a reviewer for six journals. Following completion of his residency, he hopes to begin an academic practice focusing on complex spine and oncology.

Robert Florin Award



Brian L. Hoh, MD

Brian L. Hoh, MD, is the William Merz Professor in Neurological Surgery and Associate Program Director at the University of

Florida. He is also assistant professor of Neurological Surgery with a joint appointment in Radiology.

Dr. Hoh received his undergraduate degree with honors from Stanford University. He received his medical degree from Columbia University. He completed his internship in surgery, residency in neurological surgery, and fellowship in endovascular neurosurgery and interventional neuroradiology at Harvard University, Massachusetts General Hospital. Dr. Hoh specializes in cerebrovascular and endovascular neurosurgery, and has a basic science research laboratory.

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 partners and the public. These one- and two-year grants truly make a difference to the scientists receiving them. Typically, the NREF funds 9-12 grants in the area of biomaterials, brain tumors, cerebrovascular disease, endovascular neurosurgery, pain management, pediatrics, spine and trauma.

2007 Research Fellow



H. Francis Farhadi, MD, PhD
NREF/DePuy Spine
Research Fellow
University of Texas

Sponsor: Michael G. Fehlings, MD, PhD

Project title: *Transcriptional Programming of the Myelin Basic Protein Gene Following Spinal Cord Injury in the Mouse*

Following spinal cord injury (SCI), oligodendrocyte death leads to pronounced myelin sheath degradation which precludes rapid and efficient conduction. Demyelination combined with incomplete remyelination have become increasingly recognized as prominent components of secondary degeneration. To determine whether the chronic hypomyelination seen reflects a failure of surviving or newly-formed adult oligodendrocytes to recapitulate the robust developmental myelinogenesis program, I propose to undertake a comprehensive functional analysis of myelin basic protein gene regulation following experimentally-induced SCI. First, expression phenotypes of various transgenic lines bearing different combinations of regulatory sequences will be analyzed to determine which sequences are sufficient or required for re-expression during the incomplete remyelination process. Then, a number of molecular assays will be employed to identify potential associated transcription factors and upstream interacting proteins. Candidate molecules will in turn be tested for their ability to enhance reporter gene expression

levels in (and remyelination by) transplanted neural stem cells remyelinating the injured spinal cord.

2007 Research Fellow



Andrew Foy, MD
Research Fellow
Mayo School of
Graduate Medical
Education

Sponsor: Cynthia Whetmore, MD

Project title: *Modulation of Bmi1 Expression in Pediatric Medulloblastoma.*

The proper integration of extrinsic and intrinsic signals is critical for the proliferation and differentiation of neuronal precursors during normal cerebellar development and the corruption of these pathways are believed to contribute to the development of medulloblastoma. Bmi1, a member of the polycomb family of chromatin remodeling genes, has recently been shown to be involved in the proliferation of granule cell precursors during normal cerebellar development. Bmi1 is overexpressed in a subset of human medulloblastomas and recent studies suggest a link between Bmi1 and sonic hedgehog (Shh) pathway activation. The goal of the present proposal is to determine whether Bmi1 is necessary for Shh signal transduction and proliferation in normal and tumor-derived stem cells and whether Bmi1 expression is part of the mechanism by which stem cells have increased radioresistance. We will elucidate the mechanism of Bmi1 in transduction of Shh signaling and determine if depletion of Bmi1 will inhibit tumor formation in a murine model of medulloblastoma. The overall goal of this research is to determine potential targets for the development of future therapy for childhood medulloblastoma.

2007 Research Fellow



James Frazier, MD
NREF/ Biomet
Research Fellow Johns
Hopkins University
School of Medicine

Sponsor: Alfredo Quinones-Hinojosa, MD

Project title: *Determination of the Role PDGF and EGF in the Migratory Pattern of Brain Cancer Stem Cells and Comparison of this Migratory Pattern to Normal Fetal and Adult Human Stem Cells in an In Vitro Assay and In Vivo Rodent Model using NOD/SCID/IL2rnull Mice.*

The objective of this research is to study neural stem cells in the human brain and consequently the effect that PDGF and EGF have on the migratory behavior of these stem cells. We will test the hypothesis that human adult stem cells have the ability to migrate and that their manipulation with PDGF and EGF can change them to a more aggressive migratory behavior that resembles that of high-grade tumors and/or the fetal human utilizing both in vitro and in vivo studies.

2007 Research Fellow



Jason L. Gerrard, MD, PhD
Research Fellow
Massachusetts General
Hospital/Harvard

Sponsor: Emad N. Eskandar, MD

Project title: *The role of the Primate Hippocampus and Basal Ganglia Circuits in Visual-Motor Associative Learning.*

The roles of the basal ganglia in movement planning and execution and the hippocampus in associational memory formation are well established. There is increasing evidence that the basal ganglia also play a critical role in associative motor learning. Moreover, there are a number of known connections between structures within the basal ganglia and the hippocampus. Adult Rhesus monkeys will be trained in a spatial-motor learning task. Single neuron recordings will be obtained, simultaneously, from the anterior striatum

and the hippocampus during this task to investigate the role of both structures in the various stages of associational motor learning and memory.

2007 Research Fellow



Dimitris Placantonakis, MD, PhD
NREF/AANS Pinnacle Partner Research Fellow Weill Cornell Medical College

Sponsor: Viviane S. Tabar, MD

Project title: *Generation of Purified Motor Neurons from Human Embryonic Stem Cells for Cell Therapy in Amyotrophic Lateral Sclerosis.*

Amyotrophic Lateral Sclerosis (ALS) is a disorder characterized by motorneuron death. Human embryonic stem (hES) cells can be differentiated to motorneurons in vitro, however such preparations are contaminated by neural precursors that produce tumors in vivo. Our proposal involves a genetic modification of hES cells that will allow motorneuron purification for grafting into ALS mice. We propose to transfect hES cells with a bacterial artificial chromosome (BAC) containing the motorneuron-specific HB9 promoter driving expression of the green fluorescent protein, thereby fluorescently labeling motorneurons. Motorneurons will be purified with fluorescence-activated cell sorting and transplanted into the spinal cord of ALS mice.

2007 Research Fellow



Uzma Samadani, MD, PhD
ACS/AANS-NREF Faculty Career Development Award New York University Medical Center

Sponsor: Howard L. Weiner, MD

Project title: *Sonic Hedgehog Therapy After Lysis of Intracerebral Hemorrhage.*

Intracranial hemorrhages result in high morbidity and mortality through several mechanisms including disruption of

adjacent white matter tracts. Repair of these tracts may be possible through recruitment of neural progenitor cells induced to proliferate, differentiate and function by a myriad of signal transduction molecules. We compare the baseline endogenous subventricular zone stem cell division rate, with the rate seen after induced intracranial hemorrhage and pretreatment with the small molecule sonic hedgehog. The utilization of small molecule therapy to promote restoration of neurologic function after hemorrhage ultimately has implications for the treatment of deficits caused by other mechanisms including stroke and trauma.

2008 Research Fellow



Rahul Jandial, MD
NREF/AANS Pinnacle Partners Research Fellow University of California – San Diego

Sponsor: Alexy Terskikh, PhD

Project title: *Role of MELK in Self-Renewal of Neural Progenitors.*

Stem/precursor cells hold great promise for cell replacement therapies and regenerative medicine, but their clinical success will depend on our ability to control their self-renewal and differentiation. MELK is a gene that may modulate proliferation in neural precursors and is found in the subventricular zone of MELK-EGFP promoter-reporter transgenic mice.

We intend to investigate the molecular mechanisms that regulate neural stem cell proliferation and self-renewal. To do this we will evaluate the proliferative capacity and cell fate of MELK/EGFP-positive cells isolated from our transgenic animals via transplantation assays and determine if these cells from the neonatal pup subventricular zone are proliferating neural precursors in vivo. Subsequently these cells will be evaluated in vitro with siRNA and cDNAs for assessment of proliferative capacity at variable levels of MELK gene product, as well as investigate the involvement of putative MELK targets and their effects on proliferation and self-renewal.

By understanding self-renewal and the role

MELK plays, we would provide avenues for potential modulation of neurogenesis dependent on MELK expression. Further, synthetic agonists of MELK could be used to modulate the amplification of neural progenitors for clinical application.

2008 Research Fellow



Jason Weinstein, MD
NREF/Codman Research Fellow Oregon Health and Science University

Sponsor: Edward Neuwelt, MD

Project title: *Optimization of N-acetylcysteine (NAC) Administration for Neuroprotection in an Experimental Rat CNS Injury Model and Investigations into the Pathophysiology of Posttraumatic Hydrocephalus (PTH).*

Traumatic brain injury (TBI) remains a major source of morbidity and mortality with 1.5 million sustaining TBI each year; of these, 80-90,000 experience long-term disability (CDC 2001). There are currently no effective pharmacological agents used in clinical practice that reduce secondary brain injury. Additionally, hydrocephalus occurs in 20% of these patients and is associated with poor outcome (Marmarou 1996). The mechanism for posttraumatic hydrocephalus formation is incompletely understood, but likely involves fibrosis of the pathways of cerebrospinal fluid (CSF) absorption: cervical lymphatics and arachnoid granulations. Fibrosis following TBI may be due to induction of connective tissue growth factor (CTGF) which is, in turn, regulated by reactive oxygen species (ROS). One of the physiological defense mechanisms against oxidative stress involves removal of free radicals by the tripeptide glutathione (GSH), formed by three amino acids: glutamate, glycine, and cysteine. N-acetylcysteine (NAC), a thiol containing molecule, has both direct anti-oxidant activity and serves as a precursor for GSH biosynthesis. The following experimental design is intended to optimize administration of NAC for neuroprotection in an experimental rat TBI model, provide novel insight into the mechanism and prevention of posttraumatic hydrocephalus, and, if successful, will lead directly to clinical trials of NAC in human TBI.

2008 Research Fellow



Daniel Sciubba, MD
NREF/Kyphon
Research Fellow
Johns Hopkins
University Medical
School

Sponsor: Ziya
Gokaslan, MD

Project title: *Effects of BMP-2 and BMP-7 on Human Breast Cancer Spine Tumors using a Rat Intravertebral Tumor Model.*

Given that breast and prostate cancer account for the majority of spinal metastases, and that BMPs 2 and 7 are currently used in spinal fusion operations, we propose to study the relationship of these growth factors to human tumor cell lines in a previously established rat spine tumor model. Specifically, MDA-231 human breast cancer cells will be implanted into the vertebral body of nude rats. Tumor size in the presence of local and systemically delivered BMPs will be evaluated via radiographs, motor strength testing, and histopathological assessment, and overall survival and onset to paresis will be measured.

2008 Research Fellow



Suzanne Tharin, MD
NREF/Porex Surgical
Research Fellow
Children's and
Brigham and Women's
Hospital, Harvard
Medical School

Sponsor: Jeffrey D. Macklis, MD

Project title: *Cellular and Molecular Controls over Corticospinal Motor Neuron Segmental Specificity of Axon Targeting.*

Corticospinal motor neurons (CSMN) are the brain component of the 2-neuron circuitry (along with spinal motor neurons) controlling the most precise voluntary movement. Understanding their development could contribute to future therapies for spinal cord injury. The goal of my research is to investigate CSMN axon targeting to cervical vs. lumbar spinal cord. In Dr. Jeffrey Macklis' lab, I will purify

immature, cervical- and lumbar- projecting murine CSMN using retrograde labeling and fluorescence activated cell sorting (FACS), and investigate their axon targeting choices in coculture with spinal cord explants and with set of potential control molecules identified in Dr. Macklis' lab.

2008 Young Clinician Investigator Award



John Kuo, MD
Young Clinician
Investigator Awardee
University of
Wisconsin – Madison

Sponsor: Robert J.
Dempsey, MD

Project title: *Identifying Molecules that Regulate the Blood-Brain Barrier using Stem Cells.*

Endothelial cells in the brain form a unique blood-brain barrier (BBB) that prevents entry of many molecules. It was recently shown that the neural stem cells (NSC) induce BBB formation, whereas we hypothesize that peri-vascular GBM stem cells (GBM SC) contribute to observed tumor BBB disruption since they secrete the angiogenic vascular endothelial growth factor (VEGF). This project proposes to identify molecular regulators of endothelial function by analyzing NSC and GBM SC interactions with BBB. Candidate BBB formation molecules will be identified through testing with NSC, and candidate BBB disruption molecules identified via testing with GBM SC in an in vitro stem cell/BBB co-culture system. Differential BBB integrity will be assayed via changes in trans-endothelial resistance (TEER) and molecule markers. Preliminary data show GBM SC-conditioned media significantly reduce TEER and cause BBB disruption. Soluble factors will be identified via cytokine/angiogenesis arrays and mass spectrometry approaches, verified for expression and tested for BBB function with specific inhibitors. Vascular endothelial growth factor (VEGF) will be tested and specifically inhibited with anti-VEGF antibody to determine its contribution to BBB disruption. This paradigm is applicable to testing other candidate BBB regulators. Identified regulatory molecules may potentially restore the BBB in diseases such

as stroke and head trauma, or regulate BBB permeability for optimizing delivery of pharmacologic, gene or stem cell therapies.

2008 Young Clinician Investigator Award



Aaron Dumont, MD
Young Clinician
Investigator Awardee
University of Virginia

Sponsor: Gary K.
Owens, PhD

Project title:

Inflammatory Cytokines and Smooth Muscle Cell Phenotypic Modulation in Cerebrovascular Disease.

Cerebral aneurysms are common in the general population and aneurysm rupture remains a catastrophic event for which outcomes remain poor. Despite this, our understanding of the basic biology of aneurysms is limited. Understanding basic aneurysm biology will be critical to development of future treatments for patients harboring cerebral aneurysms. There is mounting evidence to suggest that inflammatory cytokines may specifically be important in the formation and progression of cerebral aneurysms. The present proposal attempts to elucidate the molecular mechanisms by which cytokines may directly evoke changes in cerebral vascular smooth muscle cells (SMCs) producing an inflammatory phenotype in vitro, and also attempts to determine a potential direct role for inflammatory cytokines and SMC phenotype modulation in the development and progression of cerebral aneurysms in vivo.

2008 Young Clinician Investigator Award



Jonathan Miller, MD
NREF/Biomet
Microfixation Young
Clinician Investigator
Awardee Case Western
Reserve University

Sponsor: Warren
Selman, MD

Project title: *Electrophysiological Alterations Following Minimal Traumatic Brain Injury.*

The goal of this project is to develop a better

understanding of the electrophysiological changes that occur after mild traumatic brain injury (mTBI). We plan to use a closed head injury model in rats to test the hypothesis that the functional deficits after mTBI: (1) are associated with characteristic electrophysiological changes in specific areas of the brain; (2) may be identified using noninvasive methods such as EEG; and (3) may be reversed to some degree by means of high-frequency field stimulation using a stereotactically implanted electrode. This information should assist in the design of novel strategies for diagnosis and treatment.

William P. Van Wagenen Fellowship

The William P. Van Wagenen Fellowship was established by the estate of Mrs. Abigail Van Wagenen, whose husband was one of the founders and the first President of the Harvey Cushing Society, now the AANS. This prestigious Fellowship is awarded annually and provides a \$120,000 stipend, up from \$60,000, for living and travel expenses to a foreign country for (1) one year, in addition to support for family travel, health insurance and the institution or laboratory hosting the Fellow.



Michael C. Park, MD, PhD

A native of Seoul, South Korea, Michael C. Park, MD, PhD, moved to Overland Park, Kansas at age 12. He received his

medical and doctorate degrees from the University of Kansas.

As a recipient of the University of Kansas MD/PhD Scholarship, Dr. Park began investigating the voluntary control of movement by the motor cortex under the direction of Paul D. Cheney, PhD. This research led to his thesis titled, "Functional organization of primary motor cortex during voluntary movement in awake rhesus macaques using stimulus and spike triggered averaging of EMG activity from 24 muscles".

Dr. Park will complete his neurosurgery residency in June 2009, at the Warren Alpert School of Medicine at Brown University and Rhode Island Hospital. Under the direction of Gerhard M. Friehs, MD, and John P. Donoghue, PhD, he was involved in the the

BrainGate project, a brain-machine interface, and its surgical implantation. Under the direction of Georg Norén, MD, PhD, he worked on investigating imaging modality and its effect on the rate of hearing preservation in the treatment of vestibular schwannoma with Gamma Knife radiosurgery. In 2007, he was awarded The Melvyn M. Gelch, MD Award for Advanced Training of Neurosurgical Residents.

As the 2009 Van Wagenen Fellow, Dr. Park will travel to Marseille, France to study with Professor Jean Regis at Assistance Publique L'Hospital d'Adulte de la Timone. This fellowship will enable Dr. Park to investigate theoretical, clinical and developmental aspects of intractable epilepsy. The fellowship will begin July 1, 2009 and will be completed within one year.

Dr. Park expects that the experience and knowledge gained through the Van Wagenen Fellowship will provide invaluable guidance and skills for a future career in academic neurosurgery, with a focus on investigating novel approaches

AANS Medical Student Summer Research Fellowship

The Medical Student Summer Research Fellowship program is supported by the AANS. The goal of the program is to encourage first or second year medical students to work in a neurosurgical lab, mentored by a neurosurgical investigator, in hopes that the medical student will develop an interest in pursuing neurosurgery as their specialty. Fifteen (15) summer fellowships are awarded each year.



Whitney Parker

Whitney Parker is currently a second-year medical student at the University of Pennsylvania. As an undergraduate at Penn, she majored in

Neuroscience and worked with Russell A. Epstein, PhD, using fMRI to investigate cortical areas responsible for enabling navigational decision-making. She won the departmental award for her senior thesis project, and the work was subsequently published in the *Journal of Neuroscience*. Her

follow-up project investigated the importance of viewpoint in place recognition, and was published in the *Journal of Neurophysiology* and presented at the Vision Sciences Society meeting.

As a medical student, Ms. Parker has been working with Peter B. Crino, MD, PhD, and Gordon H. Baltuch, MD, PhD, investigating the pathogenesis of tuberous sclerosis complex (TSC) in the developing brain. She has modeled TSC in vitro and in vivo, knocking down expression of the key protein TSC2 both in mouse neural progenitor cells and in the developing fetal mouse brain, using in utero electroporation. Ms. Parker recently transferred into the MD/PhD program at Penn and plans to continue her work in Dr. Crino's lab for her thesis project. She intends to pursue a career in pediatric neurosurgery with a special focus on seizure disorders.

SECTION AWARD RECIPIENTS

AANS/CNS Section on Pain

William Sweet Award



Mohammed Farid Shamji, MD, PhD

Mohammed Farid Shamji, MD, PhD is a mid-level neurosurgery resident at The Ottawa Hospital, Canada. He completed a combined

Bachelor's/Master's degree in Chemistry at Yale University, followed by medical training at Queen's University. He completed his junior neurosurgical training at The Ottawa Hospital before interrupting residency to complete a doctoral degree in biomedical engineering at Duke University (2005-2008). He has since returned to clinical training in Ottawa at the PGY4 level.

The focus of Dr. Shamji's doctoral training was in developing thermally-responsive drug delivery systems to sustain release and activity of bioactive anticytokine therapeutics upon injection delivery to anatomically defined compartments. He has evaluated such systems for various anti-IL1 and anti-TNF agents, including his own genetically engineered fusion proteins, with

the goal of minimizing systemic drug exposure. A neurosurgical application of this work is the treatment of the inflammatory component of disc-herniation lumbar radiculopathy, with parallel work evaluating the pattern of inflammatory and immune cytokines mediating disc degeneration and herniation in human surgical tissue and gait abnormalities in animal disease models.

Upon completion of his residency training, Dr. Shamji would like to pursue a career as a surgeon-scientist, focusing on the molecular pathophysiology of neuroinflammatory disease.

AANS/CNS Section on Pediatric Neurological Surgery

Kenneth Shulman Award



Toba Niazi, MD

Toba Niazi, MD, is currently a neurosurgical resident at the University of Utah School of Medicine. She and her family fled their native

Afghanistan when she was an infant, living in Germany for four years before settling in Washington, D.C.

In high school, she participated in a Howard Hughes sponsored mentorship program through the National Institutes of Health. This exposure to medical research cultivated an interest in medicine, specifically the neurosciences. In 2000, she graduated from Towson University with a double major in Biology and Chemistry. Prior to starting medical school, she worked in a Department of Defense laboratory performing research on neurotoxins used in chemical warfare. In 2004, Dr. Niazi received her medical degree from the University of Maryland School of Medicine.

During her residency, Dr. Niazi has focused on translational research involving the treatment of medulloblastomas. She hopes to pursue an academic career in pediatric neurosurgery with a concomitant research laboratory devoted to medulloblastoma and atypical teratoid rhabdoid tumors.

Hydrocephalus Association Award



Ellen R. Air, MD, PhD

Ellen Air, MD, PhD, is currently a fifth-year neurosurgical resident at the University of Cincinnati. After receiving her

undergraduate degree from Northwestern University, she matriculated into the MD/PhD program at the University of Cincinnati, College of Medicine, earning her doctorate in 2002, and her medical degree in 2004. Her thesis work focused on the hypothalamic regulation of food intake and body weight and was supported by a Physician Scientist Training Award from the American Diabetes Association.

Dr. Air continues active research in several areas of neurosurgery including new applications for neuromodulatory techniques and the use of advanced imaging techniques for the diagnosis and prognosis of hydrocephalus. These efforts have resulted in 20 peer-reviewed publications, including a first-authored paper in *Nature Medicine*. She was recently recognized by the Ohio State Neurosurgical Society for her presentation on stereotactic biopsy of eloquent brain.

Matson Lecture



John A. Jane Sr., MD, PhD

John A. Jane Sr., MD, PhD, is immediate past chair of the Department of Neurosurgery at the University of Virginia

at Charlottesville. He was chair and professor at UVA from 1969 to 2006. Currently he is professor and director of the Neurosurgical Training Program.

Dr. Jane became a member of the Editorial Board of the *Journal of Neurosurgery* in 1984 and became chair of the Editorial Board in 1990. He is also the editor and founder of *Journal of Neurosurgery: Spine* and *Journal of Neurosurgery: Pediatrics*.

Dr. Jane received his medical degree from the University of Chicago in 1956. He completed his neurosurgical training in 1964 at the University of Illinois Research and Educational Hospital and the Illinois Neuropsychiatric Institute. In 1965; Dr. Jane was senior instructor in neurosurgery at Case Western Reserve University. In 1967 Dr. Jane was awarded a doctoral degree from the University of Chicago, Division of Biological Sciences, Section of Biopsychology.

His clinical interests include cranial and spinal surgery, and pediatric neurosurgery, with a special interest in craniofacial surgery.

He is the past director of the American Board of Neurological Surgery, completing his term in 1996. Dr. Jane was elected vice president of the Society of Neurological Surgeons in 1988 and president of the Society in 1993.

Among his many awards are the Grass Prize and Medal of the Society of Neurological Surgeons for Meritorious Research (1985); Alumni Award for Distinguished Service, University of Chicago (1988); Decade of the Brain Medalist, CNS/AANS (1999); the Decade of the Brain Award, AANS (2000); the Distinguished Service Award, AANS (2002); the NSA Medalist, Neurosurgical Society of America (2002); the Distinguished Service Award, Society of Neurological Surgeons (2003); the Cushing Medalist, AANS (2004); the WFNS Medal of Honor at the XIII World Congress of Neurosurgery Meeting (2005); the Congress of Neurological Surgeons Founder's Laurel Award (2005); and the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Meritorious Service Recognition (2006).

AANS/CNS Section on Neurotrauma and Critical Care

Synthes Resident Spine Award



Martin M. Mortazavi, MD

Martin Mortazavi, MD, is currently a PGY-3 neurosurgical resident at the University of Alabama at Birmingham.

Dr. Mortazavi received his medical degree from the Karolinska Institute, School of Medicine, in Stockholm, Sweden, followed by a mandatory 21-month internship in Sweden and a PGY-1 in general surgery at the University of Florida. Subsequently, Dr. Mortazavi completed five years of orthopedic surgery training with a focus on spine, and received his board certification in Sweden.

Due to his interest in neurosurgery, he pursued a two-year research fellowship with a focus on spinal cord injury in the Neurosurgery Research Laboratory headed by Mark C. Preul, MD, at the Barrow Neurological Institute in Phoenix, Ariz.

Dr. Mortazavi is currently performing his neurosurgery residency at the University of Alabama at Birmingham.

Synthes Resident Craniofacial Award



Daniel C. Lu, MD, PhD

Daniel C. Lu, MD, PhD, is a chief neurosurgery resident at the University of California, San Francisco. He received

his undergraduate degree from Dartmouth College and medical and PhD degrees from the University of California, San Diego.

His clinical and research interests are in the field of neurotrauma with focus on the spine. He will be pursuing a fellowship in minimally invasive spine and perform translational research in traumatic brain injury and spinal cord injury with Kevin T. Foley, MD, at Semmes-Murphey Clinic in Memphis, Tennessee.

AANS/CNS Section on Stereotactic and Functional Neurosurgery

Philip L. Gildenberg Resident Award



Adam P. Smith, MD

Adam P. Smith, MD, is currently in his fourth year of neurosurgical training at Rush University Medical Center where he plans to pursue a career in

functional neurosurgery, including movement disorders and epilepsy. He spent his third year of residency in the research laboratory of Roy A. E. Bakay, MD, where he performed basic science experiments using embryonic and human umbilical cord blood stem cells in a 6-hydroxydopamine model of Parkinson's disease in rats.

Dr. Smith completed his undergraduate studies at the University of Illinois in 2001 and received his medical degree from Rush University Medical College in 2005.

In addition to the AANS, Dr. Smith is a member of the Congress of Neurological Surgeons. He has published numerous papers covering various neurosurgical topics and has presented previous research at AANS meetings.

AANS/CNS Section on Tumors

Preuss Award



Raymund L. Yong, MD

Raymund L. Yong, MD, began his residency training in the Division of Neurosurgery at the University of British

Columbia, Vancouver, where he is currently chief resident. He received his medical degree from the University of Calgary, Alberta in 2002. He became interested in brain tumor research early in his residency after doing a rotation at the B.C. Cancer Agency, and joined the UBC Clinician Investigator Program in 2006 to pursue translational research in malignant glioma therapeutics.

Dr. Yong moved to Houston to work in the

Brain Tumor Center at M. D. Anderson Cancer Center under the mentorship of Frederick F. Lang Jr., MD, director of Clinical Research in the Department of Neurosurgery. Dr. Yong received a Master's of Science degree in cancer biology from the University of Texas at Houston Graduate School of Biomedical Sciences in 2008. He has returned to UBC, where he will complete his residency in 2010, after which he plans to pursue fellowship training in neurosurgical oncology.

BrainLAB Community Neurosurgery Award



Eric S. Nussbaum, MD

Eric S. Nussbaum, MD, is chair of the National Brain Aneurysm Center and co-director of the Midwest Brain Tumor

Program based at St. Joseph's Hospital in the Minneapolis/St. Paul, Minn. The Midwest Brain Tumor Program, an affiliate of the National Brain Aneurysm Center includes the Cyberknife Center at St. Joseph's Hospital, a multidisciplinary orbitocranial-craniofacial service, and a comprehensive skull base surgery clinic.

Dr. Nussbaum's clinical practice focuses exclusively on complex intracranial surgery including the management of aneurysms, vascular malformations, extracranial-intracranial bypass, and skull base tumors.

In addition to his clinical responsibilities, Dr. Nussbaum has authored numerous publications and serves as the editor of *Practical Reviews in Neurosurgery*.

Integra Foundation Award



James Waldron, MD

James Waldron, MD, is currently chief resident at the University of California, San Francisco (UCSF). He received his

undergraduate degree from Rice University in Houston and his medical degree from the University of Texas, Southwestern School of Medicine in Dallas.

During his time at UCSF, he has worked in the Brain Tumor Research Center under the tutelage of Andrew Parsa, MD, PhD, in the field of tumor immunology. He is a past recipient of the Preuss Award and an NIH NRSA F32 fellowship. His current academic interests have broadened to include the treatment of cerebrovascular disease in addition to neuro-oncology. He has received training in open cerebrovascular techniques from Michael Lawton, M.D.

Upon completion of his residency, he plans to pursue an endovascular fellowship at Stanford University and focus his academic efforts on the development of endovascular drug delivery techniques.

Stryker Neuro-Oncology



Andrew B. Foy, MD

Andrew B. Foy, MD, is currently a senior resident in the Department of Neurosurgery at Mayo Clinic in Rochester, Minn., and will

complete his training in 2010. He received his medical degree from Georgetown University School of Medicine where he was inducted into Alpha Omega Alpha. He also won the Stacey L. Rollins award from the Department of Neurosurgery at Georgetown.

Dr. Foy's research efforts have focused on the therapeutic response of normal neural and medulloblastoma-derived stem cells. He was recipient of a Neurosurgery Research and Education Foundation Research Fellowship in 2007.

Leksell Radiosurgery Award



Isaac Yang, MD

Isaac Yang, MD, is a senior resident in the Department of Neurological Surgery at the University of California, San Francisco (UCSF). Dr.

Yang received his medical degree from the University of California, Los Angeles School of Medicine, where he was mentored in the brain tumor lab of Linda Liau, MD, PhD. His

early research on brain tumor therapy and translational research investigating glioma protein expression was awarded with the Dean's Scholar Outstanding Thesis Award and the Lasky Memorial Research Award.

Currently, Dr. Yang is working at UCSF in the brain tumor research lab of Andrew Parsa MD, PhD, expanding his research interests to skull base tumors. His research honors include a National Institutes of Health/ National Research Service Award research grant, the Congress of Neurological Surgeons Dandy Clinical Research Fellowship, and the UCSF Clinical and Translational Scientist Training Research grant. Dr. Yang is dedicated to improving the care and treatment of patients and hopes to contribute to the field of neurosurgery and neuro-oncology in the future.

National Brain Tumor Society Mahaley Award



Jeffrey N. Bruce, MD

Jeffrey N. Bruce, MD, is the Edgar M. Housepian Professor of Neurological Surgery at Columbia University's College of Physicians and

Surgeons, where he serves as residency program director, co-director of the Brain Tumor Center and director of the Bartoli Brain Tumor Research Laboratory. He leads an NIH-funded translational brain tumor research effort with interests in glioma immunology, progenitor cell biology and drug delivery systems. Clinically he specializes in surgical neuro-oncology, with particular interests in skull base, pineal tumors and pituitary tumors. In addition to his laboratory research interests, he is actively involved in organizing experimental clinical protocols for gliomas. He has published more than 150 articles and book chapters and received the Teacher Recognition Award from Columbia in 2000.

He is the current president of the Society of University Neurosurgeons, past president of the New York Society for Neurosurgery and serves on the editorial boards of *Neurosurgery*, *Journal of Neuro-oncology* and *Current Surgery*. Additionally he serves on

the Executive Board of the AANS/CNS Section on Tumors, and the Scientific Advisory Council for the American Brain Tumor Association.

Springer Journal of Neuro-Oncology Award



Tejas Sankar, MD

Tejas Sankar, MD, is currently a sixth-year resident in the neurosurgical training program at the University of Alberta, Edmonton. He will be

beginning a year as chief resident shortly, with completion of his residency slated for 2010.

Dr. Sankar received his medical degree in 2003 from McGill University, Montreal, Quebec. He spent 20 months of his residency as a postdoctoral fellow in the Neurosurgery Research Laboratory at the Barrow Neurological Institute in Phoenix, Ariz. His investigative work there focused on advanced imaging and translational techniques in neurosurgery.

Dr. Sankar's primary clinical interest is in stereotactic and functional neurosurgery, with additional interests in the surgical treatment of epilepsy, and cortical mapping techniques for tumor resection in eloquent brain. He has published several papers and presented widely on neurosurgical applications of MR spectroscopy, volumetric MRI, and mathematical modeling. Through this research, he has established the basis for an academic neurosurgical career in which he plans to use state-of-the-art imaging modalities to further the understanding of neurosurgical illness and treatment.

American Brain Tumor Association Young Investigator Award



Jason Sheehan, MD, PhD

Jason Sheehan, MD, PhD, is assistant professor of Neurological Surgery, Neuroscience, and Radiation Oncology at

the University of Virginia. He serves as the

director of the Lars Leksell Gamma Knife Center and co-director of the University of Virginia-Riverside Radiosurgical Center.

Dr. Sheehan received his Bachelor of Science, Master of Science, medical, and doctorate degrees from the University of Virginia. He performed fellowships at Auckland University and the University of Pittsburgh. His clinical and research interests are in minimally invasive treatment of brain tumors.

In addition to the AANS, Dr. Sheehan is a member of the Congress of Neurological Surgeons, World Federation of Neurological Societies, American Society for Therapeutics Radiology and Oncology, International Stereotactic Radiosurgery Society, Southern Neurosurgical Society, Leksell Gamma Knife Society, American College of Surgeons, Neurosurgical Society of the Virginias, AANS/CNS Section on Tumors, and the American Society of Stereotactic and Functional Neurosurgeons.

Synthes Skull Base Award



Jae-Sung Park, MD

Jae-Sung Park, MD, is currently a clinical fellow in the Department of Neurosurgery at the Cleveland Clinic Foundation. Dr. Park

received his medical degree from Chung-Ang University, Seoul, Korea, where he also completed his neurosurgery residency. Following his residency, he became a clinical instructor at the Samsung Medical Center, Seoul, Korea, with a focus on skull base surgery.

In 2007, to further his training, Dr. Park traveled to the Cleveland Clinic Foundation to pursue a skull base surgery fellowship under the direction of Joung H. Lee, MD. Currently, he is pursuing an additional fellowship at the Center for Neurological Restoration (Cleveland Clinic Foundation) with Ali R. Rezai, MD. He has authored 10 publications to date.

Ronald Bittner Award



Edward Chang, MD

Edward Chang, MD, is currently a senior neurosurgery resident at the University of California, San Francisco (UCSF). He graduated magna cum

laude with a B.A. from Amherst College. He received his medical degree from UCSF in 2004.

Dr. Chang is a recipient of a National Institutes of Health NINDS-sponsored NRSA fellowship that focuses on the functional organization of human cognition using electrocorticography. His scientific and clinical interests address novel neurophysiologic approaches to understand the neural circuitry underlying human behavior as a guide to surgical therapeutic intervention. He plans to pursue a career in functional and epilepsy neurosurgery after completion of his residency in 2010.

Farber Award



Peter B. Dirks, MD, PhD, FRCSC

Peter B. Dirks, MD, PhD, FRCSC, is associate professor in the Department of Neurosurgery at the University of Toronto,

and a staff surgeon at The Hospital for Sick Children. In 1999, he was appointed to the Research Institute Developmental Biology Program and established a research laboratory at the Arthur and Sonia Labatt Brain Tumor Research Centre, The Hospital for Sick Children.

Dr. Dirks received his medical degree from Queen's University Medical School in 1989. In 1997, he received his PhD in Molecular and Cellular Pathology from the University of Toronto, under the supervision of James T. Rutka, MD, PhD. He received his Royal College certification (FRCSC) in neurosurgery in 1998. The same year, he pursued a McLaughlin Fellowship in Pediatric Neurosurgery at Hopital Necker-Enfants Malades, Universite Rene Descartes in Paris, France.

Dr. Dirks is principal investigator for the Stem Cell Network Canada (part of Networks of Centers of Excellence of Canada). He has received a number of awards for his research, including being recognized as one of Canada's top 40 under 40 in 2003; and the Terry Fox Young Investigator Award from the National Cancer Institute of Canada in 2007.

AANS Section on History

Vesalius Award



Ulises Garcia Gonzales, MD

Ulises Garcia Gonzalez, MD, received his medical degree from the University of Guadalajara in 2001.

He spent one year in general surgery at Hospital Civil Fray Antonio Alcalde in Guadalajara.

Dr. Garcia trained in neurosurgery at the National Institute of Neurology and Neurosurgery "Manuel Velasco Suarez" and spent five months under the mentorship of M. Gazi Yasargil, MD, in the Department of Neurosurgery, University of Arkansas for Medical Sciences.

In February 2008, he graduated from his Mexico program and was certified by the Universidad Nacional Autonoma de Mexico. Since July 2008, Dr. Garcia has been a Spetzler Fellow working in the Neurosurgical Research Laboratory at Barrow Neurological Institute, under the direction of Mark Preul, MD, and Robert Spetzler, MD.

Along with neurosurgical neuroanatomical studies, Dr. Garcia maintains an interest in neurosurgical history, including the evolution of technology and the development of neuroanatomical atlases and neuroscientific imagery.

AANS/CNS Section on Peripheral Nerve

David Kline Lecture



Hans-Peter Richter, MD, PhD

Hans-Peter Richter, MD, PhD, is professor and chairman Emeritus of the Department of Neurosurgery at the

University of Ulm, Germany. He held the position of professor and chairman from 1989-2008. He received his medical degree from Frieberg University in 1968. He completed a residency in general surgery at Zentralkrankenhaus Links der Weser“ in Bremen in 1972, followed by a residency in neurology at the University of Freiburg in 1973. He received board certification in neurosurgery from Bayerische Landesaerztekammer in 1978. He completed his PHD at Ulm University in 1980.

Dr. Richter has held numerous leadership positions in neurosurgery, including as president of the German Society of Neurosurgery and Clinical Neurosciences Society. He is a prolific author, with 148 publications, 45 published abstracts, four books, and nearly 500 oral presentations.

For more than three decades, Dr. Richter has been involved in furthering neurosurgery in Africa. He served as Médecin-Chef at the District Hospital Savalou, Dahomey (now Benin), West Africa from 1970-1972. Starting in 1993 and annually, he has been a visiting professor in neurosurgery at the University of Benin Medical School, Cotonou, Benin, West Africa. From January-March 2009, he worked with Doctors without Borders, volunteering his surgical expertise at Hôpital Général de Référence Mweso, North Kivu, Democratic Republic of Congo.

WINS Louise Eisenhardt Award



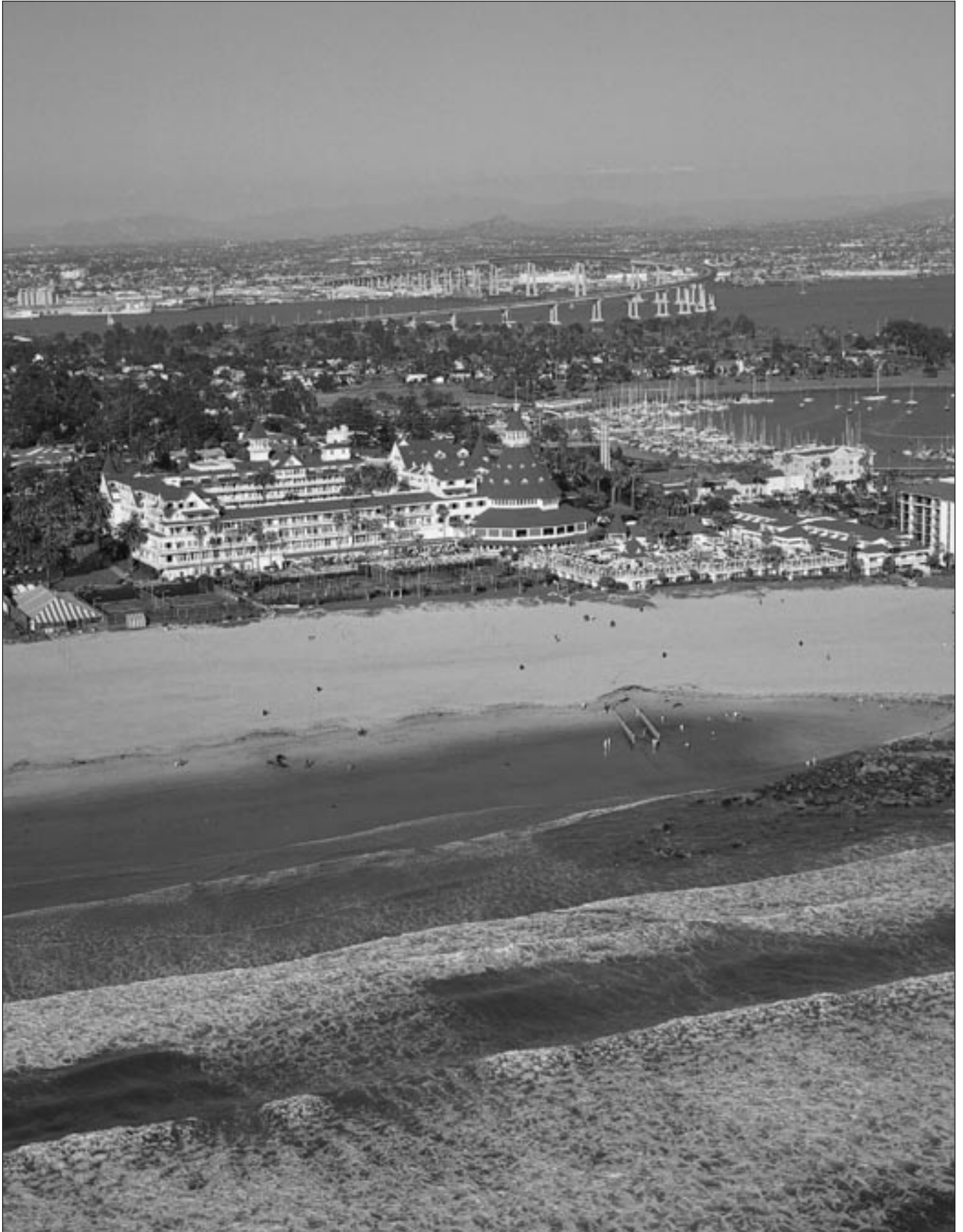
Jennifer Moliterno, MD

Jennifer Moliterno, MD, is currently a fourth-year neurosurgery resident at Yale-New Haven Hospital. She received

her medical degree from the University of Florida. As a medical student, she developed an early interest in neuro-oncology. Based on her work and the interactions with pediatric patients, she authored and illustrated a book for children with brain tumors, entitled, “Parker’s Brain Storm”. This was published and internationally distributed by the Children’s Brain Tumor Foundation in New York and was recently re-edited and formatted into a short movie available on the Internet.

Dr. Moliterno’s research interests during residency have continued to focus on neuro-oncology. In an effort to obtain the skills necessary to successfully conduct clinical outcomes research, she completed the Robert Wood Johnson Clinical Scholars coursework at Yale University. During the past year, she has applied this knowledge through a neuro-oncology clinical research rotation in the Department of Neurological Surgery at Weill-Cornell Medical College, under the auspices of the Director, Susan C. Pannullo, MD. In addition to contributing to the numerous brain tumor clinical trials of the New York Brain Tumor Project, she has worked with John A. Boockvar, MD, and his laboratory on understanding the significance of phosphatases in GBM.





Surgitel AD

OPENING RECEPTION

San Diego Convention Center Terrace
 Sunday, May 3, 6:30–8:30 PM

Tonight you'll enjoy a refreshing slice of the best of everything San Diego has to offer! From the south-of-the-border style of Old Town to the elegance of La Jolla, this event has it all! As you enter this open-air reception on the Terraces of the San Diego Convention Center, you'll immediately feel energized - being surrounded by lime green, tangy orange and vibrant lemon yellow. You'll feel the energy as you listen to a tropical band, stroll by talented artists painting surfboards and much more. With something for everyone, this spectacular event, featuring a sampling of San Diego's best, is sure to leave you satisfied!

Don't miss the opportunity to hear some of our own. NJQ "Neurosurgical Jazz Quintet" featuring our own Donald O. Quest, MD, Fames E. Rose, MD, Theodore H. Schwartz, MD, R. Michael Scott, MD and Phillip R. Weinstein, MD will again entertain us during the party.

One ticket to the Opening Reception is included with each medical attendee and spouse/guest registration. Motor coaches will shuttle between the San Diego Convention Center Hall E and US Grant and Westgate Hotel, between 6:15–8:45 PM. All other official hotels are within walking distance to the convention center.

INTERNATIONAL RECEPTION

Mingei Museum in Balboa Park
 Monday, May 4, 7:30–9:30 PM

All international attendees are invited to attend the AANS International Reception from 7:30 – 9:30 PM on Monday, May 4, 2009 at the Mingei International Museum. Join leaders from AANS and neurosurgical organizations from around the globe.

The AANS International Reception could not be held in a more suitable venue. Mingei is a special word used transculturally for "art of the people." Coined in the early twentieth century by revered scholar, Dr. Soetsu Yanagi, who combined the Japanese words Min (all people), and Gei (art). His keen eye observed

that many useful pre-industrial objects made by unknown craftsmen were of beauty seldom equaled by artists of modern societies. The changing exhibits of the Mingei Museum in Balboa Park demonstrate the expression of creative potential in all people through time and by cultures from six continents. It is a showplace of traditional and contemporary folk art, craft and design. Upon arrival you can explore the museum's array of exhibits while enjoying cocktails, appetizers and the light sounds of our talented Spanish guitar soloist.

Transportation will depart from the San Diego Marriott Hotel & Marina, Marriott Hall Drive beginning at 7:15 PM. Last drop off will be at 9:45 PM.

NEUROSURGICAL TOP GUN COMPETITION

For the fourth consecutive year, the Young Neurosurgeons Committee will present a competition for residents and fellows, located in the exhibit hall. This three day event will include stations such as motion/tremor analysis, computer-simulated ventriculostomy and pedicle screw placement. Contestants will receive scores for their performance and the resident or fellow with the best score will receive the Neurosurgical Top Gun honor and prize. Visit Booth #1155 to participate!

NEUROSURGERYPAC

Federal policymakers have a huge impact on how neurosurgeons practice, when we practice, what we get paid and what patients we see; this influence is only growing stronger. In order to maximize effective advocacy efforts on behalf of neurosurgery, the AANS has yet another tool in its advocacy arsenal: a political action committee called NeurosurgeryPAC. Its mission is to support candidates for federal office who support neurosurgeons. NeurosurgeryPAC does this by making direct campaign contributions to candidates for the US Senate and the US House of Representatives who are supportive of the issues important to neurosurgery. NeurosurgeryPAC is nonpartisan and does not base its decisions on party affiliation, but instead focuses on the voting records and campaign pledges of the candidates. Stop by the NeurosurgeryPAC booth in the

registration area to learn about current campaigns, recent successes and how you can help. AANS members who are citizens of the United States and who pay dues or have voting privileges can make contributions at this booth, or in the AANS Resource Center.

2009 ANNUAL HISTORY SECTION DINNER

Monday, May 4, 2009
 6:00–10:00 PM
 Museum of Man, Balboa Park
 \$150 per person

We are pleased to invite you to attend this year's annual dinner of the American Association of Neurological Surgeons History Section, being held at the Museum of Man, located in Balboa Park. The evening will feature dinner, a special guest speaker, Tori Heflin, Curator of Physical Anthropology as well as complete access to all the exhibits the Museum has to offer. Some of the permanent exhibits that you will have access to include Footsteps Through Time, Four Million Years of Human Evolution, Discover Egypt, Ancient Egypt, Maya: Heart of Sky, Heart of Earth, and Kumeyaay: Native Californians.

During our event at the Museum, there will be a new exhibit called Skull Stories: Trephination and the Art of Medicine. The act and art of trephination has been practiced around the world for thousands of years. The upcoming exhibition at the San Diego Museum of Man will focus on the universality of this practice of skull surgery, the various methods and tools used to perform the surgery, and the reasons why the surgery is carried out. Peruvian skulls from the Museum of Man's premiere collection (the Hrdlička Paleopathology Collection) will be showcased, and people from various cultures around the world who perform trephinations will be highlighted.

This year, we are pleased to offer additional benefits to event registrants, which are certain to make your evening more enjoyable: transportation to and from the San Diego Marriott Hotel & Marina Marriott Hall Drive beginning at 5:30 PM, the Museum of Man and two drink tickets for the premium bar.

Join us for a memorable evening at this historic location!

To register, please visit the 2009 AANS Annual Meeting registration area located in Hall D Lobby.

CELEBRATE THE 25TH ANNIVERSARY OF THE AANS/CNS SECTION ON TUMORS!

Saturday, May 2, 2009

6:30–10:00 PM

Hotel Del Coronado's Crown Room
\$75 per person

The AANS/CNS Section on Tumors invites you to a celebration marking 25 years of

fellowship, education and research designed to improve the care of patients with brain tumors.

Historic Hotel Del Coronado will be the backdrop for this elegant reception, special lecturer, awards presentation and dinner. Hundreds of neurosurgeons from all corners of the globe are expected to attend this event with their spouses.

To register, please go to the AANS Registration area at the San Diego Convention Center.

Transportation from the San Diego Marriott Hotel & Marina, Marriott Hall Drive will depart beginning at 6:15 PM with last return back to the hotel at 10:00 PM.

WOMEN IN NEUROSURGERY GALA BREAKFAST

20th Anniversary Breakfast

Wednesday, May 6, 2009

7:30–9:00 AM

Salon G, Marina Ballroom, San Diego
Marriott Hotel & Marina

Women in Neurosurgery (WINS) will celebrate their 20th anniversary with a Gala Breakfast, featuring a short video of their accomplishments, a book of stories, poems and art by WINS members entitled *What Women Do*, and comments from the Louise Eisenhardt Lecturer, Geraldine Brooks. (By Invitation Only).



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

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 Sunday.

Four practical clinics, eleven breakfast seminars and two afternoon sessions are being offered, which are listed below, as well as the Nurses Luncheon:

PRACTICAL CLINICS

- 020** Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon
- 023** Head Trauma: Current Treatments and Controversies with Hands-On Practical Session in Brain Monitoring and Techniques
- 024** Decision Making and the Spine Patient for Nurses, APRNs and PAs
- 036** Update on Spinal Surgery for the Practicing Neurosurgeon

BREAKFAST SEMINARS

- 109** Management of Vasospasm
- 110** Management of Adult Scoliosis
- 114** Management of Asymptomatic Vascular Lesion
- 123** Pediatric Head Injury
- 203** Cerebral Neuromonitoring
- 207** Coil vs. Clip for Intracranial Aneurysms
- 214** Integrating Mid-Level Practitioners into your Practice
- 220** Neurosurgical Decision Making in the Elderly
- 225** Evaluation of the Child with a CSF Shunt
- 303** Lumbar Spine Fusion
- 323** Management of Acute Spinal Cord Injury

NURSES LUNCHEON

Monday, May 4, 1:00–2:45 PM
Room 33A, San Diego Convention Center

No Fee: Limited Space Available

Moderator:

Ellen Barker, MSN, APN

Aneurysm Surgery

Speaker:

Anil Nanda, MD, FACS

This seminar will discuss the management and treatment of patients with aneurysms while describing the complications and subsequent treatment of post-operative patient complications.

Sponsored in part by Aesculap

Learning Objectives:

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

- Describe the typical presenting signs and symptoms when a patient has an aneurismal hemorrhage
- Discuss the comprehensive medical/surgical and management treatment challenges for the neurosurgical team
- List and discuss pre- and postoperative complications and nursing management using best practice guidelines

Meeting Credit:

Nursing contact hours have been applied for the specified breakfast seminars and practical clinics designed for nurses. Specific hours are subject to approval. An application for approval of nursing contact hours has been submitted to the Illinois Nurses Association Approver Unit.

AANS ASSOCIATE AND ALLIED MEMBERSHIP BENEFITS

Associate and Allied members save money on registration fees not only for the AANS Annual Meeting, but for all programming throughout the year. The AANS is making a concerted effort to involve nurses, nurse practitioners, and physician assistants (PA) in strategic planning to assure that any unique needs are being met. AANS provides leading educational opportunities— both clinically and in practice management. Associate and Allied members have access to the same programming as neurosurgeon members and many of the same benefits, including:

- Free online courses for members
- Member discounts on neurosurgical and practice management publications
- Member discounts on coding, reimbursement and other practice management seminars and resources
- Networking and peer assistance through meetings and online services such as the Online Membership Directory

- Additional training programs and exclusive courses are in the planning stages

ASSOCIATE MEMBER REQUIREMENTS

Nurses who specialize in the care of neurosurgical patients and Physician Assistants (PA) may apply if certified by the National Commission on Certification of Physician Assistants (PA-C).

ALLIED MEMBER REQUIREMENTS

Surgical Technologist may apply if certified by the Liaison Council on Certification for the Surgical Technologist with advanced certification in neurological surgery or office administrators who are not neurological surgeons, but who benefit the practice of neurosurgery by their administrative contributions. Office administrators must be employed by an AANS neurosurgeon member.

Applying for Membership has Never Been Easier! The AANS online application process makes applying for membership quick and easy through MyAANS.org. Visit the AANS Resource Center in the Exhibit Hall for more information, Monday through Wednesday, during exhibit hours. You may also obtain information by contacting the AANS Member Services Department at (847)378-0500 or e-mail info@AANS.org.

500

N&PE

Neurotrauma: Advancements in Critical Care

Monday, May 4, 2:00–5:00 PM
Room 25B, San Diego Convention Center

Fee: \$100 for Doctors.

Free for N&PE

Moderator:

Twyla Lay, NP, MS

Speakers:

Marianne E. Langlois, PA-C; Geoffrey T. Manley, MD, PhD; Karen March, RN, MN; Shirley I. Stiver, MD, PhD

This seminar will explore the physiological basis for critical decision making and management of common neurotrauma ailments including intracranial hypertension, neurovascular injury and spinal trauma.

Learning Objectives:

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

- Discuss patient directed therapies utilizing pathophysiological indicators of cerebral blood flow dynamics
- Discuss vascular complications and interventions for bleeding disorders in acute traumatic brain injury
- Discuss the evidence for acute spinal cord decompression verses medical management and identify current therapeutic modalities

501**N&PE****Management of Ischemic and Hemorrhagic Stroke**

Tuesday, May 5, 2:00–5:00 PM
Room 25B, San Diego Convention Center

Fee: \$100 for Doctors.

Free for N&PE

Moderator:

Adnan H. Siddiqui, MD, PhD

Speaker:

Bernard R. Bendok, MD; Peng Roc Chen, MD; Kai U. Frerichs, MD; Elad I. Levy, MD; Kenneth M. Lieberman, MD; Laura Mason, ANP-C; Erol Veznedaroglu, MD

Description:

This session will allow participants to familiarize themselves with the identification of predisposing factors, comprehensive diagnosis and the medical and endovascular management of ischemic and hemorrhagic stroke.

Learning Objectives:

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

- Explain the demographics of ischemic and hemorrhagic stroke
- Describe the causes and endovascular management of ischemic stroke secondary to cardiac disease, intracranial and extracranial atherosclerosis and dissection
- Demonstrate endovascular diagnosis and management of hemorrhagic stroke resulting from ruptured aneurysms, arteriovenous malformations and fistulae



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

RESIDENT'S NOTE

Neurosurgical residents and fellows in North America receive free membership in the AANS! Visit the AANS Resource Center in the Exhibit Hall to learn more about membership benefits, or visit www.AANS.org/residents/.

INTERNATIONAL RESIDENT/FELLOW

This membership category offers membership to residents or fellows who are enrolled in a verifiable non-North American neurosurgical training program or who are in the five years following completion of residency. Once certification is obtained, the International Resident/Fellow Member may request transfer to International member status with the submission of a copy of their certification certificate. For more information, please visit the AANS Resource Center, Booth #1135 in the Exhibit Hall or the membership area of www.AANS.org.

MARSHALS' PROGRAM

Want to attend practical clinics and breakfast seminars for free? If so, the Marshals' Program may be for you. The Marshals' Subcommittee depends on the volunteer activity of many individuals to ensure the quality and success of the practical clinics and breakfast seminars. All marshals should report to the Marshals' Office at least 30 minutes before their scheduled session. The office is located in room 23A, San Diego Convention Center, and will be open 7:00 AM to 5:00 PM on Saturday, May 2 and Sunday, May 3; and 6:30 to 10:00 AM on Monday, May 4 through Wednesday, May 6.

SESSIONS FOR RESIDENTS AND FELLOWS

Eight exclusive practical clinics and sixteen breakfast seminars are being offered complimentary to residents, fellows and medical students which are listed below:

PRACTICAL CLINICS

- 008** Basics of Spinal Stabilization, Fusion and Instrumentation
- 012** 3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base
- 013** Interventional Neurovascular Disease: Avoidance and Management Complication
- 020** Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon
- 031** Choosing and Developing a Neurosurgical Practice
- 032** 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base
- 033** Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation
- 036** Update on Spinal Surgery for the Practicing Neurosurgeon

BREAKFAST SEMINARS

- 102** Multidisciplinary Management of Cerebral AVMs
- 109** Management of Vasospasm
- 114** Management of Asymptomatic Vascular Lesion
- 115** Neurosurgical Management of Intractable Pain
- 204** Emerging Concepts in Stem Cell Biology and Cell Based Therapies
- 207** Coil vs. Clip for Intracranial Aneurysms
- 216** Evidence Based Medicine in Evaluating Clinical Trials
- 217** Surgical Approaches to the Lateral Skull Base
- 220** Neurosurgical Decision Making in the Elderly
- 222** Beginning Your Academic Career: Answers to Your Questions
- 223** Independent Medical Evaluation and Determination of Impairment in Neurosurgical Practice
- 224** Neuromodulation for Residents
- 225** Evaluation of the Child with a CSF Shunt
- 303** Lumbar Spine Fusion
- 311** Advances in Carotid Disease: Surgery vs. Endovascular Therapy
- 321** Getting the Most Out of Your Residency

NEUROSURGICAL TOP GUN COMPETITION

The Young Neurosurgeons Committee will present a competition for residents and fellows located in the exhibit hall. Please see page 23 for more information.

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R&F

YNS Luncheon

Monday, May 4, 1:00–2:45 PM
Room 29BCD, San Diego Convention Center

No fee

Moderator:

Jonathan A. Friedman, MD

The Art of Balance

Speaker:

Frederick B. Meyer, MD

YOUNG NEUROSURGEONS COMMITTEE MEETING

Monday, May 4, 5:30–7:00 PM
Point Loma Room, San Diego Marriott Hotel & Marina

The AANS Resource Center located in the Exhibit Hall, booth #1135, is the place to go to learn about all that's happening at AANS – and how the AANS is helping neurosurgeons meet the challenges of neurosurgery.

ANNUAL MEETING SPECIAL PROMOTIONS

Place your onsite order of the new online sessions recorded from this year's annual meeting and become eligible to win a complimentary copy of a Neurosurgical Operative Atlas of your choice. Choose from Neuro-Oncology, Spine and Peripheral Nerves, Pediatric Neurosurgery, Functional Neurosurgery or Vascular Neurosurgery (retail value of \$225). For detailed information on these and other publications, visit the AANS Resource Center, booth #1135.

ANNUAL MEETING RECORDED PRESENTATIONS

2009 AANS Annual Meeting: Online! Not able to catch a session you want to attend? It is probably online. Synchronized audio/visual presentations of plenary sessions, scientific sessions, section sessions and the new international symposia will be streamed online and also offered on DVD.

Order at the meeting and save up to \$100.

The final compilation will offer over 170 presentations of educational content covering general neurosurgery, cerebrovascular, neurotrauma, pain, pediatric, spine, stereotactic & functional, tumor, and even neurosurgical history. New in 2009 are the presentations offered in the international symposium, in which faculty from outside the U.S. offer insights about procedures used overseas, particularly those that soon may be approved by the U.S. Food and Drug Administration (FDA).

The online compilation offers sorting and search options by title, presenter, session number or track (plenary session, section session, etc). These options are not available on the DVD-ROM version.

To view a sample course from the 2008 meeting visit the AANS Resource Center (booth 1135) or view online at the AANS Online Marketplace—
<http://marketplace.aans.org/>.

To order, visit the AANS Resource Center in the exhibit hall, or the Annual Meeting Recordings booth in the Hall D Lobby. Refer to the tear-out order form in the back of this book for full pricing information.

Annual Meeting Recorded Presentations Booth

Hall D lobby	
Saturday, May 2	12:00–5:30 PM
Sunday, May 3	8:00 AM–5:30 PM
Monday–Tuesday, May 4–5	9:00 AM–5:45 PM
Wednesday, May 6	9:00 AM–3:00 PM


The complete 2008 compilation is also available for purchase.

The AANS is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The AANS designates this educational activity for a maximum of *10 AMA PRA Category 1 Credits™*. Physicians should only claim credit commensurate with the extent of their participation in the activity. Credit cannot be claimed for both attending a course at the Annual Meeting and participating in the course online or on DVD-ROM.

EDUCATIONAL DVDS

Stop in to view AANS' educational and scientific DVDs available for purchase. Featuring discussions of current neurosurgical treatment options or hands-on lab instruction using cadaver material, neurosurgeons at all levels of clinical practice will find these instructional recordings valuable tools in their continuing education.

PUBLICATIONS

 **Neurosurgical Operative Atlas: Functional Neurosurgery**, second edition By Philip A. Starr, MD, Nicholas M. Barbaro, MD and Paul S. Larson, MD.


Part of the second edition of the classic *Neurosurgical Operative Atlas* series, *Functional Neurosurgery* provides step-by-step guidance on the innovative and established techniques for managing epilepsy, pain, and movement disorders. This atlas covers the current surgical procedures, providing concise descriptions of indications and surgical approaches, as well as

recommendations for how to avoid and manage postoperative complications. The authors describe the underlying physiological principles and state-of-the-art recording techniques that are used for brain localization. This edition addresses topics that are rarely covered in other texts, including motor cortex stimulation for neuropathic pain, novel technical approaches for insertion of deep brain stimulator electrodes, and radiosurgery for movement disorders.

Highlights:

- New chapters on the evolving indications for deep brain stimulation, frameless neuronavigation techniques, and interventional MRI-guided treatments
- More than 650 high-quality images demonstrating anatomy and surgical steps
- Consistent format in all chapters to enhance ease of use

Ideal for neurosurgeons and residents, this operative atlas is a practical surgical guide that will serve as both a reference and a refresher prior to performing a specific procedure.

 **Neurosurgical Operative Atlas: Vascular Neurosurgery**, second edition by R. Loch Macdonald, MD

Vascular Neurosurgery, a new volume in the second edition of the classic *Neurosurgical Operative Atlas* series, is an exquisitely detailed atlas of the surgical approaches to common neurovascular diseases and conditions. Chapters are divided into three main sections including aneurysms and subarachnoid hemorrhage, vascular malformations, and ischemic and other cerebrovascular diseases. In each chapter renowned experts guide the clinician step-by-step through management, providing insights into patient selection, preoperative evaluation, surgical technique, and postoperative management.

Highlights:

- Concise chapters arranged in a consistent format to enhance ease of use
- Coverage of microsurgical techniques, minimally-invasive approaches, and endoscopy
- Practical tips on patient positioning, instruments, and how to avoid and manage potential complications

- More than 300 illustrations, most of them in full-color, demonstrating surgical steps

Vascular Neurosurgery is a practical, “how-to” book for clinicians, fellows, and residents in neurosurgery and vascular surgery. It is an ideal reference to consult in advance of performing a neurovascular procedure or to prepare for the oral board examinations.

NEW *Surgical Management of Low Back Pain*, second edition by Daniel K. Resnick, MD, Regis W. Haid, MD and Jeffrey C. Wang, MD

The second edition of this popular text presents the current diagnostic and therapeutic surgical treatments for low back pain as well as the anatomic and physiologic rationale for their application. Leading experts in the field of spine surgery, neurosurgery, and orthopedics provide evidence-based discussions of the indications, various techniques, and anticipated results of surgical intervention for pain of the lumbar spine. The book presents key clinical information on pathophysiology, imaging modalities, patient selection, biomechanics, minimally invasive approaches, and complication management.

Features of this edition:

- New sections on the evidence-based assessment of emerging biological strategies for the treatment of degenerative disk disease, fusion techniques, and disk arthroplasty
- Coverage of controversial topics such as intradiskal electrothermal therapy and radiofrequency nuclear decompression nucleoplasty

This book provides clinicians with a solid foundation in the range of surgical approaches for the effective treatment of low back pain. Comprehensive and up-to-date, it will enhance the clinical armamentarium of spine surgeons, neurosurgeons, orthopedists, and fellows and residents in these specialties.

EDUCATION AND MEETINGS

Pick up the 2009 calendar of clinical and practice management meetings – topics range from online courses to practice management and coding workshops. Also available is a complete course listing for the new practice management web conferences. These web-based conferences offer the convenience of education without leaving your office. And, for one small fee, you can have as many staff present to take advantage of AANS’ expertise and knowledge.

View the AANS/SNS Neurosurgical Online Learning Sessions offered free to members of the AANS and the Society of Neurological Surgeons. These sessions serve as a valuable learning tool for residents, neurosurgeons, physician assistants and nurses as they directly relate to the core cognitive curriculum of neurosurgery. Archived online for viewing any time, instruction is provided via audio narrated presentations. New sessions are added frequently, and most sessions offer CME credit.

CODING & EMR PROGRAMS FOR MEMBERS

The AANS has partnered with several companies to offer AANS members technological solutions to difficult practice issues—especially coding, billing and medical records. Stop in to pick up literature or talk to representatives about the following member programs:

- **AANSCodingToday.com:** AANS is offering our members preferred access to a comprehensive, easy-to-use online claims coding tool to assist member physicians with the constant changes in claims coding and billing rules that occur every year. In addition to containing the full list of CPT, HCPCS Level II and ICD-9 codes as well as CCI edits, Global information and Relative Value Units (RVU), AANS members who subscribe to **AANSCodingToday.com** will benefit from many new enhancements including navigational improvements, enhanced search capabilities, more local coverage decision results, direct links to modifier definitions, ability to add personal coding notes that are private and secure and many, many more.

AANSCodingToday is a product of Physicians Reimbursement Systems, Inc. (PRS). For more information, visit the AANS Resource Center, or stop in the technology pavilion for a demonstration (see schedule on page 31).

- **NextGen® EMR** is designed to help physician practices improve quality, reduce risk, cut costs and increase revenues. Appropriate for any size medical practice, NextGen® EMR is ideally suited for providers that want to share and manage clinical and administrative patient information through a comprehensive, single-source application.

NEUROSURGERY RESEARCH AND EDUCATION FOUNDATION (NREF)

Advancing Neurosurgery Through Research Since 1981, the NREF has continued to ensure the viability and expansion of the field of neurological surgery, based on fundamental research in the basic sciences and clinical enterprises pertinent to neurosurgery.

Through support from the neurosurgical community, the NREF has stimulated learning by neurosurgeons and enhanced educational opportunities throughout their careers. Over the past 28 years, the Foundation has established two grant programs to fulfill this need. The Research Fellowship provides research training for neurosurgeons who are preparing to dedicate their futures to the research and application of new scientific knowledge. The Research Fellowship is a two-year grant for \$70,000 or a one-year grant of \$40,000. The one year Young Clinician Investigator Award (YCI) is a \$40,000 grant, which provides young faculty members funding for pilot studies, which enables them to develop preliminary data to support applications for more permanent funding.

Have you supported the NREF yet this year? Now you can make your contribution to the Foundation at the AANS Resource Center, Booth #1135. This year, the NREF will have someone available to take donations, provide updated information about programs and answer any questions.

Your support is needed now more than ever to help expand the NREF's mission of funding important, potentially life-saving research projects this year!

For more information on how you can support the NREF or to pick up information on the various grants and fellowships available through the NREF, visit the AANS Resource Center, Exhibit Hall Booth #1135 or visit www.aans.org/research.

YOUNG NEUROSURGEONS' SILENT AUCTION

The Young Neurosurgeons Committee invites you to visit the Eleventh Annual Silent Auction located in the AANS Resource Center, booth #1135.

An expanded array of items promises another successful year. Place your bid on favorite items such as high-tech electronics, exciting weekend vacation packages, sought-after medical items, vintage wines and much more. For a preview of some of this year's Silent Auction items, visit www.aans.org/research.

All proceeds from the Eleventh Annual Silent Auction benefit the Neurosurgery Research and Education Foundation (NREF) and the Research Fellowships and Young Clinician Investigator Awards they support. Once again, the NREF will be utilizing the services of cmarket, an online auction provider. This service offers bidders convenient options for placing their bids be it online from their hotel rooms, from a PDA or at a computer at the auction site.

AANS ONLINE CAREER CENTER

A great resource for employers, recruiters and job seekers alike, the AANS Online Career Center serves as the resource for all neurosurgical professionals.

When a hospital or practice posts an open position on the AANS Online Career Center, it can reach hundreds of busy neurosurgeons and allied professionals who are looking for new career opportunities. The AANS offers a deep pool of qualified candidates including neurosurgeons, nurses physician assistants and support staff, increasing employers chances of finding the right candidate. For job seekers, the AANS Online Career Center is an ideal resource to start your personalized job search. The Online Career Center has undergone extensive enhancements to better equip job seekers with the resources to advance their careers.

- A new site design allows for improved usability, streamlining the registration process and providing a new Resume Builder tool to create professional resumes using existing templates as a guide with the ability to customize.
- Users can keep an updated record of their activity and their accomplishments when they're looking for and replying to multiple opportunities. It can be a challenge to track which jobs they have responded to, so the AANS Online Career Center allows candidates to track online activity and manage resumes or CVs all from one page.
- Candidates can make connections at the conference each year. AANS Online Career Center allows job seekers to indicate their attendance at each year's AANS Annual Meeting so that employers who are attending can connect with them and set up face-to-face meetings.

All features on the AANS Online Career Center are free to job seekers and are easy to use with simple instructions and templates. Visit with an AANS Online Career Center representative to learn how easy it is to search for employment opportunities, or how to advertise open positions.

ALSO AVAILABLE IN THE AANS RESOURCE CENTER

- E-mail stations—free to medical attendees
- CME self-reporting stations to help expedite the self-reporting process
- Opportunity to purchase the latest publication releases from the AANS
- Free courses on imaging and 3D modeling and navigating through MOC while using the ABNS web site. These courses are offered at the Center's Technology Pavilion (see page 30)
- Free demonstrations on AANS partner programs including AANSCodingToday.com and NextGen® EMR in the Resource Center's Technology Pavilion
- Opportunity to pick up a cup of coffee and meet with colleagues in a comfortable lounge area located within the Resource Center, Booth #1135

TECHNOLOGY PAVILION FREE SESSIONS

Located in the AANS Resource Center (Exhibit Hall booth #1135)

All sessions are free to AANS medical attendees and their staff; first-come, first-serve seating. Come early to save your seat – sessions fill up fast!

COURSE DESCRIPTIONS

OSIRIX – State of the Art Imaging and 3D Modeling for Free

Have you been frustrated by the endless variety of imaging programs that accompany your patients’ images? Does your PACS system, if you have one, have difficulty using these discs? OSIRIX can read most of these pesky discs and will keep them in its database for future reference. Let your medical assistant load them into OSIRIX as each patient arrives so that your review of these films will be quick and seamless. What’s more - you can easily create three dimensional models of your patients’ films using this state of the art imaging software which is gaining traction in academic and clinical departments worldwide.

Navigating MOC: Using the ABNS Web Site to Stay on Course

The ABNS Web site recently introduced new features to two important components of Maintenance of Certification requirements: Evidence of Lifelong Learning and Evidence of Performance in Practice. Attend this session to learn where CME credits and self-assessment vehicles are tracked and how to use them. Presenters will also walk participants through where key cases are stored, how to submit key cases and how to run the appropriate reports to stay on track. Representatives from the ABNS will be available to answer questions, and how to use the Web site to fulfill requirements.

AANS PARTNER PRESENTATIONS

AANS CodingToday.com

Keeping up with the constant changes in claims coding and billing rules that occur every year is both costly and time consuming. Now, there is an online database to help. AANSCodingToday.com is a comprehensive, easy-to-use online claims coding tool offered to members at deeply discounted yearly subscriptions through Physician Reimbursement Systems. Attend this 45-minute presentation to learn how AANSCodingToday.com brings together all the claims coding resources and educational material your surgical practice needs. Learn how a simple search by procedure code or name provides:

- Full list of CPT, HCPCS Level II and ICD-9 codes
- Allowable modifiers and other billing rules such as bundling edits
- Medicare payment rates and coverage policies for your specific locality
- Documentation guidelines
- Private insurance rules and practices and much more!

NextGen EMR

NextGen Healthcare will provide an overview on the benefits of electronic medical records and will showcase their award-winning system (NextGen EMR). NextGen® EMR facilitates point-of-care documentation, coding accuracy, and robust reporting in an easy-to-use Windows design. NextGen® EMR includes content specific to neurosurgery, with workflow templates and tools designed uniquely for the specialty. NextGen® EMR also integrates seamlessly (on a single database) with NextGen Healthcare’s practice management system, NextGen® EPM, for a full practice solution. This allows for simplicity in administration, maintenance, communication, reporting, and charge capture. Benefits to using an EMR include transcription savings, record availability, stronger care management, improved patient safety, and coding optimization.

TECHNOLOGY PAVILION SCHEDULE

	MONDAY	TUESDAY	WEDNESDAY
9:00–9:45 AM	OSIRIX – State of the Art Imaging and 3D Modeling for Free	Navigating MOC: Using the ABNS Web Site to Stay on Course	NextGen EMR Systems
<i>Presenter</i>	Jeffrey M. Sorenson, MD	Paul C. McCormick, MD	
1:15–2:00 PM	Navigating MOC: Using the ABNS Web Site to Stay on Course	OSIRIX – State of the Art Imaging and 3D Modeling for Free	AANS CodingToday
<i>Presenter</i>	Charles L. Branch Jr., MD	Jeffrey M. Sorenson, MD	
2:30–3:15 PM	AANS CodingToday	NextGen EMR Systems	

AANS SECTION ON THE HISTORY OF NEUROLOGICAL SURGERY**SUNDAY****Business Meeting**

2:30–4:00 PM

Boardroom, San Diego Marriott Hotel & Marina

MONDAY**History Section Dinner**

6:00–10:00 PM

Museum of Man in Balboa Park
(see page 23 for more information)**TUESDAY****Section Session**

2:45–5:30 PM

Room 30AB, San Diego Convention Center

AANS/CNS CEREBROVASCULAR SECTION**SUNDAY****Executive Committee Meeting**

4:00–6:00 PM

Coronado, San Diego Marriott Hotel & Marina

WEDNESDAY**Section Session**

2:45–5:30 PM

Room 30CD, San Diego Convention Center

Business Meeting

5:31–6:30 PM

Room 30CD, San Diego Convention Center

AANS/CNS SECTION ON NEUROTRAUMA AND CRITICAL CARE**MONDAY****Executive Committee Meeting**

1:00–2:30 PM

Rancho Las Palmas, San Diego Marriott Hotel & Marina

WEDNESDAY**Section Session**

2:45–5:30 PM

Room 30AB, San Diego Convention Center

AANS/CNS SECTION ON PAIN**SUNDAY****Executive Council Meeting**

4:30–6:00 PM

Pacific, San Diego Marriott Hotel & Marina

TUESDAY**Section Session**

2:45–5:30 PM

Room 30CD, San Diego Convention Center

AANS/CNS SECTION ON PEDIATRIC NEUROLOGICAL SURGERY**TUESDAY****Executive Committee Meeting**

1:00–2:45 PM

Balboa, San Diego Marriott Hotel & Marina

Section Session

2:45–5:30 PM

Room 20A, San Diego Convention Center

Business Meeting

5:30–6:00 PM

Room 20A, San Diego Convention Center

Matson Lecture Reception

6:30–8:30 PM

Mission Hills, San Diego Marriott Hotel & Marina

AANS/CNS SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES**MONDAY****Executive Committee Meeting**

1:00–2:00 PM

Columbia Salon 3, San Diego Marriott Hotel & Marina

TUESDAY**Section Session (Peripheral Nerve)**

2:45–5:30 PM

Room 20D, San Diego Convention Center

WEDNESDAY**Section Session (Spine)**

2:45–5:30 PM

Room 20D, San Diego Convention Center

AANS/CNS SECTION ON STEREOTACTIC & FUNCTIONAL NEUROSURGERY**TUESDAY****Board Meeting**

1:00–2:30 PM

Newport Beach Room, San Diego Marriott Hotel & Marina

Resident/Fellow Reception

6:30–8:30 PM

Balboa, San Diego Marriott Hotel & Marina

WEDNESDAY**Section Session**

2:45–5:30 PM

Room 21ABC, San Diego Convention Center

AANS/CNS SECTION ON TUMORS**SATURDAY****25th Anniversary Dinner**

6:00–10:00 PM

Hotel Del Coronado

(see page 24 for more information)

MONDAY**Executive Committee Meeting**

1:00–2:45 PM

Santa Rosa, San Diego Marriott Hotel & Marina

Young Neurosurgeons Reception

5:45–7:30 PM

Mission Hills, San Diego Marriott Hotel & Marina

TUESDAY**Section Session (Tumors I)**

2:45–5:30 PM

Room 20BC, San Diego Convention Center

Business Meeting

3:45–3:50 PM

Room 20BC, San Diego Convention Center

WEDNESDAY**Section Session (Tumors II)**

2:45–5:30 PM

Room 20BC, San Diego Convention Center

WOMEN IN NEUROSURGERY (WINS)**WEDNESDAY****20th Anniversary Breakfast**

7:30–9:00 AM

Salon G, Marina Ballroom, San Diego Marriott Hotel & Marina

(see page 24 for more information)

THURSDAY, APRIL 30, 2009

AANS Finance Committee Meeting

7:00–10:00 AM

Marina Ballroom, Salon D, San Diego Marriott Hotel & Marina

Strategic Planning Committee

10:00–11:00 AM

Marina Ballroom, Salon G, San Diego Marriott Hotel & Marina

CNS Strategic Planning Committee

10:00 AM–5:00 PM

Rancho Las Palmas Room, San Diego Marriott Hotel & Marina

AANS Executive Committee

11:00 AM–5:00 PM

Marina Ballroom, Salon G, San Diego Marriott Hotel & Marina

FRIDAY, MAY 1, 2009

CSNS Info Conference

7:30–8:00 AM

Laguna Room, San Diego Marriott Hotel & Marina

CSNS Communication and Education Meeting

7:30–9:00 AM

Leucadia Room, San Diego Marriott Hotel & Marina

CSNS Young Physician's Committee Meeting

8:00–9:00 AM

Point Loma Room, San Diego Marriott Hotel & Marina

AANS Board of Directors

8:00 AM–5:00 PM

Marina Ballroom, Salon G, San Diego Marriott Hotel & Marina

CSNS Conference Room

8:00 AM–5:30 PM

Business Suite 2, San Diego Marriott Hotel & Marina

CSNS Plenary Session

8:00 AM–5:30 PM

Marina Ballroom, Salons E & F, San Diego Marriott Hotel & Marina

CSNS Fellowship AD Hoc/Leadership Committee

9:00–10:00 AM

Pacific Room, San Diego Marriott Hotel & Marina

CSNS Membership Development

9:00–10:00 AM

Business Suite 1, San Diego Marriott Hotel & Marina

CSNS Website Ad Hoc

9:00–10:00 AM

Newport Beach Room, San Diego Marriott Hotel & Marina

CSNS Medical Legal

10:00–11:45 AM

Warner Center Room, San Diego Marriott Hotel & Marina

CSNS Medical Practices Committee

10:00–11:45 AM

Rancho Las Palmas Room, San Diego Marriott Hotel & Marina

CSNS Neurotrauma

10:00–11:45 AM

Irvine Room, San Diego Marriott Hotel & Marina

CSNS Reimbursement

10:00–11:45 AM

Del Mar Room, San Diego Marriott Hotel & Marina

CSNS Workforce

10:00–11:45 AM

Boardroom, San Diego Marriott Hotel & Marina

CSNS Executive Committee Meeting

11:45 AM–12:30 PM

Coronado Room, San Diego Marriott Hotel & Marina

CSNS Reference Committee

3:00–5:30 PM

Business Suite 3, San Diego Marriott Hotel & Marina

CSNS Resident and Awards Reception

5:30–7:00 PM

Coronado Terrace, San Diego Marriott Hotel & Marina

SATURDAY, MAY 2, 2009

AANS Caucus

7:00–8:30 AM

Coronado Room, San Diego Marriott Hotel & Marina

CNS Caucus

7:00–8:30 AM

Santa Rosa Room, San Diego Marriott Hotel & Marina

CSNS Northeast Quadrant

7:00–8:30 AM

Marina Ballroom, Salon D, San Diego Marriott Hotel & Marina

CSNS Northwest Quadrant

7:00–8:30 AM

Point Loma Room, San Diego Marriott Hotel & Marina

CSNS Southeast Quadrant

7:00–8:30 AM

Rancho Las Palmas Room, San Diego Marriott Hotel & Marina

CSNS Southwest Quadrant

7:00–8:30 AM

Marina Ballroom, Salon G, San Diego Marriott Hotel & Marina

CNS Abstract Selection Committee

8:00 AM–12:00 PM

Balboa Room, San Diego Marriott Hotel & Marina

CSF Inc Board Meeting

8:00 AM–5:00 PM

Leucadia Room, San Diego Marriott Hotel & Marina

CSNS Conference Room

8:00–5:30 PM

Business Suite 2, San Diego Marriott Hotel & Marina

CSNS Plenary Session

8:00 AM–12:30 PM

Marina Ballroom, Salons E & F, San Diego Marriott Hotel & Marina

CSNS Luncheon

12:00–2:00 PM

Seaview Room, San Diego Marriott Hotel & Marina

CSNS Resolution Assignment

12:30–1:00 PM

*Business Suite 3, San Diego Marriott Hotel & Marina***CSNS Medical Legal**

1:00–1:30 PM

*Warner Center Room, San Diego Marriott Hotel & Marina***CSNS Medical Practices Committee**

1:00–1:30 PM

*Rancho Las Palmas Room, San Diego Marriott Hotel & Marina***CSNS Neurotrauma**

1:00–1:30 PM

*Irvine Room, San Diego San Diego Marriott Hotel & Marina***CSNS Reimbursement**

1:00–1:30 PM

*Del Mar Room, San Diego Marriott Hotel & Marina***CSNS Workforce**

1:00–1:30 PM

*Boardroom, San Diego Marriott Hotel & Marina***AANS/CNS Joint Guidelines Committee Evidence-Based Methodology Refresher Course**

2:00–3:00 PM

*Oceanside Room, San Diego Marriott Hotel & Marina***NeuroPoint Alliance**

2:00–4:00 PM

*Laguna Room, San Diego Marriott Hotel & Marina***AANS/CNS Joint Guidelines Committee Meeting**

3:00–6:00 PM

*Rancho Las Palmas Room, San Diego Marriott Hotel & Marina***Neurosurgery PAC Board of Directors**

4:00–5:00PM

*Irvine Room, San Diego Marriott Hotel & Marina***AANS Membership Committee**

4:15–5:30 PM

*Warner Center Room, San Diego Marriott Hotel & Marina***SUNDAY, MAY 3, 2009****AANS Maintenance of Certification Committee Meeting**

6:45–7:45 AM

*Oceanside Room, San Diego Marriott Hotel & Marina***AANS Spouse/Guest Hospitality Suite**

7:30 AM–4:00 PM

*Seaview Room, San Diego Marriott Hotel & Marina***AANS Leadership Orientation**

8:00–9:30 AM

*Marina Ballroom, Salon D, San Diego Marriott Hotel & Marina***CNS Annual Meeting IML Planning**

9:00 AM–6:00 PM

*San Diego Ballroom, Salon A, San Diego Marriott Hotel & Marina***AANS Van Wagenen Fellowship Committee Meeting**

9:30–10:30 AM

*Pacific Room, San Diego Marriott Hotel & Marina***Neurosurgical Summit Meeting**

10:00 AM–12:00 PM

*Point Loma Room, San Diego Marriott Hotel & Marina***CNS Education Committee**

10:00 AM–12:00 PM

*Coronado Room, San Diego Marriott Hotel & Marina***AANS Information Technology Committee**

11:00 AM–12:30 PM

*Laguna Room, San Diego Marriott Hotel & Marina***CNS Nominating Committee**

11:00 AM–2:00 PM

*Business Suite 1, San Diego Marriott Hotel & Marina***CNS Fellowship Committee**

11:30 AM–1:00 PM

*Balboa Room, San Diego Marriott Hotel & Marina***CNS Congress Quarterly Editorial Board**

12:00–1:00 PM

*Warner Center Room, San Diego Marriott Hotel & Marina***CNS I.T. Committee/CNS Web Editorial Board**

12:00–1:00 PM

*Mission Hills Room, San Diego Marriott Hotel & Marina***CNS Publications Committee**

12:00–1:00 PM

*Torrance Room, San Diego Marriott Hotel & Marina***Journal of Neurosurgery Publishing Group Finance Committee**

12:00–1:00 PM

*Marina Ballroom, Salon E, San Diego Marriott Hotel & Marina***Quality Improvement Workgroup Meeting**

12:00–2:00 PM

*Del Mar Room, San Diego Marriott Hotel & Marina***AANS Van Wagenen Past Fellows Luncheon**

12:00–2:00 PM

*Rancho Las Palmas Room, San Diego Marriott Hotel & Marina***AANS Education and Practice Management Committee Meeting**

12:30–2:00 PM

*Oceanside Room, San Diego Marriott Hotel & Marina***AANS Ethics Committee**

12:30–2:00 PM

*Newport Beach Room, San Diego Marriott Hotel & Marina***CNS Sans Editorial Board**

12:30–4:30 PM

Torrey Room 3, San Diego Marriott Hotel & Marina

**Journal of Neurosurgery Publishing
Group Editorial Board Meeting**

1:00–4:00 PM
Marina Ballroom, Salon E, San Diego
Marriott Hotel & Marina

**Women in Neurosurgery Executive
Committee Meeting**

1:00–4:00PM
Encinitas Board Room, San Diego Marriott
Hotel & Marina

**AANS International Outreach
Committee**

1:30–3:00 PM
Los Angeles Room, San Diego Marriott Hotel
& Marina

**ABNS Extra-Mural Subspecialty
Committee Luncheon Seminar**

1:30–3:30 PM
Leucadia Room, San Diego Marriott Hotel &
Marina

AANS Publications Committee Meeting

2:00–3:30 PM
Pacific Room, San Diego Marriott Hotel &
Marina

**AANS Public Relations Committee
Meeting**

2:30–4:00 PM
Laguna Room, San Diego Marriott Hotel &
Marina

**AANS Section on History of Neurological
Surgery**

2:30–4:00 PM
Boardroom, San Diego Marriott Hotel &
Marina

FLANC

3:00–4:00 PM
Oceanside Room, San Diego Marriott Hotel &
Marina

AANS NREF Executive Council Meeting

3:00–4:30 PM
Point Loma Room, San Diego Marriott Hotel
& Marina

CNS International Committee

3:00–5:00 PM
Torrance Room, San Diego Marriott Hotel &
Marina

CNS Research Committee

3:30–5:00 PM
Mission Hills Room, San Diego Marriott Hotel
& Marina

OSNS Spring Meeting

4:00–5:00 PM
Warner Center Room, San Diego Marriott
Hotel & Marina

**AANS/CNS Cerebrovascular Section
Executive Committee Meeting**

4:00–6:00 PM
Coronado Room, San Diego Marriott Hotel &
Marina

AANS Joint Military Committee

4:00–6:00 PM
Balboa Room, San Diego Marriott Hotel &
Marina

**American Academy of Neurological
Surgery**

4:00–6:00 PM
Columbia Room 3, San Diego Marriott Hotel
& Marina

**AANS Neurosurgeon Editorial Board
Meeting**

4:30–6:00 PM
Del Mar Room, San Diego Marriott Hotel &
Marina

**AANS/CNS Section on Pain Executive
Committee Meeting**

4:30–6:00 PM
Pacific Room, San Diego Marriott Hotel &
Marina

ABIC Meeting

5:00–6:00 PM
Rancho Las Palmas Room, San Diego Marriott
Hotel & Marina

**American College of Surgeons Advisory
Council for Neurological Surgery**

5:30–6:30 PM
Leucadia Room, San Diego Marriott Hotel &
Marina

Resident Mentoring Program Reception

5:45–6:30 PM
Newport Beach Room, San Diego Marriott
Hotel & Marina

MONDAY, MAY 4, 2009

**AANS Joint Sponsorship Council
Meeting**

6:45–7:30 AM
Los Angeles Room, San Diego Marriott Hotel
& Marina

AANS Spouse/Guest Hospitality Suite

7:30 AM–4:00PM
Seaview Room, San Diego Marriott Hotel &
Marina

**AANS Member Benefit Development
Committee**

1:00–2:30 PM
Los Angeles Room, San Diego Marriott Hotel
& Marina

**AANS/CNS Section on Disorders of the
Spine & Peripheral Nerves Spine
Executive Committee Meeting**

1:00–2:00 PM
Columbia Room 3, San Diego Marriott Hotel
& Marina

**AANS/CNS Section on Neurotrauma &
Critical Care Executive Committee
Meeting**

1:00–2:30 PM
Rancho Las Palmas Room, San Diego Marriott
Hotel & Marina

**AANS/CNS Section on Tumor Executive
Committee Meeting**

1:00–2:45 PM
Santa Rosa Room, San Diego Marriott Hotel
& Marina

ABNS Advisory Council Luncheon

1:15–2:45 PM
Newport Beach Room, San Diego Marriott
Hotel & Marina

MISTIE-ICES Trial Investigators

5:00–8:00 PM
Columbia Room 1&2, San Diego Marriott
Hotel & Marina

UAB Neurosurgery Reception

5:30–6:30 PM
Boardroom, San Diego Marriott Hotel &
Marina

OSU Neurological Surgery Alumni Reception

5:30–7:00 PM

*Torrey Room 3, San Diego Marriott Hotel & Marina***Penn Neurosurgery Frazier Club Reception**

5:30–7:00 PM

*Torrance Room, San Diego Marriott Hotel & Marina***Young Neurosurgeons Committee**

5:30–7:00 PM

*Point Loma Room, San Diego Marriott Hotel & Marina***Jefferson Neurosurgery Cocktail Reception**

5:30–8:00 PM

*Irvine Room, San Diego Marriott Hotel & Marina***Stanford University Neurosurgery Alumni Reception**

6:00–8:00 PM

*Manchester Rooms 1 & 2, San Diego Marriott Hotel & Marina***Semmes-Murphey/University of Tennessee Reunion**

6:00–8:30 PM

*Leucadia Room, San Diego Marriott Hotel & Marina***American Association of South Asian Neurosurgeons (AASAN) Meeting**

6:30–7:30 PM

*Santa Rosa Room, San Diego Marriott Hotel & Marina***Columbia University Department of Neurosurgery**

6:30–7:30 PM

*Del Mar Room, San Diego Marriott Hotel & Marina***Cleveland Clinic AANS Alumni Reception**

6:30–8:00 PM

*Balboa Room, San Diego Marriott Hotel & Marina***Mayo Clinic Alumni Association**

6:30–8:00 PM

*Newport Beach Room, San Diego Marriott Hotel & Marina***University of Nebraska Medical Center Alumni Program**

6:30–8:00 PM

*Warner Center Room, San Diego Marriott Hotel & Marina***Wayne State University Alumni Reception**

6:30–8:30 PM

*Laguna Room, San Diego Marriott Hotel & Marina***MGH Alumni Reception**

6:30–10:30 PM

*Rancho Las Palmas Room, San Diego Marriott Hotel & Marina***Albany Medical Center Reception for Dr. Popp**

7:00–9:00 PM

*Bayside Pavilion, San Diego Marriott Hotel & Marina***TUESDAY, MAY 5, 2009****AANS Development Committee Meeting**

6:00–7:15 AM

*Newport Beach Room, San Diego Marriott Hotel & Marina***AANS Spouse/Guest Hospitality Suite**

7:30 AM–4:00 PM

*Seaview Room, San Diego Marriott Hotel & Marina***XIV World Congress of Neurological Surgery of the WFNS Planning Committee and Scientific Program**

5:30–6:30 PM

*Point Loma Room, San Diego Marriott Hotel & Marina***University of Minnesota Alumni Reception**

5:30–7:00 PM

*Irvine Room, San Diego Marriott Hotel & Marina***AANS NREF Donor and Grant Reception**

5:30–7:30 PM

*Plaza Terrace, San Diego Convention Center***OmniGuide: Precision in Neurological Microsurgery**

6:30–10:00 PM

*Marriott Hall, Salon 2, San Diego Marriott Hotel & Marina***Medtronic DLIF Training Course**

6:30–10:30 PM

*Outdoors, end of Exhibit Hall H, San Diego Convention Center***Yale University School of Medicine Alumni Dinner**

7:00–10:00 PM

*Oceanside Room, San Diego Marriott Hotel & Marina***WEDNESDAY, MAY 6, 2009****WINS 20th Anniversary Breakfast**

7:30–9:00 AM

*Marina Ballroom, Salon G, San Diego Marriott Hotel & Marina***AANS Hospitality Suite**

7:30 AM–4:00 PM

*Seaview Room, San Diego Marriott Hotel & Marina***2009/2010 Annual Meeting Committee/Scientific Program Committee**

2:00–3:30 PM

*Boardroom, San Diego Marriott Hotel & Marina***Temple University School of Medicine Alumni Reception**

6:30–8:30 PM

Oceanside Room, San Diego Marriott Hotel & Marina

The AANS wishes to thank the following companies for their year-long support of the Annual Meeting.

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As a way for corporate partners and neurosurgical organizations to partner with the AANS outside of traditional support, the AANS established the Pinnacle Partners in Neurosurgery corporate giving program in 2006. The program offers many opportunities for collaborations with the AANS on

educational offerings for residents as well as secures additional annual recognition and benefits, access to the thought-leaders in neurosurgery and its sub-specialties and involvement with furthering neurosurgical research through the Neurosurgery Research and Education Foundation (NREF). The Pinnacle Partners program continues to strengthen ties between corporate partners and the field of neurosurgery.

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For more information about these companies or the AANS Pinnacle Partners program, visit www.aans.org/corporate or contact the Development department at (847) 378-0500.

The Exhibitor Lounge is located in Booth #1053 (next to the Neurosurgical Top Gun Booth)

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San Diego, CA 92121
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Visit the AANS/CNS Section booth for section news, membership application information and information on upcoming meetings.

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www.cdi.com
Booth #1138

NeuroNet® provides neurophysiologic monitoring and diagnostics capabilities with on-line resource management capabilities. NeuroNet permits multi-modality (EMG, EEG, and/or EP) monitoring of multiple cases, simultaneously, in realtime. Data can be transferred over the network to and from any or all workstations, PCs, laptops, or hand-carried devices.

Congress of Neurological Surgeons

Suite 190
10 N. Martingale Road
Schaumburg, IL 60173
(847)240-2500
www.neurosurgeon.org
Booth #1605

The Congress of Neurological Surgeons is a world leader in education and innovation, providing members with premier educational programs and promoting innovative research critical to the advancement of neurosurgery. Visit booth # 1605 to learn about the latest CNS educational resources like SANS: Pediatrics, SANS: Spine, and our new Webinars.

Cosman Medical

76 Cambridge Street
Burlington, MA 01803
(781)272-6561
www.cosmanmedical.com
Booth #2719

Cosman Medical designs radiofrequency generators and electrodes for trigeminal neuralgia, DREZ, cordotomy, spinal pain and functional stereotaxy. With 40 years experience, Cosman provides technologically advanced and cost-effective solutions. The four-output G4 graphics generator and RFG-1A generator are major advances in RF capability—setting new standards for functionality and reliability.

Covidien

101 A First Avenue
Waltham, MA 02451
(781)693-2300
www.durasealinfo.com
Booth #1807

Covidien, formerly Tyco Healthcare, is a global \$10 billion manufacturer of leading medical devices and supplies, imaging products and pharmaceuticals. The company employs more than 43,000 people worldwide and is dedicated to working with medical professionals to improve patient outcomes. Its portfolio of leading brands includes: the DuraSeal™ Dural Sealant System, the DuraSeal Xact™ Sealant System, Autosuture, Kendall, Mallinckrodt, Nellcor, Puritan Bennett, Syneture and Valleylab.

Custom Spine

Suite 201
1140 Parsippany Blvd.
Parsippany, NJ 07054
(973)808-0019
www.customspine.com
Booth #1322

Custom Spine, with 5 patents issued and 40

patents pending, develops innovative medical solutions to treat spinal conditions. Products include ISSYS LP, a complete lumbar system with mono- and polyaxial screws, staples, and cross connectors, as well as PATHWAY interbody fusion devices.

Cyberonics

100 Cyberonics Blvd.
Houston, TX 77058
(281)228-7293
www.cyberonics.com
Booth #1537

Cyberonics, Inc. designs, develops and markets the VNS Therapy™ (Vagus Nerve Stimulation) System, an implantable medical device approved for the treatment of refractory epilepsy since 1997 and of chronic or recurrent treatment-resistant depression since 2005. To date, more than 50,000 patients worldwide have received VNS Therapy for either epilepsy or depression.

DePuy Spine, a Johnson & Johnson company*

325 Paramount Drive
Raynham, MA 02767
(800)451-2006
www.depuyspine.com
Booth #2612

For over 20 years, DePuy Spine, a Johnson & Johnson company, has partnered with leading clinicians, researchers and thought leaders to improve patient care. Today, we remain a leader in the worldwide spine market with an impressive product portfolio, industry-leading education programs, and clinical research to support our work.

Designs For Vision Inc.

760 Koehler Avenue
Ronkonkoma, NY 11779
(800)345-4009
www.designsforvision.com
Booth #2729

Just See It™ with Designs for Vision's lightweight custom-made Surgical Telescopes – now available with Nike® frames. These Telescopes improve visual acuity and reduce back and neck pain. See It Even Better™ with the L.E.D. Daylite™ or Twin Beam™ L.E.D. providing the brightest and safest un-tethered illumination.

DFine Inc.

3047 Orchard Parkway
San Jose, CA 95134
(408)321-9999
www.dfineinc.com
Booth #1206

DFine, Inc. is a medical device company providing physicians new therapy for managing spinal fractures. DFine's StabiliT Vertebral Augmentation System creates a void and delivers ultra-high viscosity StabiliT ER2 (Energy Responsive)2 Bone Cement to the vertebra, providing pain relief through fracture stabilization and may yield height elevation of collapsed vertebrae.

DJO Incorporated

1430 Decision St.
Vista, CA 92081
(760)727-1280
www.djoglobal.com
Booth #1603

Eagle Surgical Products, LLC

615 Eagle
Austin, TX 78734
(512)261-3104
www.eaglesurgicalproducts.com
Booth #622

Electro Lube: Easy to use electrocautery coating. Reduces charring of cautery tip. Reduces tissue sticking to cautery tip. Facilitates cutting and coagulation and helps protect cautery probes from wear. Saves time and improves quality of electrocautery performance.

Eisai Inc.

Suite 100
5775 West Old Shakopee Road
Bloomington, MN 55437-3174
(952)346-4700
www.eisai.com
Booth #1634

Eisai Inc. is a U.S. pharmaceutical subsidiary of Eisai Co., Ltd., a research-based human health care (hhc) company that discovers, develops and markets products throughout the world. Eisai focuses its efforts in three therapeutic areas: neurology, gastrointestinal disorders and oncology/critical care.

Electrical Geodesics, Inc. (EGI)

1600 Millrace Drive; Suite 307
Eugene, OR 97403-1995
(541)687-7962
www.egi.com
Booth #523

Electrical Geodesics, Inc. (EGI) offers complete EEG systems from 32 channel routine digital video EEG systems to 256 channel epilepsy monitoring dEEG systems. EGI provides whole-head, dEEG that is now practical, cost-effective, and reliable. Every component is designed to maximize patient comfort and satisfaction, while enhancing clinical performance and productivity.

Elekta

4775 Peachtree Industrial Blvd.
Norcross, GA 30092
(770)670-2409
www.elekta.com
Booth #2635

Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders. The company develops sophisticated state of the art tools and treatment planning systems for radiation therapy and radiosurgery, as well as workflow enhancing software systems across the spectrum of cancer care.

Elliquence, formerly Ellman Innovations

3333 Royal Ave.
Oceanside, NY 11572
(516)277-9000
www.elliquence.com
Booth #1535

Elliquence, LLC; formerly Ellman Innovations manufactures patented Radiowave 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.

Endure Medical, Inc.

1455 Ventura Drive
Cumming, GA 30040
(800)736-3873
www.enduremed.com
Booth #1107

ERBE USA, Inc.

2225 Northwest Parkway
Marietta, GA 30067
(770)955-4400
www.erbe-usa.com
Booth #1706

ERBE with over 160 years developing innovative technologies for surgery, introduces the ERBEJET® 2. A unique water jet dissector for the non-thermal, ultra-precise separation and aspiration of soft tissue in the brain that preserves blood vessels even at low pressures and provides accurate dissection with minimal trauma to surrounding tissue.

Exactech Inc.

2320 N.W. 66th Ct.
Gainesville, FL 32653
(352) 377-1140
www.exac.com
Booth #1405

Based in Gainesville, FL., Exactech develops and markets orthopaedic implant devices, related surgical instruments and biologic materials and services to hospitals and physicians. Exactech's orthopaedic products are used in the restoration of bones and joints that have deteriorated as a result of injury or diseases such as arthritis.

Fehling Surgical Instruments, Inc.

509 Broadstone Lane
Acworth, GA 30101-3502
(800)334-5464
www.fehlingsurgical.com
Booth #1041

Fehling Surgical Instruments provides innovative surgical Instrument designs using state-of-the-art materials combined with enhanced technology manufacturing techniques. Results are products like the "FEHLING CERAMO SURGICAL INSTRUMENT LINE". See AND feel the black ceramic instruments, new cranial / spinal retractor designs and implants.

GE Healthcare

3200 N. Grandview Blvd
Waukesha, WI 53188-1678
(262)521-6547
www.gehealthcare.com
Booth #535

GE Healthcare is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care "Early Health".

Globus Medical*

Valley Forge Business Center
2560 General Armistead Ave.
Audubon, PA 19403-5214
(610)415-9000
www.globusmedical.com
Booth #1734

Globus Medical is the largest privately held spinal implant manufacturer in the world with a single-minded focus on advancing spinal surgery. Globus has a full portfolio of spinal fusion products, burgeoning initiatives in biomaterials development and minimally invasive approaches, and is a leader in motion sparing technology.

Gore & Associates

1505 N. Fourth St.
Flagstaff, AZ 86004
(800)437-8181
www.goremedical.com
Booth #1640

The Gore Medical Products Division has provided creative therapeutic solutions to complex medical problems for three decades. During that time, more than 25 million innovative Gore Medical Devices have been implanted, saving and improving the quality of lives worldwide. The extensive Gore Medical family of products includes vascular grafts, endovascular and interventional devices, surgical meshes for hernia repair and sutures for use in vascular, cardiac and general surgery. For more information, please visit: www.goremedical.com.

gSource, LLC

19 Bland Street
Emerson, NJ 07630
(201)599-2277
www.gSource.us
Booth #2133

gSource-the Orthopedic reSource for Surgical Instruments is committed to putting the finest instruments into the hands of surgeons and their teams. From custom-made to standard patterns, we can be relied upon to provide superior instrumentation for spinal and orthopedic procedures in a time-critical fashion.

Hydrocephalus Association

Suite 705
870 Market Street
San Francisco, CA 94102
(415)732-7040
www.hydroassoc.org
Booth #2137

Celebrating 25 years of support, education and advocacy for patients, families and medical professionals dealing with hydrocephalus. Stop by and hear about our exciting new research initiative!

HydroCision, Inc.

Suite 28
267 Boston Rd.
North Billerica, MA 01862-2310
(978)474-9300
www.hydrocision.com
Booth #1324

HydroCision's (www.hydrocision.com) SpineJet® HydroSurgery System is designed for Fusion and Discectomy procedures. The SpineJet XL has been proven to optimize disc preparation in open and minimally invasive interbody fusion procedures. The SpineJet 3.8 Micro Discectomy system is designed to minimize the approach-related morbidity of the traditional microdiscectomy and increase the operational efficiencies for hospital operating rooms.

Ikegami Electronics (USA), Inc

37 Brook Avenue
Maywood, NJ 07607
(201) 368-9171
www.ikegami.com
Booth#935

Impulse Monitoring

Suite 250
10420 Little Patuxent Pkwy.
Columbia, MD 21044
(410) 740-2370
www.impulsemmonitoring.com
Booth #1723

Impulse Monitoring, Inc. (IMI) provides intraoperative neuromonitoring (IONM) services for spinal, nerve and brain-related surgeries. IONM allows early detection of neurological compromise and identification of functional neural structures during surgery. The scope of IMI's service includes neurophysiologists who provide monitoring in the operating room, supported by real-time, remote physician monitoring.

IMRIS

100-1370 Sony Place
Winnipeg MB, R3T-1N5
Canada
(204)480 7070
www.imris.com
Booth #2044

Imris is a global leader in advanced surgical imaging and is the only solution of its kind in the world. Our product, IMRISneuro offers surgeons the highest degree of integration options, including our patented technology enabling the 1.5T MR to move to the patient.

Innovasis

614 East 3900 South
Salt Lake City, UT 84107
(801)261-2242
www.innovasis.com
Booth #2441

Innovasis is a rapidly growing company engaged in the research, development, manufacturing, and marketing of spinal implant devices and related products. Innovasis offers a spinal product line with implants and instruments that address the major pathologies and focus areas of traditional spinal surgery. Innovasis is fully committed to providing surgeons and distributors with training, support and excellent customer service, thus ensuring the establishment of a strong and long term strategic partnership.

Integra LifeSciences*

311 Enterprise Drive
Plainsboro, NJ 08536
(609)275-0500
www.integra-ls.com
Booth #1901

Integra™ sells the Camino®, Licox® and Ventrix® lines of intracranial pressure monitoring systems. Also, Integra™ sells Integra Hydrocephalus Management products, the DuraGen™ Dural Graft Matrix, the NeuraGen™ Nerve Guide, the Integra Mozaik™ Osteoconductive Scaffold, the Selector® and Cusa Excel™ Ultrasonic Aspirator, Mayfield® Surgical Devices, Integra Systems CSF Drainage and Cranial Access and Ruggles™ instruments for neurosurgery.

Invivo Corporation

12501 Research Pkwy.
Orlando, FL 32826
(407) 275-3220
www.invivocorp.com
Booth #1034

Invivo is the pioneer in innovative high performance RF coils and Advanced Clinical MRI Solutions, including advanced visualization systems for Neuro MRI and fMRI applications. System solutions streamline MR image viewing, provide automated analysis processing, simplified review, and interventional planning tools for rapid, repeatable results and improved diagnostic confidence.

Journal of Neurosurgery

Suite 450
1224 Jefferson Park Ave.
Charlottesville, VA 22903
(434)924-5503
www.thejns-net.org
Booth #1135

For over 50 years the Journal of Neurosurgery, the flagship journal of the JNSPG, has been recognized by neurosurgeons and related medical specialists the world over for its authoritative and state-of-the-art content. In the last several years, the JNS also began publishing JNS: Pediatrics, as well as JNS: Spine and the all-electronic publication, Neurosurgical Focus. Each title is issued monthly under the aegis of the AANS (American Association of Neurosurgeons and the American Association of Neurological Surgeons).

K2M Inc.

Suite F1
751 Miller Drive, SE
Leesburg, VA 20175
(703)777-3155
www.k2m.com
Booth #807

K2M, Inc. is an innovative spinal device company that develops simplified solutions for the treatment of complex spinal pathologies and procedures. K2M's complete portfolio of next generation products includes: spinal stabilization systems, minimally invasive systems, and other advancing technologies for the treatment of deformity, degenerative, trauma, and tumor spinal patients.

Kadlec Medical Center

888 Swift Blvd.
Richland, WA 99352
(800)765-1140
www.kadlecmed.org
Booth #1109

Karger Publishers

26 W. Avon Road
Unionville, CT 06085
(800) 828-5479
www.karger.com
Booth #1703

Publisher of medical/scientific books and journals, including *Atlas of Cytoarchitectonics of the Adult Human Cerebral Cortex*; the book series *Radiosurgery and Progress in Neurological Surgery*; and the journals *Cerebrovascular Diseases*, *Dementia and Geriatric Cognitive Disorders*, *European Neurology*, *Neurodegenerative Diseases*, *Pediatric Neurosurgery and Stereotactic and Functional Neurosurgery*.

Karl Storz Endoscopy-America, Inc.

600 Corporate Pointe
Culver City, CA 90230-7600
(310)338-8100
www.karlstorz.com
Booth #1801

KARL STORZ Endoscopy-America, Inc., is an international leader in endoscopy equipment and instrumentation. The company designs, engineers, manufactures and markets products that emphasize visionary design, precision craftsmanship

and clinical effectiveness. KARL STORZ sets the industry standard for complete and specialized solutions for minimal invasive neurosurgery.

Keeler Instruments Inc.

456 Parkway
Broomall, PA 19008-4201
(610)353-4350
www.keelerusa.com
Booth #1500

Keeler will be showing our new 3x High definition Wide Field SL Loupes along with our popular 2.5x type. Both loupes are available on the new comfortable and well balanced sport frame in various colors. A new bright, lightweight, LED Spotlight will be shown that can fit any type frame.

Kinamed, Inc.

820 Flynn Rd.
Camarillo, CA 93012-8701
(800)827-5775
www.kinamed.com
Booth #835

Kinamed manufactures and sells the NeuroPro® Rigid Fixation System designed specifically for neurosurgical cranial and skull base 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 and the Quick Tap single-use battery driver.

Kirwan Surgical Products, Inc.

180 Enterprise Drive
Marshfield, MA 02050-0427
(781)834-9500
www.kirwans.com
Booth #2523

Kirwan Surgical Products, Inc. manufactures high-quality electro-surgical instruments and accessories for use in neurosurgical procedures. We offer a full range of reusable and disposable non-stick bipolar forceps and reusable and disposable cables. New to Kirwan's product line is bipolar equipment for small incision surgery.

KLS-Martin, LP

P.O. Box 50249
Jacksonville, FL 32250-0249
(904)641-7746

www.klsmartin.com
Booth #2435

KLS Martin is a company dedicated to providing innovative medical devices and power systems for craniomaxillofacial surgery. The company's rich history began with surgical instrument production in Tuttlingen, Germany in 1896 and continued with miniplate production in 1975. KLS Martin has advanced the capabilities of distraction osteogenesis, and revolutionized resorbable fixation with the SonicWeld Rx system.

Koros USA, Inc.

610 Flinn Avenue
Moorpark, CA 93021-2008
(805)529-0825
www.korosusa.com
Booth #1401

Koros USA manufactures and distributes state of the art technology including the Super Slide, Blad Belt, ALIP Polaris Retractors, OsteoPunch, Ejector Punch Plus and anterior rounders. These devices provide ergonomically controlled movement and stability. Koros specializes in cervical, spine, micro discectomy, lumbar and anterior fusion instrumentation.

LANX, Inc

Suite 890
390 Interlocken Crescent
Broomfield, CO 80021
(303)443-7500
www.lanx.com
Booth #1940

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 patient outcomes.

Leica Microsystems

2345 Waukegan Road
Bannockburn, IL 60015
(800)526-0355
www.surgicalscopes.com
Booth #2034

Leica Microsystems displays its complete line of neurosurgery microscopes including the new M720 OH5 with Horizontal Optics. Another innovation is the HDMD high

definition digital recording system which is the only system that records in high def. And the world's only head mounted microscope, the HM500.

Life Instrument Corporation

91 French Avenue
Braintree, MA 02184
(781)849-0109
www.lifeinstruments.com
Booth #2713

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

Suite 1535
2401 W. Hassell Road
Hoffman Estates, IL 60169
(847)884-6117
www.lifespine.com
Booth #1913

Life Spine is a full line spine company focused on providing innovative solutions to address spinal pathology from the occiput to the sacrum. A comprehensive product portfolio, focused on fusion devices, minimally invasive spine surgery, and motion preservation, has been created by Life Spine via strong strategic partnerships with surgeons.

LifeLink Tissue Bank

8170 Woodland Center Blvd.
Tampa, FL 33614
(813)886-8111
www.lifelinkfound.org
Booth #2420

LifeLink Tissue Bank, the largest not-for-profit tissue bank in the Southeast, is an industry leader in providing allografts recovered and processed with the most stringent safety standards. LifeLink offers a complete range of traditional grafts, sports medicine grafts and milled LifeGraft® spinal allografts—all with an emphasis on cost.

LocumTenens.com

2655 Northwinds Pkwy.
Alpharetta, GA 30009
www.LocumTenens.com
Booth #1551

Market Access Partners

3236 Meadowview Road
Evergreen, CO 80439
(303)526-1900
www.marketaccesspartners.com
Booth #2013

Market Access Partners provides market research consulting to the medical device and pharmaceutical industries. We use innovative qualitative and quantitative methodologies to research opinions of physicians, nurses and patients. We offer a management-oriented approach to product development and marketing.

Medical Doctor Associates

145 Technology Parkway NW
Norcross, GA 30092
(800)780-3500
www.mdainc.com
Booth #1646

Medical Doctor Associates is the quality leader in healthcare staffing. MDA is the only multi-specialty locum tenens organization that offers Occurrence Form Insurance to doctors who contract with us. MDA pays competitive fees every two weeks and now offers direct deposit. MDA is 100% employee-owned. Your satisfaction is our future.

Medical Education & Research Institute

44 South Cleveland
Memphis, TN 38104-3503
(901)722-8001
www.meri.org
Booth #1140

The Medical Education and Research Institute (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 from across the country and around the world.

Medtronic*

2600 Sofamor Danek Drive
Memphis, TN 38132-1719
(901)396-3133
www.medtronic.com
Booth #1419

Medtronic is the world's leading medical technology company. Featured will be products to advance the treatment of spinal and cranial disorders including breakthrough products and therapies to treat neurological pathologies, chronic diseases, and computer-assisted surgical technology.

MicroVention, Inc.

Suite A
75 Columbia Street
Aliso Viejo, CA 92656
(949)461-3314
www.microvention.com
Booth #1707

MicroVention develops devices for the treatment of vascular diseases in small vessels. These include, the MicroPlex® Coil System, the HydroCoil® and HydroSoftT® Embolic Systems, the V-Trak® Delivery System. A new full line of access products to include the new Traxcess™ Guidewires, the Chaperon™ Guiding Catheter System and the Headway Microcatheter™.

Micrus Endovascular Corporation*

821 Fox Lane
San Jose, CA 95131
(408)433-1400
www.micruscorp.com
Booth #813

Micrus develops implantable and disposable medical devices used to treat cerebral vascular diseases. Micrus' product lines include the Micrusphere and Presidio framing coils, Cashmere complex coil, DeltaPaq, Helipaq, and Ultipaq filling coils, Courier and Enzo microcatheters, Neuropath guiding catheter, Pharos intracranial stent (Not available for sale in the USA), EnPower detachment system.

MINSURG Corporation

Suite 203
2730 McMullen Booth Road
Clearwater, FL 33761
(727)475-4692
www.trufuse.com
Booth #1309

Facet Disease Breakthrough: TruFUSE® by minSURG(TM) offers a percutaneous option to treat both the pathology and symptoms of chronic back pain caused by facet disease in the same procedure. TruFUSE includes cortical allograft dowels that distract and stabilize the facets while establishing a platform for natural fusion.

Mizuho America, Inc.

133 Brimbal Avenue
Beverly, MA 01915
(800) 699-2547
www.mizuho.com
Booth #1813

Mizuho America, Inc. is a neurosurgical focused instrumentation company whose main products include Sugita® Aneurysm Clips, AVM Clips, Radiolucent & Metal Head Frames; Micro-Instruments, Kelly All-in-One Endonasal Transsphenoidal Instrument Set, 7200B Neurosurgical Operating Table, Feather® Precision Cutting Tools, Transcranial & Vascular Dopplers, and Day-Bailes Atraumatic & Standard Suction Tubes.

Mizuho OSI

30031 Ahern Avenue
Union City, CA 94587
(800)777-4674
www.mizuhosi.com
Booth #829

Mizuho OSI® develops, manufactures and distributes a comprehensive range of radiolucent specialty surgical tables and positioning systems. The Axis Jackson™ System, providing the latest technology in spinal tables will be exhibited in addition to the Jackson Table System which allows rotation of the patient 180° allowing anterior and posterior procedures.

Moeller Medical GmbH and Co. KG

Wasserkupperstr. 29-31
Fulda, Germany 36043
(49) 661941950
www.moeller-medical.com
Booth #1540

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, Germany 22880
(49) 4103709272
www.moeller-wedel.com
Booth #2446

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
(204)272 2220
www.monteris.com
Booth #828

MRI-guided focused laser-induced interstitial thermal therapy for the treatment of brain tumors.

National Inst of Neurological Disorders and Stroke (NINDS)

31 Center Drive, MSC 2540
Bldg 31, Room 8A07
Bethesda, MD 20892-2540
(301)496-5751
www.ninds.nih.gov
Booth #2717

The National Institute of Neurological Disorders and Stroke (NINDS) provides

information about available research support and funding mechanisms as well as free publications for patients and their families on Stroke and other neurological disorders. Members of the NINDS staff will be available to assist you. Printed material is available.

NeoSpine, a division of Symbion

Suite 500
40 Burton Hills Blvd.
Nashville, TN 37215
(615) 234-7923
www.neospine.com
Booth #1648

NeoSpine, a division of Symbion partners with neurosurgeons and orthopedic spine surgeons to develop and manage outpatient spine surgery and interventional pain care facilities. Our partners believe it is helpful to have a surgery center partner with the expertise to offer innovative solutions that best meet the needs of both surgeons and patients.

Neuro Diagnostic Devices

Suite 300
One Neshaminy Interplex
Trevose, PA 19053
(215)646-0094
www.neurodx.com
Booth #2513

ShuntCheck is a non-invasive device for the detection of cerebral spinal fluid flow through shunts.

Neurologica Corporation

14 Electronics Avenue
Danvers, MA 01923
(978)564-8500
www.neuro-logica.com
Booth #627

NeuroLogica is focused on conceiving, developing, manufacturing and marketing advanced medical imaging equipment. The company was founded based on the conviction that all people, regardless of where they live should have access to high quality medical imaging. The CereTom® portable CT scanner makes high quality imaging readily available, yet affordable to all hospitals and physicians. The scanner itself is lightweight, can be brought bedside, and used in any hospital room or clinic bay. The

scanner is capable of performing normal CT, Perfusion, Xenon Perfusion and Angiography.

Nextgen Healthcare Information Systems, Inc.

Nextgen Corporation
795 Horsham Road
Horsham, PA 19044
(215)657-7010
www.nextgen.com
Booth #1134

NextGen Healthcare is a leading provider of practice management and electronic medical records software for all medical specialties. Ideal for the solo practitioner or the multi-provider enterprise, our award-winning, CCHIT-certified, DOQ-IT approved solutions are proven to improve the quality of patient care and increase operational efficiencies—while delivering a healthy return on investment.

NICO Corporation

12263 Bridgewater Road
Indianapolis, IN 46256
(317)841-8883
www.niconeuro.com
Booth#1604

NICO's products are designed for use in minimally invasive neurosurgical procedures such as endonasal, retrosigmoidal, supra-occipital and open craniotomy approaches, including spinal surgery. We provide the clinician a more controlled, efficient and less traumatic alternative to tumor resection with the intent to improve clinical and economic outcomes for the patient.

NordicNeuroLab – US

Suite 210
234 W. Florida St.
Milwaukee, WI 53204
(262)337-0922
www.nordicneurolab.com
Booth #1407

North American Spine Society

7075 Veterans Blvd.
Burr Ridge, IL 60527-5614
(630) 230-3600
www.spine.org
Booth #1117

NSK Nakanishi, Inc.

700 Shimohinata
Kanuma-shi , 322-8666
81289643380
www.nsk-nakanishi.co.jp
Booth #1451

NovaBone Products, LLC

Suite 105
1551 Atlantic Blvd.
Jacksonville, FL 32207
(904)807-0141
www.novabone.com
Booth #630

Nutech Medical

174 Oxmoor Road
Birmingham, AL 35209
(205)290-2158
www.nutechmedical.com
Booth #1000

Nutech Medical, a true biological company, specializes in innovative allograft based products. Nutech distributes conventional and machined allograft from LifeNet Health. With NuCel, Nutech is able to offer the youngest adult stem cell product on the market. Nutech's product, NuFix, stabilizes the spine through facet fixation and is quickly becoming a staple in every spine surgeon's practice.

NuVasive, Inc.

4545 Towne Centre Court
San Diego, CA 92130-1900
(800)455-1476
www.nuvasive.com
Booth #1827

NuVasive is a comprehensive spine company featuring innovative technologies for the treatment of various disorders of the cervical, thoracic, and lumbar spine. NuVasive's Maximum Access Surgery (MAS™) platform features the MaXcess® Retractor System, the NeuroVision® Nerve Avoidance System, and specialized implants for minimally disruptive spine surgery. NuVasive's XLIF® procedure integrates several of these proprietary technologies.

Olsen Medical

99 Miller Road
Hawthorne, IL 60047
(847)540-7474
www.olsenmedical.com
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Olsen Medical is the industry leader in high quality bipolar and monopolar forceps with an emphasis on our proprietary "single use" collection. Our exclusive Extendable Pencil allows an adjustable length without extenders and is ideal for lumbar spine procedures. Olsen Medical is the quality source for your Electrosurgery needs.

OmniGuide

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Cambridge, MA 02139
(617)551-8444
www.omni-guide.com
Booth #1712

Ono & Co. Ltd.

2-12-5, Ginza, Chuo-ku
Tokyo, Japan 104-0061
(81) 3 3544 5351
www.ono-and.com
Booth #1606

Ono & Co. manufactures medical models based on patients' CT and MRI data. The models precisely reproduce the inner structure, including bones, nerves, and blood vessels. They can be cut, tapped and clipped, like human organs, for surgical planning, simulation and patient education. They are also used at hands-on workshops.

Orthofix, Inc.

1720 Bray Central Drive
McKinney, TX 75069
(469)742-2500
www.orthofix.com
Booth #1013

Orthofix's Orthopedics, Spine and Sports Medicine divisions offer innovative treatment options for adult and pediatric deformity correction, internal and external fracture fixation, biologics, bone growth stimulation, and protective and post-operative bracing.

Orthovita Inc.

77 Great Valley Parkway
Malvern, PA 19355
(610) 640-1775
www.orthovita.com
Booth #1213

Orthovita is a spine and orthopedic biosurgery company with proprietary biomaterials for the development and commercialization of synthetic, biologically active, tissue engineering products. Technology platforms include VITOSS® Synthetic Bone Graft Substitute, VITOSS BA Bioactive Synthetic Bone Graft Substitute, and VITAGEL® Surgical Hemostat.

Ossur Americas

1414 Metropolitan Avenue
Paulsboro, NJ 08066
(800)257-8440
www.ossur.com
Booth #1808

Ossur Trauma and Spine specializes in the acute phase of treatment with the world's leading c-spine care system and comprehensive acute fracture management solutions. We meet the specialized needs of caregivers and patients during each phase of the acute care continuum. By combining innovative materials and design with superior research and clinical education, we are your partner in the acute setting so that patients can truly lead a life without limitations

Osteomed

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Addison, TX 75001
(972)677-4600
www.osteomed.com
Booth #1435

OsteoMed designs, manufactures and delivers high quality, innovative and cost effective surgical products and services to improve patient outcome worldwide. For the neurosurgical community, we market cranial flap closing solutions like FastFlap and OsteoFlap along with the new generation hydroxyapatite OsteoVation bone void filler.

Osteotech, Inc.

51 James Way
Eatontown, NJ 07724
(732)542-2800

www.osteotech.com
Booth #1613

Osteotech is a global leader and innovator in OsteoBiologics for musculoskeletal surgery. Focusing on spinal, and trauma procedures, Osteotech provides a full line of innovative regeneration technologies such as Grafton® DBM, Graftech® Bio-Implants, Xpanse® Bone Inserts and Plexur® Biocomposites.

PainDX, Inc

2514 Temple Hills Drive
Laguna Beach, CA 92651
(800)766-0884
www.nervepathology.com
Booth #1101

Paradigm BioDevices, Inc.

Suite 102N
800 Hingham Street
Rockland, MA 02370
(781)982-9950
www.paradigmbiomed.com
Booth #1601

Paradigm BioDevices, Inc. specializes in novel spinal technologies including STALIF™ – Single Incision 360™, a system based solution to simple and complex spinal care and the percutaneous minimally invasive Quickdraw Bone Harvester®.

Pioneer Surgical Technology

375 River Park Circle
Marquette, MI 49855
(800)557-9909
www.pioneersurgical.com
Booth #1047

Pioneer® Surgical Technology, Inc. is a progressive medical device firm with a dynamic 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 Road
Chanhassen, MN 55317
(952)470-0866
www.pmtcorp.com
Booth #1513

PMT Corporation is the premier supplier of an extensive line of neurosurgical products.

Offering highend neck braces, including halo systems and orthotic vests 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.

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www.porexurgical.com
Booth #2238

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.

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Monument, CO 80132
(719)481-3353
www.surgicalmicroscopes.com
Booth #2135

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(513)569-5228
www.priorityconsult.com
Booth #2424

Priority Consult

Increase your spine surgery volume with Priority Consult®, an innovative patient management program developed by Mayfield Clinic. Priority Consult helps spine surgeons triage likely nonsurgical spine patients before an office visit. Nonsurgical

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Pro Med instruments, Inc.

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Cape Coral, FL 33904-7444
(496)713-8422
www.headrest.de
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Pro Med instruments was founded in 1993 and is headquartered in Freiburg, Germany – the technology center for fine precision mechanical engineering. Inspired by the lack of innovation in the marketplace, pro med instruments developed the DORO® brand of products with close collaboration of leading neurosurgeons and nurses. The Company designs and manufactures one of the largest selection of cranial stabilization, brain retractor systems and accessories for neurosurgery, which is marketed worldwide in over 50 countries.

Products for Medicine

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Anaheim, CA 92805
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Products For Medicine manufacturers a complete line of powerful White Sun® Xenon Light Sources, lightweight surgical headlights and ultra vivid video recording systems for today's neurosurgeon. Come see the White Sun® illumination difference. "Finally a Surgical Headlight System designed to fit my budget, not to break it".

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Saint Louis, MO 63146
(314)878-7808
www.qmp.com
Booth #1550

Quality Medical Publishing, Inc., produces the finest spine surgery books and digital media. Browse through our forthcoming educational offerings and current publications, including: Spinal Deformity: A Guide to Surgical Planning and Management, edited by Drs. Mummaneni, Lenke, and Haid; An Anatomic Approach to Minimally Invasive Spine Surgery, edited by Drs. Perez-Cruet, Fessler, & Khoo.

Rhausler Inc.

Unit E
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San Carlos, CA 94070
(650)631-4515
www.rhausler.com
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The Rhausler Cervical Plate set comes complete with Dynamic and Semiconstrained Cervical Plates, Bone Screws and all associated instrumentation. It allows the surgeon flexibility during the anterior cervical surgery.

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www.richardwolfusa.com
Booth #801

Richard Wolf features products for cranial endoscopy, including systems for neuroendoscopy and endoscope assisted microsurgery. Also, our foraminal endoscopic spine system can be used to treat a variety of spinal pathologies. Wolf's quality endoscope optics and integrated inflow, outflow, and instrument channels combine to provide superior endoscopic visualization to the neurosurgeon.

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Booth #1936

RSB Spine, LLC is a spinal implant development company focused on bringing innovative spinal implants to market. We focus on product ideas that cost effectively improve surgical outcomes and that are simple to implant. Our team works in collaboration with leading spine surgeons throughout the development process to ensure surgeon friendly products.

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Scryptions International

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 (702)361-6940
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Scryptions, headquartered in Henderson, Nevada, brings to market an effective use of technology combined with an expansive global workforce to provide the most effective Transcription Solutions offered in the industry that are strategically focused on improved turn-around and higher levels of accuracy. We have attained an industry-wide status for innovative, technologically driven, output-oriented and reliable solutions to improve performance and quality.

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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. SeaSpine is currently marketing the following systems: Malibu™ Universal Spinal System, Sonoma™ ACP, Sierra™ OCT System, Balboa™ Buttress Plate, Cambria™, Hollywood™, Pacifica™, Redondo™ and Ventura™ VBR Systems, Hermosa™ Bone Harvester & Zuma™ Anterior Plate and Spacer.

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www.siemens.com/healthcare
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 (760)607-0121
www.spinalelements.com
 Booth #1800

Spinal Elements develops and markets innovative technologies for spinal fusion and arthroplasty. The product portfolio includes: Mosaic™ Spinal Implant System; Atomic® Anterior Cervical Plate System; Crystal®, Lucent®, and Lucent Magnum™ intervertebral body devices; Mercury™ and Mercury™ Classic Spinal Systems, and Magnum+™ ALIF with screws. Spinal Elements is also developing the Zyre™ facet implant system.

Spine Surgical Innovations

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 South Easton, MA 02375
 (508)238-3351
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 Booth #1504

Spine Wave Inc.

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Spine Wave develops and markets clinical solutions for several market segments including: spinal fusion, vertebral compression fracture repair, and nuclear replacement and augmentation. The company's product portfolio includes the StaXx® XD Expandable Device, the CapSure® PS Spine System, the StaXx® FX Structural Kyphoplasty, the NuCore® Injectable Nucleus, and several additional products in development.

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SpineFrontier is growing from the ground up by surgeons to develop disruptive innovative technologies. Our company is driven by surgeon ingenuity that will improve patients' quality of life. Conceived by practicing surgeons, SpineFrontier comes to market with an innovative suite of MIS products.

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SpineMark is an innovative service organization dedicated to transforming the delivery of spine care. The company partners with hospitals and physicians across the United States and abroad to develop and operate comprehensive, evidence-based spine centers of excellence.

SpineMedica

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 (678)384-6720
www.spinemedica.com
 Booth #1602

SpineMedica is focused on commercializing medical technologies for application in the spine to treat chronic and acute back pain. The Paradis Vaso Shield uses SpineMedica's core technology, a PVA hydrogel biomaterial, to create a vessel cover for use following anterior vertebral surgery providing a plane of dissection during revision surgery.

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www.sjmneuro.com
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Synthes develops, manufactures, and is the sole authorized distributor of AO/ASIF instruments and implants used for fixation of the spine and craniofacial skeleton. Our product portfolio includes a variety of instruments and implants for fixation of the spine, craniomaxillofacial trauma, resorbable fixation and craniofacial bone graft substitutes.

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Houston, TX 77035
(713)726-0886
www.tedansurgical.com
Booth #1506

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Booth #1123

TrueVision Systems, Inc. (www.truevisionsys.com) is a medical device company focused on improved patient outcomes and efficiencies thru better visualization during microsurgery. The company developed and patented a digital, real-time 3DHD vision platform that uniquely facilitates the enhancement, integration, and management of imaging widely used in surgery and radiology.

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358 20 7622255
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The BonAlive® product family is a fully synthetic bioactive bone substitute for orthopaedic and cranio-maxillofacial (CMF) surgery. BonAlive® bioactive silica based granules are frequently used in filling, replacement and reconstruction of bone defects. Major indications in orthopaedics: bone tumors, cysts, fractures, spinal fusion. BonAlive® has been in clinical use for over 15 years.

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www.weatherbylocums.com
Booth #2017

Weatherby Locums is dedicated to providing superior personal service and finding the best opportunities that allow each physician to focus on optimum patient care. We offer physicians 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.

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 Booth #1012

X-spine is a next-generation spinal implant company. We are dedicated to advancing spinal implant technologies that improve surgery outcomes and optimize surgeon experience.

Zimmer Spine

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 Minneapolis, MN 55439
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 www.zimmer-spine.com
 Booth #2121

Zimmer Spine develops, produces and markets the highest quality spine products and services that repair, replace and regenerate spine health. Zimmer constructs superior fusion and non- fusion spine systems, instrumentation systems, cervical plates, allograft bone filler and trabecular metal. We value continuous surgeon education, building confidence and enhancing patient outcomes.





SAN DIEGO CONVENTION CENTER

4-D Neuroimaging	1704	Carl Zeiss Meditec, Inc.*	2235	Ikegami Electronics (USA), Inc	935
AANS/CNS Sections	1148	Castle Biosciences	1700	Impulse Monitoring, Inc.	1723
Accuray Incorporated	1126	CCV	1420	IMRIS	2044
Acra-Cut, Inc.	1207	Ceremed, Inc.	729	Innovasis	2441
Ad-Tech Medical Instrument Corporation	1306	Cervitech, Inc.	1725	Integra LifeSciences*	1901
Advanced Medical Technologies AG	1016	ChoiceSpine	1447	Invivo Corporation	1034
Aesculap Implant Systems	2113	Cloward Instrument Corporation	1035	Journal of Neurosurgery	1135
Aesculap Inc.	2312	CMF Medicon Surgical, Inc.	529	K2M Inc.	807
Allmeds	936	Codman, a Johnson and Johnson company*	2612	Kadlec Medical Center	1109
ALOKA Ultrasound	1223	Collagen Matrix, Inc.	1212	Karger Publishers	1703
Alpha Omega	1113	Community Tissue Services	1539	Karl Storz Endoscopy-America, Inc.	1801
Alphatec Spine, Inc.	1821	COMPASS International, Inc.	1021	Keeler Instruments Inc.	1500
Amedica Corporation	815	CompHealth	1019	Kinamed, Inc.	835
American Association of Neurological Surgeons	1135	Computational Diagnostics, Inc.	1138	Kirwan Surgical Products, Inc.	2523
American Express Open	1321	Congress of Neurological Surgeons	1605	KLS - Martin , LP	2435
American Radiosurgery	1946	Cosman Medical	2719	Koros USA, Inc.	1401
American Surgical Sponges	1040	Covidien	1807	LANX, Inc	1940
Anspach Companies	1313	Custom Spine	1322	Leica Microsystems	2034
Anulex Technologies Inc.	1541	Cyberonics	1537	Life Instrument Corporation	2713
Apatech	1120	DePuy Spine, a Johnson & Johnson company*	2612	Life Spine	1913
ArthroCare Corporation	1701	Designs For Vision Inc.	2729	LifeLink Tissue Bank	2420
Aspen Medical Products	1917	DFine Inc.	1206	LocumTenens.com	1551
Baitella AG	2012	DJO Incorporated	1603	Market Access Partners	2013
Baxter	2723	Eagle Surgical Products, LLC	622	MedCure	943
Benchmark Medical Consultants	1305	Eisai Inc.	1634	Medical Doctor Associates	1646
Berkeley Advanced Biomaterials, Inc.	1934	Electrical Geodesics, Inc. (EGI)	523	Medical Education & Research Institute	1140
BFW, Inc.	1806	Elekta	2635	Medtronic*	1419
Biomet Microfixation	1229	Elliquence, formerly Ellman Innovations	1535	MicroVention, Inc.	1707
Biomet Spine*	1329	Endure Medical	1107	Micrus Endovascular Corporation*	813
Blue Chip Surgical Center Partners	722	ERBE USA, Inc.	1706	MINSURG Corporation	1309
Borgess Health	1547	Exactech Inc.	1405	Mizuho America, Inc.	1813
BOSS Instruments Ltd.	1004	Fehling Surgical Instruments, Inc.	1041	Mizuho OSI	829
Boston Scientific Neuromodulation	623	GE Healthcare	535	Moeller Medical GmbH and Co. KG	1540
BrainLAB	2324	Globus Medical*	1734	Moeller-Wedel	2446
Bremer Group Company	1729	Gore & Associates	1640	Monteris Medical Inc.	828
Buxton BioMedical, Inc.	1609	gSource, LLC	2133	National Inst of Neurological Disorders and Stroke (NINDS)	2717
Cardinal Health V. Mueller Neuro/Spine Products	1201	Hydrocephalus Association	2137	NeoSpine, a division of Symbion	1648
		HydroCision, Inc.	1324	Neuro Diagnostics Devices	2513

Neurologica Corporation	627	Signus Medical, LLC	1323	XIV World Congress of Neurological Surgery of WFNS	1135
Nextgen Healthcare Information Systems, Inc.	1134	Single Use Surgical Inc.	1915	Xoran Technologies Inc.	1400
NICO Corporation	1604	Sonowand AS	2242	X-Spine Systems	1012
NordicNeuroLab	1407	Sontec Instruments	1708	Zimmer Spine	2121
North American Spine Society	1117	Sophysa	2139		
NovaBone Products, LLC	630	Spinal Elements	1800		
NSK Nakanishi, Inc.	1451	Spine Wave Inc.	1413		
Nutech Medical	1000	SpineFrontier, Inc.	1406		
NuVasive, Inc.	1827	SpineMark Corporation	1409		
Olsen Medical	628	SpineMedica	1602		
OmniGuide	1712	St. Jude Medical	2647		
Ono & Co. Ltd.	1606	Strategic Ancillaries LLC	1546		
Orthofix, Inc.	1013	Stryker*	1921		
Orthovita Inc.	1213	Surgical Acuity	1118		
Ossur Americas	1808	SurgiTel/General Scientific Corporation	1721		
Osteomed	1435	SurgiVision Inc.	1216		
Osteotech, Inc.	1613	Synergetics, Inc.	2535		
PainDX, Inc	1101	Synthes*	2326		
Paradigm BioDevices, Inc.	1601	TeDan Surgical Innovations	1506		
Pioneer Surgical Technology	1047	The Doctors Company	1142		
PMT Corporation	1513	Theken	927		
Porex Surgical, Inc.	2238	Thieme Publishers	1441		
PracticeLink	1221	ThinkFirst Foundation	1702		
Prescott's, Inc.	2135	Thompson Surgical Instruments, Inc.	2014		
Priority Consult	2424	TomoTherapy, Inc.	2721		
Pro Med instruments, Inc.	1422	Trans1	734		
Products for Medicine	1200	TrueVision Systems, Inc.	1123		
Quadrino Schwartz	1449	Ulrich Medical USA	2234		
Quality Medical Publishing, Inc.	1550	US Radiosurgery	1320		
Rhausler Inc.	1301	US Spine	819		
Richard Wolf Medical Instruments Corporation	801	Verticor, LTD	1121		
RosmanSearch, Inc.	2116	VertiFlex, Inc	2127		
RSB Spine	1936	VISTA Staffing Solutions	1146		
Saunders / Mosby - Elsevier	2731	Vivoxid Ltd.	1542		
Scanlan International, Inc.	2112	Weatherby Locums	2017		
Scryptions International	1136	Welch Allyn, Inc.	1020		
SeaSpine, Inc.	1713	Wiggins Medical	1935		
Siemens Medical Solutions USA Inc	1501	Wolters Kluwer Health-Lippincott Williams & Wilkins	2346		

523	Electrical Geodesics, Inc. (EGI)	1109	Kadlec Medical Center	1323	Signus Medical, LLC
529	CMF Medicon Surgical, Inc.	1113	Alpha Omega	1324	HydroCision, Inc.
535	GE Healthcare	1117	North American Spine Society	1329	Biomet Spine*
541	Moeller-Wedel	1118	Surgical Acuity	1400	Xoran Technologies Inc.
622	Eagle Surgical Products	1120	Apatech	1401	Koros USA, Inc.
623	Boston Scientific Neuromodulation*	1121	Verticor	1405	Exactech
627	Neurologica Corporation	1123	TrueVision Systems, Inc.	1406	SpineFrontier, Inc.
628	Olsen Medical	1126	Accuray Incorporated	1407	Nordic NeuroLab
630	NovaBone Products, LLC	1134	Nextgen Healthcare Information Systems, Inc.	1409	SpineMark Corporation
722	Blue Chip Surgical Center Partners	1135	American Association of Neurological Surgeons	1413	Spine Wave Inc.
729	Ceremed, Inc.	1135	Journal of Neurosurgery	1419	Medtronic*
734	Trans1	1135	XIV World Congress of Neurological Surgery of WFNS	1420	CCV
801	Richard Wolf Medical Instruments Corporation	1136	Scryptions International	1422	Pro Med instruments, Inc.
807	K2M	1138	Computational Diagnostics	1435	Osteomed
813	Micrus Endovascular Corp.*	1140	Medical Education & Research Institute	1441	Thieme Publishers
815	Amedica	1142	The Doctors Company	1447	ChoiceSpine
819	US Spine	1146	VISTA Staffing Solutions	1449	Quadrino Schwartz
828	Monteris Medical Inc.	1148	AANS/CNS Sections	1451	NSK Nakanishi
829	Mizuho OSI	1200	Products for Medicine	1500	Keeler Instruments Inc.
835	Kinamed	1201	Cardinal Health V. Mueller Neuro/Spine Products	1501	Siemens Medical Solutions USA Inc
927	Theken	1206	DFine	1506	TeDan Surgical Innovations
935	Sunoptic Technologies	1207	Acra-Cut, Inc.	1513	PMT Corporation
936	Allmeds	1212	Collagen Matrix, Inc.	1535	Elliquence, formerly Ellman Innovations
943	MedCure	1213	Orthovita Inc.	1537	Cyberonics
1000	Nutech Medical	1216	SurgiVision	1539	Community Tissue Services
1004	BOSS Instruments	1221	PracticeLink	1540	Moeller Medical GmbH and Co. KG
1012	X-Spine Systems	1223	ALOKA Ultrasound	1541	Anulex Technologies Inc.
1013	Orthofix	1229	Biomet Microfixation	1542	Vivoxid Ltd.
1016	Adanced Medical Technologies	1301	Rhausler Inc.	1546	Strategic Ancillaries LLC
1019	CompHealth	1305	Benchmark Medical Consultants	1547	Borgess Health
1020	Welch Allyn, Inc.	1306	Ad-Tech Medical Instrument Corporation	1550	Quality Medical Publishing
1021	COMPASS	1309	MINSURG Corporation	1551	LocumTenens
1034	Invivo Corporation	1313	Anspach Companies	1601	Paradigm BioDevices, Inc.
1035	Cloward Instrument Corporation	1320	US Radiosurgery	1602	SpineMedica
1040	American Surgical Sponges	1321	American Express Open	1603	DJO Inc.
1047	Pioneer Surgical Technology	1322	Custom Spine	1605	Congress of Neurological Surgeons
1101	PainDX			1606	Ono & Co. Ltd.
1107	Endure Medical				

1609	Buxton BioMedical, Inc.	2013	Market Access Partners	2729	Designs For Vision Inc.
1613	Osteotech, Inc.	2014	Thompson Surgical Instruments, Inc.	2731	Saunders / Mosby - Elsevier
1634	Eisai Inc.	2017	Weatherby Locums		
1640	Gore & Associates	2034	Leica Microsystems		
1646	Medical Doctor Associates	2112	Scanlan International, Inc.		
1648	NeoSpine	2113	Aesculap Implant Systems		
1700	Castle Biosciences	2116	RosmanSearch, Inc.		
1701	ArthroCare Corporation	2121	Zimmer Spine		
1702	ThinkFirst Foundation	2127	VertiFlex, Inc		
1703	Karger Publishers	2133	gSource, LLC		
1704	4-D Neuroimaging	2135	Prescott's, Inc.		
1706	ERBE	2137	Hydrocephalus Association		
1707	MicroVention, Inc.	2139	Sophysa		
1708	Sontec Instruments	2234	Ulrich Medical USA		
1712	OmniGuide	2235	Carl Zeiss Meditec, Inc.*		
1713	SeaSpine, Inc.	2238	Porex Surgical, Inc.		
1721	SurgiTel/General Scientific Corporation	2242	Sonowand AS		
1723	Impulse Monitoring, Inc.	2312	Aesculap Inc.		
1725	Cervitech, Inc.	2324	BrainLAB		
1729	Bremer Group Company	2326	Synthes*		
1734	Globus Medical*	2346	Wolters Kluwer Health-Lippincott Williams & Wilkins		
1800	Spinal Elements	2420	LifeLink Tissue Bank		
1801	Karl Storz Endoscopy-America, Inc.	2424	Priority Consult		
1806	BFW, Inc.	2435	KLS - Martin , LP		
1807	Covidien	2441	Innovasis		
1808	Ossur Americas	2513	Neuro Diagnostic Devices		
1813	Mizuho America, Inc.	2523	Kirwan Surgical Products, Inc.		
1821	Alphatec Spine, Inc.	2535	Synergetics, Inc.		
1827	NuVasive, Inc.	2612	Codman, a Johnson & Johnson company*		
1901	Integra LifeSciences*	2612	DePuy Spine, a Johnson & Johnson company*		
1913	Life Spine	2635	Elekta		
1915	Single Use Surgical	2647	St. Jude Medical		
1917	Aspen Medical Products	2713	Life Instrument Corporation		
1921	Stryker*	2717	National Inst of Neurological Disorders and Stroke (NINDS)		
1934	Berkeley Advanced Biomaterials, Inc.	2719	Cosman Medical		
1935	Wiggins Medical	2721	TomoTherapy, Inc.		
1936	RSB Spine	2723	Baxter		
1940	LANX, Inc				
2012	Baitella AG				

ALLOGRAFTS/HUMAN TISSUE

Alphatec Spine, Inc.	1821
Berkeley Advanced Biomaterials, Inc.	1934
Biomet Spine*	1329
ChoiceSpine	1447
Cloward Instrument Corporation	1035
Community Tissue Services	1539
DePuy Spine, a Johnson & Johnson company*	2612
Exactech Inc.	1405
Globus Medical*	1734
LifeLink Tissue Bank	2420
MINSURG Corporation	1309
NuTech Medical	1000
Osteotech, Inc.	1613
SeaSpine, Inc.	1713
Synthes Spine*	2326
Zimmer Spine	2121

ANATOMICAL CHARTS/MODELS

Ono & Co. Ltd.	1606
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ANEURYSM CLIPS & ACCESSORIES

Aesculap Inc.	2312
CMF Medicon Surgical, Inc.	529
Mizuho America, Inc.	1813
Scanlan International, Inc.	2112

ASPIRATORS

Aesculap Implant Systems	2113
Aesculap Inc.	2312
Synergetics, Inc.	2535

BONE GROWTH STIMULATORS

Biomet Spine*	1329
DJO Inc.	1603
NovaBone Products, LLC	630
Orthofix, Inc.	1013
Vivoxid Ltd.	1542

BONE SUBSTITUTE

Apatech	1120
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Biomet MicroFixation	1229
DePuy Spine, a Johnson & Johnson company*	2612
Innovasis	2441
Integra LifeSciences*	1901
LANX, Inc	1940
Medtronic*	1419
NovaBone Products, LLC	630
Orthovita Inc.	1213
Osteomed	1435
Pioneer Surgical Technology	1047
Signus Medical, LLC	1323
Stryker*	1921
Theken Spine	927
Vivoxid Ltd.	1542
Zimmer Spine	2121

BRAIN RETRACTION SYSTEMS

Pro Med Instruments, Inc.	1422
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COMPUTER HARDWARE

COMPASS International, Inc.	1021
DFine Inc.	1206

COMPUTER SOFTWARE/OFFICE

Allmeds	936
Elekta	2635
Nextgen Healthcare Information Systems, Inc.	1134

COMPUTER SOFTWARE/SURGICAL

Alpha Omega	1113
Computational Diagnostics, Inc.	1138
DFine Inc.	1206
Priority Consult	2424
TrueVision Systems, Inc.	1123
Saunders/Mosby-Elsevier	2731

CONT.MEDICAL EDUCATION COURSES

Aesculap Implant Systems	2113
American Association of Neurological Surgeons	1135
Benchmark Medical Consultants	1305

Congress of Neurological Surgeons	1605
North American Spine Society	1117
Quality Medical Publishing, Inc.	1550

CRANIAL STABILIZATION SYSTEMS

Innovasis	2441
Pro Med Instruments, Inc.	1422

CRANIOTOMES, DRILLS & ACCE

Acra-Cut, Inc.	1207
Aesculap Implant Systems	2113
Aesculap Inc.	2312
Anspach Companies	1313
Innovasis	2441
NSK Nakanishi, Inc.	1451
Stryker*	1921

CRANIOTOMES, DRILLS & ACCESSORIES

Acra-Cut, Inc.	1207
Aesculap Implant Systems	2113
Anspach Companies	1313
NSK Nakanishi, Inc.	1451

CSF DRAINAGE DEVICES

Aesculap Implant Systems	2113
Integra LifeSciences*	1901
Moeller Medical GmbH and Co. KG	1540
Sophysa	2139

CT/MRI/MAGNETIC SOURCE IMAGING

4-D Neuroimaging	1704
GE Healthcare	535
IMRIS	2044
Invivo Corporation	1034
Neurologica Corporation	627
Ono & Co. Ltd.	1606

DIAGNOSTIC IMAGING

Electrical Geodesics, Inc. (EGI)	523
GE Healthcare	535
Invivo Corporation	1034

NordicNeuroLab	1407	HALO SYSTEMS/SPINAL ORTHOSIS	MANAGED CARE MARKETS
Siemens Medical Solutions USA Inc	1501	Bremer Group Company	1729
Xoran Technologies Inc.	1400	DePuy Spine, a Johnson & Johnson company*	2612
DURA SUBSTITUTE		Ossur Americas Trauma and Spine	1808
Collagen Matrix, Inc.	1212	PMT Corporation	1513
Stryker*	1921	HEADLIGHTS, SURGICAL	
ENDOSCOPES, NEUROLOGICAL		BFW, Inc.	1806
Ad-Tech Medical Instrument Corporation	1306	Biomet MicroFixation	1229
Aesculap Implant Systems	2113	Designs For Vision, Inc.	2729
Aesculap Inc.	2312	Karl Storz Endoscopy-America, Inc.	1801
Karl Storz Endoscopy-America, Inc.	1801	PMT Corporation	1513
Richard Wolf Medical Instruments Corporation	801	Products for Medicine	1200
Synergetics, Inc.	2535	SurgiTel/General Scientific Corporation	1721
ENDOVASCULAR DEVICES		Welch Allyn, Inc.	1020
Codman, a Johnson & Johnson company*	2612	HEMOSTATS	
Cordis Neurovascular	2521	Baxter	2723
Innercool Therapies	1700	Ceremed, Inc.	729
Micrus Endovascular Corporation*	813	gSource, LLC	2133
FLUOROSCOPES		Orthovita Inc.	1213
GE Healthcare	535	IMAGE-GUIDED NAVIGATION SYSTEM	
FUNCTIONAL DEVICES		BrainLAB	2324
DJO Inc.	1603	COMPASS International, Inc.	1021
NordicNeuroLabs	1407	GE Healthcare	535
FUNCTIONAL STEREOTACTIC SURGERY		Integra LifeSciences*	1901
Acra-Cut, Inc.	1207	Medtronic*	1419
Alpha Omega	1113	Scanlan International, Inc.	2112
American RadioSurgery, Inc.	1946	Siemens Medical Solutions USA Inc	1501
BrainLAB	2324	Sonowand AS	2242
COMPASS International, Inc.	1021	Stryker*	1921
Cosman Medical	2719	Surgivision	1216
Elekta	2635	IMAGING AGENTS	
Surgivision	1216	TomoTherapy, Inc.	2721
		LASERS	
		Monteris Medical Inc.	828
		OmniGuide	1712
		NeoSpine	1648
		MEDICAL DEVICES	
		Accuray, Incorporated	1126
		Ad-Tech Medical Instrument Corporation	1306
		Alpha Omega	1113
		Alphatec Spine, Inc.	1821
		American RadioSurgery, Inc.	1946
		Anspach Companies	1313
		Anulex Technologies Inc.	1541
		ArthroCare Corporation	1701
		Aspen Medical Products	1917
		Berkeley Advanced Biomaterials, Inc.	1934
		Boston Scientific Neuromodulation*	623
		CCV	1420
		Ceremed, Inc.	729
		Cervitech, Inc.	1725
		Codman, a Johnson & Johnson company*	2612
		Collagen Matrix, Inc.	1212
		COMPASS International, Inc.	1021
		Cosman Medical	2719
		Covidien	1807
		Cyberonics	1537
		DePuy Spine, a Johnson & Johnson company*	2612
		DFine Inc.	1206
		Elekta	2635
		Elliquence	1535
		ERBE USA, Inc.	1706
		Globus Medical*	1734
		Gore & Associates, Inc.	1640
		HydroCision, Inc.	1324
		IMRIS	2044
		LANX, Inc.	1940
		Medtronic*	1419
		MicroVention, Inc.	1707
		Micrus Endovascular Corporation*	813
		Mizuho America, Inc.	1813

PRACTICE MANAGEMENT

Allmeds	936
Benchmark Medical Consultants	1305
Blue Chip Surgical Center Partners	722
NeoSpine	1648
Nextgen Healthcare Information Systems, Inc.	1134
Strategic Ancillaries LLC	1546

PUBLISHERS

American Association of Neurological Surgeons	1135
Congress of Neurological Surgeons	1605
Journal of Neurosurgery	1135
Karger Publishers	1703
North American Spine Society	1117
Quality Medical Publishing, Inc.	1550
Thieme Medical Publishers	1441
Saunders/Mosby-Elsevier	2731
Wolters Kluwer	2346

RECRUITERS

Borgess Health	1547
CompHealth	1019
LocumTenens.com	1551
Medical Doctor Associates	1646
PracticeLink	1221
RosmanSearch, Inc.	2116
VISTA Staffing Solutions	1146
Weatherby Locums	2017

REHABILITATION

Aspen Medical Products	1917
Bremer Group Company	1729
Think First Foundation	1702

RESEARCH, MEDICAL/MARKETING

Market Access Partners	2013
Medical Education & Research Institute	1140
SpineMark Corporation	1409
Strategic Ancillaries LLC	1546

RIGID FIXATION/PLATING SYSTEM

Biomet MicroFixation	1229
CMF Medicon Surgical, Inc.	529
DePuy Spine, a Johnson & Johnson company*	2612
DFine Inc.	1206
Globus Medical*	1734
Kinamed, Inc.	835
KLS - Martin , LP	2435
Life Spine	1913
Osteomed	1435
Pioneer Surgical Technology	1047
RSB Spine	1936
Zimmer Spine	2121

SHUNTS & VALVES

Aesculap Implant Systems	2113
Aesculap Inc.	2312
Integra LifeSciences	1901
Sophysa	2139

SPINAL CORD STIMULATION SYSTEM

Boston Scientific*	623
Computational Diagnostics, Inc.	1138
Orthofix, Inc.	1013
St. Jude Medical	2647

SPINAL FIXATION INSTRUMENT

Acra-Cut, Inc.	1207
Advanced Medical Technologies AG	1016
Alphatec Spine, Inc.	1821
Biomet Spine*	1329
BrainLAB	2324
ChoiceSpine	1447
Custom Spine	1322
DFine Inc.	1206
Fehling Surgical Instruments, Inc.	1041
Globus Medical	1734
LANX, Inc	1940
Life Spine	1913
Medtronic*	1419

MINSURG Corporation	1309
NuVasive, Inc.	1827
Paradigm BioDevices/Surgicraft USA	1601
Pioneer Surgical Technology	1047
Rhausler Inc.	1301
RSB Spine	1936
SeaSpine, Inc.	1713
Signus Medical, LLC	1323
Spinal Elements	1800
Spine Wave Inc.	1413
Stryker*	1921
Synthes Spine*	2326
Theken Spine	927
Trans1	734
Ulrich Medical USA	2234
US Spine	819
VertiFlex	2127
X-Spine Systems	1012
Zimmer Spine	2121

STEREOTACTIC RADIOSURGERY

Accuray, Incorporated	1126
Alpha Omega	1113
American RadioSurgery, Inc.	1946
BrainLAB	2324
Elekta	2635
Integra LifeSciences*	1901
US Radiosurgery	1320

STERILIZATION CONTAINERS

Cardinal Health V. Mueller Neuro/Spine Products	1201
Fehling Surgical Instruments, Inc.	1041
Richard Wolf Medical Instruments Corporation	801
Scanlan International, Inc.	2112

SURGICAL INSTRUMENTS/SUPPLIES

Advanced Medical Technologies AG	1016
Aesculap Implant Systems	2113
Aesculap Inc.	2312

Alphatec Spine, Inc.	1821	TeDan Surgical Innovations	1506
American Surgical Sponges	1040	Thompson Surgical Instruments, Inc.	2014
ArthroCare Corporation	1701	Wiggins Medical	1935
Baitella AG	2012		
BOSS Instruments Ltd.	1004	SURGICAL RETRACTORS	
Buxton BioMedical, Inc.	1609	BOSS Instruments Ltd.	1004
Cardinal Health V. Mueller Neuro/Spine Products	1201	Koros USA, Inc.	1401
CCV	1420	Pioneer Surgical Technology	1047
Cervitech, Inc.	1725	Scanlan International, Inc.	2112
Cloward Instrument Corporation	1035	Spine Surgical Innovations	1504
CMF Medicon Surgical, Inc.	529	TeDan Surgical Innovations	1506
Eagle Surgical Products, LLC	622	Thompson Surgical Instruments, Inc.	2014
Elliquence	1535	Zimmer Spine	2121
ERBE USA, Inc.	1706		
Exactech Inc.	1405	TELESCOPES, SURGICAL (LOUPES)	
Fehling Surgical Instruments, Inc.	1041	Carl Zeiss Meditec, Inc.*	2235
gSource, LLC	2133	Designs For Vision, Inc.	2729
HydroCision, Inc.	1324	Keeler Instruments Inc.	1500
Integra LifeSciences*	1901	Scanlan International, Inc.	2112
K2M Inc.	807	Surgical Acuity	1118
Karl Storz Endoscopy-America, Inc.	1801	SurgiTel/General Scientific Corporation	1721
Keeler Instruments Inc.	1500		
Kirwan Surgical Products, Inc.	2523	ULTRASOUND EQUIPMENT	
KLS - Martin , LP	2435	ALOKA Ultrasound	1223
Koros USA, Inc.	1401	GE Healthcare	535
Life Instrument Corporation	2713	Sonowand AS	2242
NSK Nakanishi, Inc.	1451		
NuVasive, Inc.	1827	VIDEO EQUIPMENT	
Olsen Medical	628	BFW, Inc.	1806
Pioneer Surgical Technology	1047	Endure Medical	1107
PMT Corporation	1513	Ikegami Electronics (USA), Inc	935
Prescott's, Inc.	2135	Moeller-Wedel	2446
Pro Med Instruments, Inc.	1422	Prescott's, Inc.	2135
Richard Wolf Medical Instruments Corporation	801	Richard Wolf Medical Instruments Corporation	801
Single Use Surgical Inc.	1915	Stryker*	1921
Sontec Instruments	1708	TrueVision Systems, Inc.	1123
SpineVision Inc.	1321	Welch Allyn, Inc.	1020

For attendees participating in an **all day** clinic or in a **morning and afternoon** clinic, lunch will be served in Room 20A, San Diego Convention Center, from 12:00–1:00 PM.

Coffee Breaks

9:45–10:30 AM, located in Ballroom 20D and outside Room 29A

2:45–3:30 PM, located in Ballroom 20D and outside Room 29A

PRACTICAL CLINICS

8:00 AM–12:00 PM

700

International Spine Masters

Room 28CD, San Diego Convention Center

Director:

Edward C. Benzel, MD

Faculty:

Richard Assaker, MD; Roberto Assietti, MD; Steve Gill, MD; Miguel Giudicissi-Filho, MD; H. Michael Mayer, MD, PhD; Mehmet Zileli, MD

This is a didactic course 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.

Clinic Fee: \$450

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

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International Skull Base Masters

Room 29A, San Diego Convention Center

Director:

Arnold H. Menezes, MD

Faculty:

Luis Alencar Borba, MD; Albino P. Bricolo, MD; Takeshi Kawase, MD; Andrew H. Kaye, MD; Basant Kumar Misra, MD; Bhawani S. Sharma, MBBS, FACS

This is a didactic course comprised of lectures, case presentations and discussion concerning skull base surgery. Surgical approaches and operative techniques for anterior, middle, and posterior cranial base lesions will be presented.

Clinic Fee: \$450

Learning Objectives:

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

- Describe the evaluation and surgical management of anterior, middle, and posterior cranial base lesion
- Discuss the advantages of various surgical approaches in terms of exposure and reconstruction
- Review the tenets of complication avoidance and management in skull base surgery

702

International Neurovascular Masters

Room 29B, San Diego Convention Center

Director:

Christopher M. Loftus, MD, FACS

Faculty:

Atos Alves De Sousa, MD; Evandro De Oliveira, MD, PhD; Alexander David Mendelow, FRCS, PhD; Michael K. Morgan, MD; Hirotohi Sano, MD; Gabriele Schackert, MD; Ugur Ture, MD

This is a didactic course comprised of lectures, case presentations and discussion addressing intracranial neurovascular disease. The management and treatment outcomes for vascular malformations, aneurysms, and intracerebral hemorrhage will be reviewed.

Clinic Fee: \$450

Learning Objectives:

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

- Describe the pathogenesis, natural history, evaluation and medical and surgical management of the entire spectrum of intracranial vascular disease including

vascular malformations, aneurysms and intracerebral hemorrhage

- List the treatment options for each of these pathological conditions and explain the latest treatment concepts

703

International Endoscopy Masters

Room 29C, San Diego Convention Center

Director:

Jeremy D. W. Greenlee, MD

Faculty:

Paolo Cappabianca, MD; Sergio Cavaheiro, MD; Luiz Carlos de Alencastro, MD; Chandrashek Deopujari, MD; Michael R. Gaab, MD, PhD; Shizuo Oi, MD

This is a didactic course comprised of lectures, case presentations and discussion focused on the use of endoscopic techniques for the management of a variety of neurosurgical lesions. The course will include high quality video examples of endoscopic surgery with emphasis on intraoperative technique.

Clinic Fee: \$450

Learning Objectives:

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

- Describe the advantages and disadvantages of endoscopy as it relates to neurosurgical procedures
- Explain the advantages and disadvantages of this minimally invasive approach
- List the procedures which can be performed with endoscopy

PRACTICAL CLINICS

8:00 AM–5:00 PM

001

Practical and Technical Aspects of Transsphenoidal Surgery

Room 20BC, San Diego Convention Center

Co-directors:

William T. Couldwell, MD, PhD; Gail L. Rousseau, MD

Faculty:

William F. Chandler, MD, FACS; Matthew G. Ewend, MD, FACS; Carl B. Heilman, MD; John A. Jane Jr., MD; Amin Kassam, MD;

Daniel F. Kelly, MD; Edward R. Laws Jr., MD; Ian E. McCutcheon, MD; Basant Kumar Misra, MD; Edward H. Oldfield, MD; Jean Regis, MD; Warren R. Selman, MD

This clinic will review traditional transsphenoidal approaches and present contemporary modifications of the technique, including endoscopic approaches. This clinic will also update the neurosurgeon on current medical and radiosurgical adjuncts to transsphenoidal surgery.

Clinic Fee: \$1,500

Learning Objectives:

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

- Describe the transsphenoidal approach and contemporary modification
- Cite the advantages of the endonasal, endoscopic technique
- Outline current approaches to transsphenoidal surgery
- Evaluate adjunctive therapies for patients with pituitary tumors

002

Anterior and Lateral Approaches to Skull Base

Room 32AB, San Diego Convention Center

Co-directors:

Ossama Al-Mefty, MD; Chandranath Sen, MD

Faculty:

Ryojo Akagami, MD; Chun Siang Chen, MD; William T. Couldwell, MD, PhD; Franco De Monte, MD, FACS; Evandro De Oliveira, MD, PhD; Kadir Erkmén, MD; Paulo Abdo Kadri, MD; Wesley A. King, MD; Sandeep M. Kunwar, MD; Anil Nanda, MD, FACS; Thomas C. O'rigitano, MD, PhD; Raj K. Shrivastava, MD; Ugur Ture, MD

Skull base approaches will be taught by recognized experts in the field through lectures and hands-on cadaver dissections.

Clinic Fee: \$1,500

Learning Objectives:

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

- Describe the surgical anatomy of approaches to the skull base
- Evaluate advantages/disadvantages of approaches for specific pathologies

- Discuss minimizing morbidity of tumor resection in the skull base

003

Current Surgical Techniques and Approaches to MIS Spine Surgery

Room 20D, San Diego 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 E. Isaacs, MD; Larry T. Khoo, MD; John C. Liu, MD; John E. O'Toole, MD; Alfred T. Ogden, MD; Mick J. Perez-Cruet, MD; Faheem A. Sandhu, MD, PhD; Justin S. Smith, MD, PhD; John K. Song, MD; Trent L. Tredway, MD; Jean-Marc Voyadzis, MD

The course is designed to provide 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.

Clinic Fee: \$1,500

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

INTERNATIONAL SYMPOSIUM

1:00–5:00 PM

Room 28CD, San Diego Convention Center

Moderator:

Neil D. Kitchen, MD, FRCS

This symposium is comprised of lectures and discussion addressing the areas of skull base, spinal and neurovascular surgery and neuro-oncology. The presentations will provide a comprehensive update for each of these subspecialty areas.

Learning Objectives:

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

- Explain the current concepts in terms of evaluation and management of conditions involving the skull base, spine, vasculature and CNS neoplasms

1:00–2:00 PM

Skull Base

Moderator:

Jose Alberto Landeiro, MD

Cranovertebral Re-Alignment

Speaker: Atul Goel, MD

Long-Term Outcome of Patients with a Petroclival Meningioma who Underwent Subtotal Removal or Radiosurgery

Speaker: Hee-Won Jung, MD

ABC Risk Scale for Surgical Management of Skull Base Meningiomas

Speaker: Takeshi Kawase, MD

2:00–3:00 PM

Spine

Posterior Vertebrectomy for Metastatic High Thoracic Tumors

Moderator:

William Sears, MD

XLIF for Spine Fusion and Motion Preservation

Speaker: Luiz Pimenta, MD, PhD

Intramedullary Spinal Cord Tumors

Speaker: Miguel Angel Arraez Sanchez, MD

Surgical Strategies in Management of Cervical OPLL

Speaker: Hiroshi Nakagawa, MD

3:00–4:00 PM

Cerebrovascular

Moderator:

Ivan Ng, MD

Natural History and Excess Mortality of AVMs – Helsinki Experience in 631 Patients 1942-2005

Speaker: Mika Niemela, MD, PhD

The Use of Intra-Operative Imaging and Surgical Navigation for Neurovascular Surgery

Speaker: Ivan Ng, MD

Surgery for Cavernous Malformations Assisted by Neuronavigation

Speaker: Jizong Zhao, MD

Intracranial Endovascular Reconstruction for Brain Aneurysms by Flow Diversion: My First 100 Patients or Buenos Aires Experience

Speaker: Pedro Lylyk, MD

4:00–5:00 PM

Neuro-Oncology

Moderator:

Johannes Schramm, MD, Prof

Brain Tumours and Epilepsy - A Molecular Basis

Speaker: Andrew H. Kaye, MD

Management Strategy in Clival Chordoma

Speaker: Basant Kumar Misra, MD

Glioma Surgery Assisted by Multi-Modal Navigation Systems

Speaker: Takanori Ohnishi, MD, Prof

Microsurgery for Insular Gliomas

Speaker: Johannes Schramm, MD, Prof

PRACTICAL CLINIC

1:00–5:00 PM

004

Minimally Invasive Treatment of Trigeminal Neuralgia

Room 28AB, San Diego Convention Center

Co-directors:

Jeffrey Thomas Keller, PhD; John M.

Tew Jr., MD

Faculty:

Kim J. Burchiel, MD, FACS; Aaron A. Cohen-Gadol, MD; Joseph C.T. Chen, MD, PhD; Andrew W. Grande, MD; Robert G. Kerr, MD, PhD; Michael J. Link, MD; George T. Mandybur, MD; Nancy A. McMahon, RN; Chad J. Morgan, MD; Philip V. Theodosopoulos, MD

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.

Clinic Fee: \$450

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



SUNDAY, MAY 3

For attendees participating in an **all day** clinic or in a **morning and afternoon** clinic, lunch will be served in room 20A, in the San Diego Convention Center, from 12:00–1:00 PM.

Coffee Breaks

9:45–10:30 AM, located outside room 27 and outside Room 29A
2:45–3:30 PM, located in Foyer 27 and outside Room 29A

PRACTICAL CLINICS 8:00 AM–12:00 PM

005

Spinal Endoscopic Techniques to the Thoracic and Lumbar Spine

Room 20D, San Diego Convention Center

Director:

Kevin T. Foley, MD

Faculty:

Dean Chou, MD; Curtis A. Dickman, MD; Richard G. Fessler, MD, PhD; Robert E. Isaacs, MD

This clinic provides hands-on training with thoracic and lumbar microendoscopic discectomy and thoracoscopy, using cadaveric material.

Clinic Fee: \$960

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Describe the techniques and indications for endoscopic spinal surgery
 - Review endoscopic surgery for spine
 - Determine indications and contraindications for endoscopic spinal surgery

006

Cranial Radiosurgery

Room 24BC, San Diego Convention Center

Director:

Antonio A. F. De Salles, MD, PhD

Faculty:

William A. Friedman, MD, FACS; Peter C. Gerszten, MD, MPH; Alessandra Augusta Gorgulho, MD; Ajay Niranjana, MD; Michael Brian Sisti, MD, FACS

This clinic will illustrate various radiosurgery methods currently available.

Clinic Fee: \$450

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
- Discuss indications of radiosurgery for functional disease of the brain
- Explain differences among the various radiosurgery techniques available
- Apply a radiosurgery plan

007

Cranio-Cervical Junction: Surgical Approaches, Indications and Fusion Techniques

Room 25AB, San Diego Convention Center

Director:

Arnold H. Menezes, MD

Faculty:

Richard C. E. Anderson, MD; Ronald I. Apfelbaum, MD; Marc E. Eichler, MD; Michael G. Fehlings, MD, PhD; Noel I. Perin, MD, FRCS; Rick C. Sasso, MD; Paul D. Sawin, MD; Vincent C. Traynelis, MD

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

Clinic Fee: \$660

Learning Objectives:

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

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

008

Basics of Spinal Stabilization, Fusion and Instrumentation

Room 28AB, San Diego Convention Center

Co-directors:

Peter Douglas Angevine, MD; Kaushik Das, MD

Faculty:

Edward C. Benzel, MD; Virany H. Hillard, MD; Michael G. Kaiser, MD; Tyler Robert Koski, MD; Eric W. Nottmeier, MD; Naresh P. Patel, MD

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

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

Learning Objectives:

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

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

009

Thoracic and Lumbar Stabilization and Fusion: Indications and Complications

Room 28CD, San Diego Convention Center

Co-directors:

Regis W. Haid Jr., MD; Praveen V. Mummaneni, MD

Faculty:

Dean Chou, MD; R. Patrick Jacob, MD, FACS; Adam S. Kanter, MD; Charles Kuntz IV, MD; Frank La Marca, MD; Paul Park, MD; James C. Robinson, MD; Gregory R. Trost, MD; Michael Y. Wang, MD

A series of didactic lectures and hands-on instruction will illustrate the state-of-the-art in thoracic and lumbar fusion techniques and technology. Discussion will include treatment of degenerative disease and spinal deformity in the thoracolumbar spine. The impact of implant design, technique selection (including minimally invasive

approaches) and biological agents will be discussed.

Clinic Fee: \$450

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, PLF)

010

Technical Management of Intracranial Aneurysms: Site Specific Surgical Anatomy, Operation Intervention and Complication Management

Room 29AB, San Diego Convention Center

Director:

Arthur L. Day, MD, FACS

Faculty:

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

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

Clinic Fee: \$450

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

012

R&F

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

Room 29D, San Diego, Convention Center

Director:

Albert L. Rhoton Jr., MD

This course will provide three-dimensional microsurgical instruction on routes through

the anterior and posterior cerebrum and temporal lobe; anatomy and approaches to the lateral and third ventricles and pineal region; anterior skullbase and cavernous sinus; and transsphenoidal, transmaxillary and transoral approaches.

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

Learning Objectives:

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

- Describe the routes to and through the anterior and posterior cerebrum and temporal lobe
- Discuss anatomy and approaches to the lateral and third ventricles and pineal region
- Discuss anterior and middle skull base including the orbit and cavernous sinus
- Discuss transsphenoidal, transmaxillary and transoral approaches

013

R&F

Interventional Neurovascular Disease: Avoidance and Management Complication

Room 33BC, San Diego Convention Center

Co-directors:

Robert H. Rosenwasser, MD, FACS; Erol Veznedaroglu, MD

Faculty:

Felipe C. Albuquerque, MD; Rocco A. Armonda, MD; Bernard R. Bendok, MD; C. Michael Cawley, MD, FACS; Brian L. Hoh, MD; Michael T. Lawton, MD; Elad I. Levy, MD; Charles J. Prestigiacomo, MD, FACS

A comprehensive discussion of complications and complication avoidance in the endovascular management of cerebral aneurysms, AVMs/AVFs, spinal AVMs, tumor and special problems associated and encountered with treatment in the endovascular suite. Hands on clinic with simulators to follow brief discussions of complication avoidance strategies.

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

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

014

Dynamic Treatments of Degenerative Lumbar Disc Disease

Room 32AB, San Diego Convention Center

Co-directors:

Andrew T. Dailey, MD; Russ P. Nockels, MD

Faculty:

Martin D. Herman, MD, PhD; Brian R. Subach, MD, FACS; William C. Welch, MD

A series of didactic lectures and hands-on instructions will illustrate the state-of-the-art in lumbar interbody fusion techniques and technology. The impact of implant design and biological agents on interbody outcomes will be discussed.

Clinic Fee: \$450

Learning Objectives:

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

- Compare the various surgical approaches used for lumbar interbody fusion
- Evaluate lumbar interbody implant devices and assess the value of emerging technology
- Discuss the role of dynamic posterior stabilization in conjunction with lumbar fusion
- Predict the impact of biological agents such as rhBMP-2 on interbody outcomes

015

Negotiating with Hospitals: Challenging the Experts

Room 24A, San Diego Convention Center

Co-directors:

Deborah L. Benzil, MD; Edie E. Zusman, MD, FACS

Faculty:

Gene H. Barnett, MD, FACS; E. Hunter Dyer,

MD; M. Sean Grady, MD; Gregory B. Lanford, MD

Providing optimal patient care requires neurosurgeons to be available and accessible within the current health care environment. This course will provide case studies of both success and failures from neurosurgeons that negotiated with hospitals. Building on the didactic information presented in previous years, the course will allow participants to gain important insight into how and why strategies succeeded or failed for these experienced neurosurgeons. Each case study evaluates approaches to ensure a 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 didactic discussion during the second part of the highly interactive and results oriented portion of the course.

Clinic Fee: \$450

Learning Objectives:

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

- Assess the direct and indirect financial contribution neurosurgeons make to a hospital and explain administrative “financial-speak” essential to successful negotiations
- Define alternative revenue sources for neurosurgeons in your hospital and community
- Determine practical approaches for solving current dilemmas in neurosurgeon-hospital relationships
- Discuss how to design the business case to bring a new program to your hospital

016

Minimal Access Management of Spinal Disease: Case Reviews with the Experts

Room 31AB, San Diego Convention Center

Co-directors:

Anthony K. Frempong-Boadu, MD; Noel I. Perin, MD, FRCS

Faculty:

Kevin T. Foley, MD; Larry T. Khoo, MD; Bruce E. Mathern, MD; Noel I. Perin, MD, FRCS; Luiz Pimenta, MD, PhD; Paul Santiago, MD; Najeeb M. Thomas, MD

This course is a new format to help diffuse information about Minimal Access surgery through case-based, interactive, and didactic teaching. This completely case-based approach is designed to engage and help the participants explain the thought process that helps determine the faculty's surgical decision making. The cases increase in complexity and scope, altering the scenarios until all come to explain the factors which influence our own surgical practice. As the cases become increasingly complex, the faculty and audience alike are forced to address the difficult, sometimes impossible choices encountered. The goal is for every surgeon who participates to explain the thought process behind how different surgeons, when presented with a surgical dilemma, choose to address a case. Be prepared to participate in helping form a treatment algorithm as to how to address various surgical issues, while focusing on minimally invasive spine surgery and the variety of patients who increasingly desire this form of treatment.

Clinic Fee: \$450

Learning Objectives:

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

- Evaluate and indicate patients for Minimal Access spine surgery
- Discuss what variety of options are reasonable and available to address common spine disorders
- Develop best practice treatment algorithms to appropriately treat patients with Minimal Access spinal approaches (including when to convert to open or to avoid entirely before attempting)

017

Hands-On Peripheral Nerve of the Upper Extremities

Room 30AB, San Diego Convention Center

Co-directors:

Rajiv Midha, MD, MS, FRCS; Robert L. Tiel, MD

Faculty:

John E. McGillicuddy, MD; Robert J. Spinner, MD, FACS; Christopher J. Winfree, MD; Lynda Jun-san Yang, MD, PhD; Eric L. Zager, MD

This hands-on clinic uses cadaver dissection to review clinically relevant anatomy and surgical approaches to the brachial plexus and upper extremity nerves.

Clinic Fee: \$960

Learning Objectives:

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

- Discuss the anatomy of upper extremity nerves
- Explain surgical approaches to upper extremity nerves and the brachial plexus

018

Artificial Cervical Disc Technology

Room 25C, San Diego Convention Center

Director:

Robert J. Hacker, MD

Faculty:

Domagoj Coric, MD; Regis W. Haid Jr., MD; Michael K. Rosner, MD; William R. Taylor, MD

Cervical motion preservation technology is changing the practice of spine surgery outside of the United States and likely will have a similar impact on our practices. This clinic will cover biomechanics, clinical science, patient selection, study results and also provide hands-on experience with devices now in clinical trials.

Clinic Fee: \$450

Learning Objectives:

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

- Discuss the various cervical disc arthroplasty devices and their biomechanical properties
- Discuss the usefulness of this technology for patients with cervical disc disease
- Compare artificial disc technology with cervical fusion from a clinical and hands on standpoint

019

Current Issues and Complexities in Spine Coding

Room 27AB, San Diego Convention Center

Co-directors:

Robert R. Johnson II, MD, FACS;
John A. Wilson, MD, FACS

Faculty:

Mina Foroohar, MD, FACS; William Mitchell, MD; Kim Pollock, RN, MBA, CPC of Karen Zupko & Associates, Inc.

This course will cover physician procedure coding for spine procedures such as laminectomy, discectomy, corpectomy fusion, fracture treatment, tumor removal and spinal injections. We will discuss what procedures and services are included in the global surgical package for these codes and what services may be separately billed.

Clinic Fee: \$450

Learning Objectives:

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

- Describe the four major components of coding spine procedures
- Differentiate what procedures are included in the global surgical package for spine procedure codes
- Explain the use of surgical modifiers and how revenue can be improved by accurate use of these modifiers

020

R&F N&PE**Neurotrauma Critical Care Review and Update for the Practicing Neurosurgeon**

Room 33A, San Diego Convention Center

Co-directors:

Craig H. Rabb, MD; Jamie S. Ullman, MD

Faculty:

Perry A. Ball, MD, FACS; Kathryn Marie Beauchamp, MD; Domenic P. Esposito, MD, PhD; Kevin J. Gibbons, MD, FACS; Philip Andrew Villanueva, MD

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 in the area of non-neuro critical care, including ventilator

management, fluids, nutrition, infectious disease, sedation issues, and DVT prevention.

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

Learning Objectives:

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

- Describe 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
- Discuss cutting edge non-surgical management of traumatic brain injury

PRACTICAL CLINICS

8:00 AM–5:00 PM

021

Update on Tumors for the General Neurosurgeon

Room 28E, San Diego Convention Center

Co-directors:

Jeffrey N. Bruce, MD, FACS;
Andrew T. Parsa, MD, PhD

Faculty:

Manish K. Aghi, MD; Richard C.E. Anderson, MD; Anthony L. Asher, MD; Frederick G. Barker II, MD, FACS; Gene H. Barnett, MD, FACS; William T. Couldwell, MD, PhD; Franco De Monte, MD, FACS; Alexander Golby, MD; John G. Golfinos, MD; Frederick F. Lang Jr., MD; Linda M. Liao, MD, PhD; Russell R. Lonser, MD; Charles Teo, MD

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.

Clinic Fee: \$570

Learning Objectives:

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

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

022

Intracranial Endoscopy: Indications, Techniques, Outcome and Complications

Room 20BC, San Diego Convention Center

Director:

Alan R. Cohen, MD, FACS

Faculty:

Jacques Caemaert, MD; Prof Cleopatra Charalampaki, MD, PhD; Michael R. Gaab, MD, PhD; J. Andre Grotenhuis, MD, PhD; Nakamasa Hayashi, MD, PhD; Carl B. Heilman, MD; Tenoch Herrada-Pineda, MD; Wesley A. King, MD; Christian Matula, MD; Henry W. S. Schroeder, MD, PhD; Theodore H. Schwartz, MD; Mark M. Souweidane, MD; John C. Wellons III, MD

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

Clinic Fee: \$1,500

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

023

N&PE

Head Trauma: Current Treatments and Controversies with Hands-On Practical Session in Brain Monitoring and Techniques

Room 30CD, San Diego Convention Center

Co-directors:

Geoffrey T. Manley, MD, PhD; Shelly D. Timmons, MD, PhD

Faculty:

Edward C. Benzel, MD; M. Ross Bullock, MD, PhD; William M. Coplin, MD; Domenic P. Esposito, MD, FACS; Anthony Marmarou, PhD; Raj K. Narayan, MD; Christopher I. Shaffrey, MD

This clinic emphasizes case studies and covers the significant breadth of the field of neurotrauma and critical care. It will be directed by a private practice neurosurgeon, with emphasis on practical, as well as complex case management issues. In the afternoon session you will have hands on instruction in techniques and devices for ICP monitoring, Parenchymal 02 monitoring and decompressive craniectomy.

Clinic Fee: \$570

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 head injured patient
- Identify the current concepts in dealing with head injured athletes
- Recognize the role of the neurosurgeon in a trauma center and discuss the concept of neurotrauma referral centers

024

N&PE

Decision Making and the Spine Patient for Nurses, APRNs and PAs

Room 30E, San Diego Convention Center

Director:

Andrea L. Strayer, MSN, CNRN

Faculty:

Dean Barone, PA-C, MPAS; Edward C. Benzel, MD; Steven Casha, MD, PhD; Joseph S. Cheng, MD, MS; Marc E. Eichler, MD; Richard P. Schlenk, MD; Christopher I.

Shaffrey, MD; Michael P. Steinmetz, MD; Gregory R. Trost, MD; Nancy Eleanor Villanueva, ANP-C

This course will focus on specific decision making challenges that the nurse, APRN and PA face providing care for spine patients. Topics to be presented include an analysis of radiographic study indication and specifics of study indications; radiographic as well as clinical evaluation of fusion; various injection types, indications, risks and available evidence; new technology including biologics, cervical disc arthroplasty and dynamic stabilization. Presentation of the implications of new technology to practice and appropriate patient selection for operative intervention will provide opportunity for in-depth discussion.

Clinic Fee: \$570

Learning Objectives:

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

- Discuss problem based decision making and differential diagnosis in regards to the spine patient
- Discuss new technologies available including biologics, cervical disc arthroplasty and lumbar spinous process
- Analyze radiographic study indications, the specifics of interpretation and the clinical as well as radiographic evaluation of fusion
- Analyze the various injection types, associated risks and indications as well as the available evidence on injection efficacy
- Discuss new technology and the implications for practice as well as decision making for selecting the right surgery for the right patient

PRACTICAL CLINICS

1:00–5:00 PM

025

Deep Brain Stimulation: Update and New Directions

Room 25C, San Diego Convention Center

Co-directors:

Robert G. Grossman, MD; Stephen B. Tatter, MD, PhD

Faculty:

Aviva Abosch, MD, PhD; Ron L. Alterman,

MD; Jeffrey E. Arle, MD, PhD; Roy A. E. Bakay, MD; Nicholas M. Boulis, MD; Brian H. Kopell, MD; Alon Y. Mogilner, MD, PhD; Joshua M. Rosenow, MD; Ashwini D. Sharan, MD; Philip A. Starr, MD, PhD

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.

Clinic Fee: \$450

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

026

Percutaneous Vertebral Body Stabilization and Augmentation

Room 20D, San Diego Convention Center

Co-directors:

Robert J. Bohinski, MD, PhD; Andrew J. Ringer, MD

Faculty:

John W. German, MD; Michael W. Groff, MD; Ehud Mendel, MD, FACS; William D. Tobler, MD

This clinic will explain percutaneous spinal access techniques and procedures for spinal stabilization including vertebroplasty, kyphoplasty, AxiaLIF and percutaneous instrumentation techniques identifying appropriate patients for this procedure. Participants benefit from hands-on experience in each procedure.

Clinic Fee: \$960

Learning Objectives:

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

- Identify anatomical landmarks and

- approaches for percutaneous spinal access
- Explain the techniques for vertebral body augmentation with vertebroplasty and kyphoplasty
 - Explain the approach for percutaneous pedicle screw fixation
 - Discuss exposure to the percutaneous axial lumbo-sacral fixation technique

027**Spinal Radiosurgery**

Room 24BC, San Diego Convention Center

Co-directors:

Mark H. Bilsky, MD; Peter C. Gerszten, MD, MPH

Faculty:

Lilyana Angelov, MD, FRCS(C); Steven D. Chang, MD; Fraser C. Henderson, MD; Jason P. Sheehan, MD

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.

Clinic Fee: \$450

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 preliminary outcomes after spine radiosurgery
- Explain the relative contraindications to spine radiosurgery

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

Room 25AB, San Diego 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

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.

Clinic Fee: \$660

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

029**Brain Mapping Techniques in Adult and Pediatric Neoplasms and Epilepsy**

Room 28AB, San Diego Convention Center

Co-directors:

Gerald A. Grant, MD; Guy M. McKhann II, MD

Faculty:

Nicholas M. Barbaro, MD; Gene H. Barnett, MD, FACS; Mitchel S. Berger, MD, FACS; William E. Bingaman Jr., MD; Peter M. Black, MD, PhD; Isabelle M. Germano, MD, FACS

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

Clinic Fee: \$570

Learning Objectives:

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

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

030**Thoracic and Lumbar Stabilization and Fusion: Indications and Complications**

Room 28CD, San Diego Convention Center

Co-directors:

Christopher I. Shaffrey, MD; Eric J. Woodard, MD

Faculty:

Christopher Pearson Ames, MD; Sumon Bhattacharjee, MD; Charles L. Branch Jr., MD; Harel Deutsch, MD; Michael G. Kaiser, MD; Laurence D. Rhines, MD; James C. Robinson, MD; Paul D. Sawin, MD; Gregory R. Trost, MD

A series of didactic lectures and hands-on instruction will illustrate the state-of-the-art in thoracic and lumbar fusion techniques and technology. Discussion will include treatment of degenerative disease and spinal deformity in the thoracolumbar spine. The impact of implant design, technique selection (including minimally invasive approaches) and biological agents will be discussed.

Clinic Fee: \$450

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

031**R&F****Choosing and Developing a Neurosurgical Practice**

Room 29C, San Diego Convention Center

Co-directors:

Jonathan A. Friedman, MD; G. Edward Vates, MD, PhD

Faculty:

H. Hunt Batjer, MD, FACS; Lawrence S. Chin, MD, FACS; William T. Couldwell, MD, PhD; Judith Rosman

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.

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

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
- Discuss the components of a successful office practice
- Explain how to evaluate a job opportunity

032

R&F

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

Room 29D, San Diego 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.

Clinic Fee: \$450

This clinic is free to Residents, Fellows 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

033

R&F

Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation

Room 33BC, San Diego Convention Center

Co-directors:

Line Jacques, MD; Robert J. Spinner, MD, FACS

Faculty:

Allan H. Friedman, MD, FACS; Allen H. Maniker, MD; John E. McGillicuddy, MD; Rajiv Midha, MD, MS, FRCS; Robert L. Tiel, MD

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

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

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

034

Management of Cervical Spine Deformity and Instability

Room 31AB, San Diego Convention Center

Co-directors:

Regis W. Haid Jr., MD; Praveen V. Mummaneni, MD

Faculty:

Juan C. Bartolomei, MD; Jay Y. Chun, MD, PhD; Harel Deutsch, MD; Michael W. Groff, MD; Robert F. Heary, MD; Allan D. Levi,

MD, PhD; Jeff Pan, MD; Daniel K. Resnick, MD; Juan Santiago Uribe, MD; Michael Y. Wang, MD

A comprehensive didactic and hands-on (sawbones) clinic on the management of cervical spine deformity and instability. Biomechanical principles and surgical techniques will be demonstrated. Significant time for participant input and interaction is provided.

Clinic Fee: \$450

Learning Objectives:

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

- Discuss options for anterior and posterior cervical fixation
- Discuss indications and selection criteria for fusion and for arthroplasty in the cervical spine
- Explain surgical anatomical principles related to cervical spine instrumentation techniques

035

Neurosurgical Case Coding: E&M, Cranial and Non-Spine Procedures

Room 27AB, San Diego Convention Center

Director:

Robert R. Johnson II, MD, FACS

Faculty:

William Mitchell, MD; Kim Pollock, RN, MBA, CPC of Karen Zupko & Associates, Inc.

This course will cover physician procedure coding for evaluation and management, cranial procedures such as those to treat aneurysms, AVMs, traumatic brain injuries, epilepsy, functional disorders and tumors. The global surgical package for these codes and what services may be separately billed will be reviewed.

Clinic Fee: \$450

Learning Objectives:

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

- Differentiate what procedures are included in the global surgical package for neurosurgical CPT codes from procedures that may be billed separately
- Explain the use of surgical modifiers and how revenue can be improved by accurate

use of these modifiers

- Demonstrate appropriate documentation and coding for evaluation and management services

036 R&F N&PE

Update on Spinal Surgery for the Practicing Neurosurgeon

Room 33A, San Diego Convention Center

Director:

Paul C. McCormick, MD

Faculty:

Peter Douglas Angevine, MD; Michael G. Fehlings, MD, PhD; Daniel K. Resnick, MD

This clinic will provide the practicing clinician with an up-to-date overview of current management strategies of spinal disorders based on a critical analysis of recently published literature. This seminar emphasizes practical management issues based on state-of-the-art evidence.

Clinic Fee: \$450

This clinic is free to Residents, Fellows and Medical Students.

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Identify current management strategies for spinal disorders, including lumbar spinal stenosis, lumbar degenerative disease, cervical myelopathy and radiculopathy, spinal trauma and spinal cord injury, primary and metastatic vertebral tumors and spinal deformity
 - Discuss the most recent data regarding the indications for and comparative effectiveness of new and established spinal procedures and technology such as lumbar and cervical disc arthroplasty, lumbar spinal fusion and neurophysiologic spinal cord monitoring
 - Critically evaluate and apply recently published literature about the treatment of spinal disorders to daily clinical practice decision making

037

Artificial Lumbar Disc Arthroplasty: Biomechanics and Clinical Application

Room 24A, San Diego Convention Center

Director:

Edward C. Benzel, MD

Faculty:

Gordon Duthie Donald, MD; Fred H. Geisler, MD, PhD; John C. Liu, MD; Bruce E. Mathern, MD; Charles S. Theofilos, MD, PA

Biomechanics of lumbar spine comparing fusion with an artificial disc will be presented along with patient selection. Complication avoidance and management will be addressed.

Clinic Fee: \$450

Learning Objectives:

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

- Compare differences between biomechanics of fusion and artificial disc
- Discuss instantaneous axis of rotation of lumbar spine and how it relates to total joint arthroplasty
- Discuss the patient selection and preoperative evaluation
- Review the details of the surgical procedure as they relate to complication avoidance
- Describe the postoperative care with particular reference to management of complications

038

Current and Future Trends in Lumbar Interbody Fusion

Room 32AB, San Diego Convention Center

Director:

Russ P. Nockels, MD

Faculty:

Christopher J. Barry, MD; James S. Harrop, MD; Kee D. Kim, MD; Charles Kuntz IV, MD; Richard P. Schlenk, MD

A series of didactic lectures and hands-on instruction will illustrate the state-of-the-art lumbar interbody fusion techniques and technology. The impact of implant design and biological agents on interbody outcomes will be discussed.

Clinic Fee: \$450

Learning Objectives:

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

- Compare the various surgical approaches used for interbody lumbar fusion
- Evaluate lumbar interbody implant devices and assess the value of emerging technology
- Predict the impact of biological agents such as rh BMP-2 on interbody outcomes

OPENING RECEPTION

San Diego Convention Center Terrace
6:30–8:30 PM

The Annual Meeting Planning Committee has planned an outdoor California Terrace Party featuring San Diego cuisine and our very own Neurosurgical Jazz Quintet. This Opening Reception is certain to be a memorable evening, with a great backdrop to socialize and network with friends and colleagues, old and new! In addition, many exciting daily activities have been planned for your guests. See page 23 for more information!

BREAKFAST FOR SEMINAR PARTICIPANTS

20D Foyer and Center Terrace, San Diego Convention Center
6:45–7:30 AM

EXHIBIT HOURS

Exhibit Halls E-H, San Diego Convention Center
9:00 AM–4:00 PM

BEVERAGE BREAKS

9:00–9:45 AM, Exhibit Hall
2:45–3:30 PM, Exhibit Hall

LUNCH IN THE EXHIBIT HALL

1:15–2:00 PM

BREAKFAST SEMINARS

7:30–9:30 AM

Fee: \$100 each, includes breakfast

101

ABNS Board Preparation: What You Must Know

Room 30CD, San Diego Convention Center

Moderator:

Daniel Louis Barrow, MD

Panelists:

William T. Couldwell, MD, PhD; Tae Sung Park, 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

102

Multidisciplinary Management of Cerebral AVMs

R&F

Room 28A, San Diego Convention Center

Moderator:

Neil A. Martin, MD

Panelists:

Michael T. Lawton, MD; Bruce E. Pollock, MD; Robert H. Rosenwasser, MD, FACS; Gary K. Steinberg, MD, PhD

This clinic is free to Residents, Fellows and Medical Students.

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

Learning Objectives:

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

- Discuss indications for treatment of patients with AVMs

103

Suprasellar and Juxtaseellar Tumors

Room 25A, San Diego Convention Center

Moderator:

Michael W. McDermott, MD

Panelists:

William T. Couldwell, MD, PhD; Theodore H. Schwartz, MD; Juraj Steno, MD, PhD; Harry R. van Loveren, MD

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

Learning Objectives:

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

- Review the options for surgical approaches to tuberculom sellae meningiomas
- Review the bifrontal extended frontal approach
- Review visual outcomes following surgery for tuberculom sellae meningiomas
- Review outcomes for children after surgery for craniopharyngiomas
- Review outcomes of endoscopic transsphenoidal approaches

104

Foraminal and Far Lateral Lumbar Disc Herniations

Room 25B, San Diego Convention Center

Moderator:

John A. Jane Sr., MD, PhD

Panelists:

Harel Deutsch, MD; Benoit Goulet, MD, FRCS(C); Patrick W. Hitchon, MD; 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

105

Lumbar Interbody Fusion

Room 25C, San Diego Convention Center

Moderator:

Eric J. Woodard, MD

Panelists:

Christopher J. Barry, MD; Catherine J. Gallo, MD; Nicholas Theodore, MD; Kenneth S. Yonemura, MD

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

Learning Objectives:

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

- Describe the indications for lumbar interbody fusion and the appropriate investigations to consider in the workup of patients

- Explain the advantages and disadvantages of various lumbar interbody fusion techniques, including minimally invasive options
- Explain approaches to minimize complications
- Discuss the relevant approach anatomy related to LIF surgery
- Discuss the latest technical advances related to LIF surgery

106**Surgical Treatment of Parkinson's Disease**

Room 28B, San Diego Convention Center

Moderator:

Philip A. Starr, MD, PhD

Panelists:

Aviva Abosch, MD, PhD; Roy A. E. Bakay, MD; Kenneth A. Follett, MD, PhD; Robert R. Goodman, MD, PhD

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

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Identify potential brain targets for deep brain stimulation in Parkinson's disease
 - Discuss technical alternatives in placement of DBS electrodes
 - Review complications of DBS for Parkinson's disease

107**Current and Future Treatments for Hydrocephalus**

Room 28C, San Diego Convention Center

Moderator:

Mark G. Luciano, MD, PhD

Panelists:

James M. Drake, MD; Saadi Ghatan, MD; Abhaya Vivek Kulkarni, MD, FRCS

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

108**Craniofacial Surgery: The History of its Art and Science**

Room 24A, San Diego Convention Center

Moderator:

Charles J. Prestigiacomo, MD, FACS

Panelists:

Peter W. Carmel, MD; Michael S. B. Edwards, MD, FACS; James T. Goodrich, MD, PhD

This seminar will explore the history of craniofacial surgery. Though an extensive and complex history in its own right, the periods of this history can be studied as the period before the work and innovations of Dr. Tessier's career and contributions and the period and innovations following.

Learning Objectives:

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

- Describe and explain the evolution of craniofacial surgery before Dr. Tessier's contributions
- Describe Dr. Tessier's career and contributions to the field and the ultimate development of this as a distinct discipline
- Describe the various contributors and contributions to craniofacial surgery after Dr. Tessier

109**Management of Vasospasm**

Room 28D, San Diego Convention Center

Moderator:

E. Sander Connolly Jr., MD

Panelists:

Peter David Le Roux, MD; R. Loch

Macdonald, MD, PhD; Christina M. Stewart-Amidei, MSNRN, CCRN; Rafael J. Tamargo, MD; Erol Veznedaroglu, MD; H. Richard Winn, MD

This seminar is free to Residents, Fellows and Medical Students.

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

Learning Objectives:

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

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

110**Management of Adult Scoliosis****N&PE**

Room 28E, San Diego Convention Center

Moderator:

Christopher I. Shaffrey, MD

Panelists:

Peter Douglas Angevine, MD; Robert F. Heary, MD; Stephen L. Ondra, MD

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

Learning Objectives:

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

- Identify conditions associated with congenital and neuromuscular scoliosis
- Discuss diagnoses of the various types of pediatric and adult deformities
- Identify patients requiring bracing or surgical intervention

111

Intramedullary Spinal Cord Tumors

Room 29A, San Diego Convention Center

Moderator:

Paul C. McCormick, MD

Panelists:

Albino P. Bricolo, MD; Jacques Brotchi, MD, PhD; George I. Jallo, MD; Russell R. Lonser, MD

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

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Evaluate methods and strategies to reduce peri-operative complications
 - Identify operative techniques to optimize safe achievement of optimal outcomes

112

Building a Comprehensive Spine Center

Room 29B, San Diego Convention Center

Moderator:

E. Hunter Dyer, MD

Panelists:

Christopher J. Barry, MD; Mark D. D'Alise, MD, FACS; Kevin T. Foley, 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

113

Syringomyelia: Pathophysiology and Treatment Approaches

Room 29C, San Diego Convention Center

Moderator:

Edward H. Oldfield, MD

Panelists:

Nicholas M. Barbaro, MD; Ulrich Batzdorf, MD; Karin M. Muraszko, MD

This seminar reviews the biology and pathophysiology of syringomyelia as a basis for diagnosis and treatment. Participants will be able to discuss the indications for surgery, the pros and cons of different operative approaches and current opinion concerning treatments.

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Discuss the indications for and selection of surgical approach to syringomyelia
 - Discuss the pros and cons of different operative approaches for syringomyelia
 - Discuss current options concerning optimal surgical techniques for syringomyelia
 - Discuss the pathophysiology underlying Syringomyelia

114

R&F N&PE

Management of Asymptomatic Vascular Lesion

Room 27AB, San Diego Convention Center

Moderator:

Warren R. Selman, MD

Panelists:

David Chalif, MD, FACS; Richard S.C. Kerr, MD; Robert H. Rosenwasser, MD, FACS; Robert A. Solomon, MD; Robert F. Spetzler, MD

This seminar is free to Residents, Fellows and Medical Students.

This seminar will address decision making and surgical technique for asymptomatic AVMs, aneurysms, carotid disease and intracerebral stenosis/occlusion.

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Formulate treatment plans for silent AVMs
 - Formulate treatment plans for unruptured aneurysms
 - Formulate treatment plans for asymptomatic vascular occlusive disease

115

R&F

Neurosurgical Management of Intractable Pain

Room 33B, San Diego Convention Center

Moderator:

Kim J. Burchiel, MD, FACS

Panelists:

Giovanni Broggi, MD; Robert M. Levy, MD, PhD; Konstantin V. Slavin, MD

This clinic is free to Residents, Fellows and Medical Students.

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

116

Low-Grade Gliomas

Room 33C, San Diego Convention Center

Moderator:

Mitchel S. Berger, MD, FACS

Panelists:

Hugues Duffau, MD; Miguel Angel Arraez Sanchez, MD; Johannes Schramm, MD, Prof; Jeffrey H. Wisoff, MD

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

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Describe the range of pathologies included in low-grade gliomas

- Distinguish between different management strategies for low-grade gliomas

117**Spinal Surgical Challenges**

Room 32A, San Diego Convention Center

Moderator:

Edward C. Benzel, MD

Panelists:

Regis W. Haid Jr., MD; Volker K. H. Sonntag, MD; Vincent C. Traynelis, MD

This seminar is designed to present challenging cases that experienced faculty encountered.

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

118**Management of Pediatric Spinal Column Disorders**

Room 33A, San Diego Convention Center

Moderator:

Arnold H. Menezes, MD

Panelists:

Richard C. E. Anderson, MD; Douglas L. Brockmeyer, MD; Dachling Pang, MD

This seminar will cover the most common congenital, traumatic and neoplastic disorders of the pediatric spinal column, along with their management. Emphasis will be placed on explaining basic biomechanical principles of the pediatric spine.

Learning Objectives:

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

- Describe indications for surgery in pediatric spinal problems
- Review basic biomechanical principles of the pediatric spine

119**Cerebral Trauma State-of-the-Art Treatment**

Room 31ABC, San Diego Convention Center

Moderator:

Alex B. Valadka, MD

Panelists:

Austin R. Colohan, MD, FACS; Geoffrey T. Manley, MD, PhD; David O. Okonkwo, MD, PhD; Jamie S. Ullman, MD

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

Learning Objectives:

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

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

120**The Spectrum of Adjuvant Therapy for Brain Tumors**

Room 30E, San Diego Convention Center

Moderator:

Raymond Sawaya, MD

Panelists:

Jeffrey N. Bruce, MD, FACS; Amy B. Heimberger, MD; Randy Lynn Jensen, MD, PhD; James M. Markert Jr., MD

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:

- Describe current scientific advances used to diagnose and treat brain tumors
- 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

121**Microvascular Anatomy as a Guide to Better Surgery**

Room 32B, San Diego Convention Center

Moderator:

Evandro De Oliveira, MD, PhD

Panelists:

Albert L. Rhoton Jr., MD; Ugur Ture, MD

This seminar will review the anatomy, pathology and operative approaches to vascular, neoplastic and compressive lesions involving the intracranial vascular structures.

Learning Objectives:

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

- Describe the microsurgical anatomy of the vascular system in the cranium and skull base
- Diagnose pathologic lesions involving the vascular system
- Select operative approaches to vascular lesions of the brain, skull base and Circle of Willis

122**New and Evolving Technologies for Minimally Invasive Surgery of the Lumbar Disc**

Room 29D, San Diego Convention Center

Moderator:

Richard G. Fessler, MD, PhD

Panelists:

Charles L. Branch Jr., MD; Dean Chou, MD; Langston T. Holly, MD; Larry T. Khoo, MD

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

Learning Objectives:

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

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

123

N&PE

Pediatric Head Injury

Room 30AB, San Diego Convention Center

Moderator:

Thomas G. Luerssen, MD

Panelists:

Laurie L. Ackerman, MD; Ann-Christine Duhaime, MD; Hugh J. L. Garton, MD, MHSc

This seminar will review the current issues surrounding the diagnosis and management of traumatic brain surgery in children. The panel will focus on unique diagnosis and therapeutic strategies.

Learning Objectives:

- After completing this educational activity, participants should be able to:
- Recognize current issues specifically related to pediatric brain injury
 - Integrate or diagnose specific management strategies in pediatric head injury

PLENARY SESSION I

9:45 AM–1:00 PM

Exhibit Hall D, San Diego Convention Center

Moderators:

James R. Bean, MD; E. Sander Connolly Jr., MD

RICHARD C. SCHNEIDER LECTURE

9:50–10:24 AM

Introduction By:

James R. Bean, MD

Shaping Neurosurgery’s Future: A Global Enterprise

Speaker:

Edward R. Laws Jr., MD

AN IMPORTANT ANNOUNCEMENT FROM JAMES R. BEAN, MD

600

10:25–10:39 AM

One Year Outcomes of the STASCIS Study: A Prospective, Multicenter Trial to Evaluate the Role and Timing of Decompression in Patients with Cervical Spinal Cord Injury

Authors:

Michael G. Fehlings, MD, PhD, (Toronto,

Canada); Alexander Vaccaro, MD (Philadelphia, PA); Bizhan Aarabi, MD (Baltimore, MD); Christopher Shaffrey, MD (Charlottesville, VA); Marcel Dvorak, MD; Charles Fisher, MD (Vancouver, Canada); Paul Arnold, MD (Kansas City, KS); Eric Massicotte, MD; Raja Rampersaud, MD; Stephen Lewis, MD (Toronto, Canada)

Discussant:

Paul C. McCormick, MD

601

10:40–10:54 AM

Long-Term Clinical Outcomes After Stereotactic Radiosurgery for Idiopathic Trigeminal Neuralgia

Authors:

Oscar Zorro, MD; Javier Lobato-Polo, MD; Hideyuki Kano, MD, PhD; John C. Flickinger, MD; L Dade Lunsford, MD; Douglas Kondziolka, MD, MSc (Pittsburgh, PA)

Discussant:

Kim J. Burchiel, MD, FACS

HUNT WILSON LECTURE

10:55–11:29 AM

Introduction By:

James R. Bean, MD

Cross-Talk & Developmental Programs: A Key to Stem Cell-Mediated Approaches to CNS Pathology

Speaker:

Evan Snyder, MD, PhD

602

11:30–11:44 AM

A Study of Idiopathic Syringomyelia in the Pediatric Population: Natural Progression and Implications for Management

Authors:

Suresh N. Magge, MD (Boston, MA); Samer Fadl, BS (New Haven, CT); Lance S. Governale, MD; Stephen V. Nalbach, MD; Edward R. Smith, MD (Boston, MA)

Discussant:

Karin M. Muraszko, MD

603

11:45–11:59 AM

Best International Abstract Surgical Treatment for Hypertensive Intracerebral Hemorrhage in 2464 Patients-A Multicenter Single-Blind Controlled Trial in China Mainland

Author:

Jizong Zhao, MD, Prof (Beijing, China)

Discussant:

Alexander D. Mendelow, FRCS, PhD

604

12:00–12:14 PM

Reversal of Chronic Progressive Hearing Loss in Patients with Neurofibromatosis Type 2 Using Bevacizumab

Authors:

Scott Plotkin, MD, PhD; Emmanuelle di Tomaso, PhD; Anat Stemmer-Rachamimov, MD; Alma G. Sorensen, MD; Rakesh Jain, PhD; Chris Halpin, PhD; Frederick G. Barker II, MD, FACS (Boston, MA)

Discussant:

B. Gregory Thompson Jr., MD

NEUROSURGERY RESEARCH AND EDUCATION FOUNDATION (NREF) GRANT PRESENTATION

12:15–12:19 PM

Speaker:

Griffith R. Harsh IV, MD

CUSHING MEDALIST

12:20–12:24 PM

Introduction By:

James R. Bean, MD

Speaker:

Edward H. Oldfield, MD

CUSHING ORATION

12:25–1:00 PM

Introduction By:

James R. Bean, MD

Speaker:

Uwe Reinhardt, PhD

128 **N&PE****Nurses Luncheon**

Room 33A, San Diego Convention Center

1:00–2:45 PM**Moderator:**

Ellen Barker, MSN, APN

Aneurysm Surgery**Speaker:**

Anil Nanda, MD, FACS

127 **N&PE****YNS Luncheon**

Room 29BCD, San Diego Convention Center

1:00–2:45 PM**Moderator:**

Jonathan A. Friedman, MD

The Art of Balance**Speaker:**

Frederick B. Meyer, MD

AFTERNOON SEMINAR**500** **N&PE****Neurotrauma: Advancements in Critical Care**

Room 25B, San Diego Convention Center

2:00–5:00 PM**Fee:** \$100 for Doctors.

Free for N&PE

Moderator:

Twyila Lay, NP, MS

Speakers:

Marianne E. Langlois, PA-C; Geoffrey T. Manley, MD, PhD; Shirley I. Stiver, MD, PhD

See page 25 for more details.

SCIENTIFIC SESSION I—TUMORRoom 20BC, San Diego Convention Center
2:45–5:15 PM

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**2:45–3:15 PM****Introduction By:**

Michael W. McDermott, MD

Viral Vectors for Tumor Therapy**Speaker:**

Robert L. Martuza, MD

605 **3:16–3:30 PM****Hearing Outcomes After Radiosurgery for Vestibular Schwannomas: Gamma Knife versus CyberKnife****Author:**

Randall W. Porter, MD (Phoenix, AZ)

Discussant:

William A. Friedman, MD, FACS

606 **3:31–3:45 PM****Leksell Radiosurgery Award
A Systematic Analysis of Hearing and Facial Outcomes after Gamma Knife Radiosurgery for Vestibular Schwannoma****Authors:**

Isaac Yang, MD; Michael Sughrue, MD; Derrick Aranda, MD; Seunggu J. Han, BS; Sravana Chennupati, BA; Andrew T. Parsa, MD, PhD (San Francisco, CA)

Discussant:

William A. Friedman, MD, FACS

607 **3:46–4:00 PM****National Brain Tumor Society Mahaley Award
Phase I Trial of Topotecan by Convection Enhanced Delivery for Recurrent Malignant Gliomas****Authors:**

Jeffrey N. Bruce, MD, FACS; Robert L. Fine, MD; Peter Canoll, MD, PhD; Michael B. Sisti, MD; Guy M. McKhann II, MD; Casilda Balmaceda, MD; Aaron Tannenbaum, BA; Benjamin C. Kennedy, BA; Steven S. Rosenfeld, MD, PhD; Steve A. Sands, PhD; Rose Lai, MD; Candix L. Yanes, RN; Robert L. DeLaPaz, MD (New York, NY)

Discussant:

Edward H. Oldfield, MD

608 **4:01–4:15 PM****American Brain Tumor Association Young Investigator Award
In Vitro and In Vivo Targeted Delivery of Controlled-Release Nanoparticles to High Grade Gliomas Using Contrast Agent Microbubbles and High-Intensity Focused Ultrasound****Authors:**

Jason P. Sheehan, MD, PhD; Caitlin Burke, BS; Richard Price, PhD (Charlottesville, VA)

Discussant:

Michael Lim, MD

609 **4:16–4:30 PM****Endogenous Neural Precursors May Suppress Glioma Stem Cells By Release of BMP7****Authors:**

Michael Synowitz, MD; Sridar Chirasani, PhD; Alexander Sternjak, PhD; Daniel Besser, PhD; Stefan Momma, PhD; Peter Vajkoczy, MD; Helmut Kettenmann, PhD; Rainer Glass, PhD (Berlin, Germany)

Discussant:

Cameron Walter Brennan, MD

610 **4:31–4:45 PM****Poor Coverage as a Possible Explanation for the Low Efficacy Results with CED: Simulation Analysis of Patients from the PRECISE Study****Authors:**

John H. Sampson, MD, PhD (Durham, NC); Christoph Pedain, PhD; Eva Wembacher-Schröder; Inmaculada Rodriguez-Ponce, PhD (Feldkirchen, Germany); Manfred Westphal, MD, PhD (Hamburg-Eppendorf, Germany); Sandeep Kunwar, MD, PhD (San Francisco, CA); Michael A. Vogelbaum, MD, PhD (Cleveland, OH); Raghu Raghavan, PhD; Martin Brady, PhD (Baltimore, MD); Allan H. Friedman, MD; Henry S. Friedman, MD; David A. Reardon, MD; Darell D. Bigner, MD, PhD (Durham, NC); Ira Pastan, MD (Bethesda, MD); Stephan Mittermeyer (Feldkirchen, Germany); Roland Goldbrunner, MD, PhD (Munich, Germany); Philipp G. Tanner, MD (Germany); David Croteau (Lake Bluff, IL); Raj Puri, MD, PhD (Bethesda, MD)

Discussant:

Stephen B. Tatter, MD, PhD

611 4:46–5:00 PM

Springer Journal of Neuro-Oncology Award

In Vivo Hand-Held Confocal Microscopy for Neurosurgery: Results in an Experimental GBM Model

Authors:

Tejas Sankar, MD; Jennifer Eschbacher, MD; Stephen W. Coons, MD; Adrienne C. Scheck, PhD; Peter Nakaji, MD; Robert F. Spetzler, MD; Mark C. Preul, MD (Phoenix, AZ)

Discussant:

David W. Roberts, MD

612 5:01–5:15 PM

Integra Foundation Award

Embolization of Skullbase Meningiomas and Feeding Vessels Arising from the Internal Carotid Artery: Feasibility and Morbidity in a Series of 262 Consecutive Meningioma Patients

Authors:

James Waldron, MD; Steven Hetts, MD; Isaac Yang, MD; Christopher Dowd, MD; Michael W. McDermott, MD; Andrew T. Parsa, MD, PhD (San Francisco, CA)

Discussant:

Jacques J. Morcos, MD, FRCS

SCIENTIFIC SESSION II—SPINE

Room 20D, San Diego Convention Center
2:45–5:15 PM

This session will focus on innovations in the diagnosis, management and treatment of spinal neurosurgery. Innovations which have been developed in the last twelve months will be presented.

Moderator:

Daniel K. Resnick, MD

613 2:45–2:59 PM

Surgical Treatment of Spinal Arteriovenous Fistulas: A Consecutive Series of 154 Patients

Authors:

Giuseppe Lanzino, MD; Andrea Saladino, MD; John L.D. Atkinson, MD; David G. Piegras, MD; W. Richard Marsh, MD;

William E. Krauss, MD; Fredric B. Meyer, MD; Anne Wagenbach, RN, CNP; John I. Lane, MD (Rochester, MN)

Discussant:

Elad I. Levy, MD

614 3:00–3:14 PM

Efficacy and Safety of Tranexamic Acid in Spine Surgery: A Randomized Placebo-Controlled Study

Authors:

Sherif M. Elwatidy, FRCS, PhD; El-Dawlatly, Ahmed Turkistani Essam Elgamel, Zain Jamjoom, Amro Hazem, Abdelazee; Essam Elgamel, DR (Saudi Arabia, Riyadh)

Discussant:

Stephen L. Ondra, MD

INVITED SPEAKER

3:15–3:45 PM

Current Surgical Management of Spinal Neoplasms

Ziya L. Gokaslan, MD, FACS

615 3:46–4:00 PM

Solely Endoscopic Suboccipital Craniectomy and Cervical Laminectomy for Treatment of Chiari Malformation Type 1: A Consecutive Series of the First 100 Cases

Author:

Xiao Di, MD, PhD (Cleveland, OH)

Discussant:

Arnold H. Menezes, MD

616 4:01–4:15 PM

The Role of Preoperative Transarterial Embolization in Spinal Tumors: A Large Single Center Experience

Authors:

Ruth Thiex, MD, PhD; Mitchel B. Harris, MD; Kai U. Frerichs, MD (Boston, MA)

Discussant:

Ziya L. Gokaslan, MD, FACS

617 4:16–4:30 PM

Formation of Painful Seroma after the Use of rhbmp-2 in Posterolateral Spine Fusions

Authors:

Mark P. Garrett, MD; Kumar Kakarla, MD; Randall Porter, MD; Volker K. H. Sonntag, MD (Phoenix, AZ)

Discussant:

Michael G. Kaiser, MD, FACS

618 4:31–4:45 PM

C2 Neurectomy During Atlanto-Axial Instrumented Fusion in the Elderly: Patient Satisfaction and Surgical Outcome

Authors:

D. Kojo Hamilton, MD; Charles A. Sansur, MD; Aaron S. Dumont, MD; Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD (Charlottesville, VA)

Discussant:

Vincent C. Traynelis, MD

619 4:46–5:00 PM

Anti-Inflammatory Effect of Taurine in Spinal Cord Injury in Mice

Authors:

Koji Osuka, MD, PhD; Yasuhiro Nakajima, MD; Yukio Seki, MD, PhD; Toshihiko Wakabayashi, MD, PhD; Makasazu Takayasu, MD, PhD (Aichi, Japan)

Discussant:

Christopher B. Shields, MD, FRCS(C)

620 5:01–5:15 PM

Results of Interspinous Process Distraction Device Placement: 2 Year Follow-Up

Authors:

Shashikant Patil, MD; Rachael Bates, BS; Pegah Hosseini, BS; Anil Nanda, MD, FACS (Shreveport, LA)

Discussant:

Volker K. H. Sonntag, MD

SCIENTIFIC SESSION III— STEREOTACTIC AND FUNCTIONAL

Room 31ABC, San Diego Convention Center
2:45–5:15 PM

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.

Moderator:

Philip A. Starr, MD, PhD

621 2:45–2:59 PM

Gildenberg S&F Resident Award Comparisons of Human Embryonic Stem Cells (hESC) and Human Umbilical Cord Blood Stem Cell (hUCB) in Parkinson's Disease

Authors:

Adam Smith, MD; Mary B. Newman, PhD;
Leo Kelly, BA; Roy Bakay, MD (Chicago, IL)

Discussant:

Daniel A. Lim, MD, PhD

622 3:00–3:14 PM

A Systematic Analysis of the Critical Variables for Success in Therapeutic Human Cortical Stimulation

Authors:

Robert M. Levy, MD, PhD; Jonathon
Lebovitz, MS; Sara J. Gorsky, BA; Todd
Parrish, PhD (Chicago, IL)

Discussant:

Matthew A. Howard III, MD

623 3:15–3:29 PM

Considerations Regarding Heating of Deep Brain Stimulation Leads During 3.0 Tesla Magnetic Resonance Imaging

Authors:

Joshua A. Klemp, MD; Gregory Onyszchuk,
PhD; Jules M. Nazzaro, MD (Kansas City,
KS)

Discussant:

Ali R. Rezaei, MD

624 3:30–3:44 PM

The Effect of Subthalamic Nucleus High Frequency Stimulation on the Contralateral Subthalamic Nucleus

Authors:

Jules M. Nazzaro, MD; Joshua A. Klemp,
MD; Larry W. Ridings, MD; Kelly E. Lyons,
PhD; Rajesh Pahwa, MD (Kansas City, KS);
Peter Novak, MD, PhD (Worcester, MA)

Discussant:

Roy A. E. Bakay, MD

INVITED SPEAKER

3:45–4:15 PM

How Much to Resect in Surgery for Temporal Lobe Epilepsy: Concepts, Trials, Findings

Johannes Schramm, MD

625 4:16–4:30 PM

Prospective Comparison of Posterior Fossa Exploration and Radiosurgery as Primary Surgery for Patients with Typical Trigeminal Neuralgia

Authors:

Bruce E. Pollock, MD; Kimberly A.
Schoeberl, RN (Rochester, MN)

Discussant:

Kenneth A. Follett, MD, PhD

626 4:31–4:45 PM

The Modulation of Human Nucleus Accumbens Neurons During Goal Oriented Behavior

Authors:

Jason L. Gerrard, MD, PhD; John T. Gale,
PhD; Felipe A. Jain, MD; Emad N. Eskandar,
MD (Boston, MA)

Discussant:

Guy M. McKhann II, MD

627 4:46–5:00 PM

Single-Tensor Versus Two-Tensor Method in Diffusion Tensor Tractography to Demonstrate the Hand and Face Motor Fibers for Surgical Planning

Authors:

Alireza Radmanesh, MD; Stephen Whalen,
BS; Amir A. Zamani, MD; Ferenc A. Jolesz,
MD; Alexandra J. Golby, MD (Boston, MA)

Discussant:

Shekar N. Kurpad, MD, PhD

628 5:01–5:15 PM

Stereotactic Radiosurgical Treatment of Cranial and Spinal Hemangioblastomas

Authors:

Steven D. Chang, MD; Jason Moss, BS; Scott
G. Soltys, MD; Iris C. Gibbs, MD; John R.
Adler, MD (Stanford, CA)

Discussant:

Russell R. Lonser, MD

SCIENTIFIC SESSION IV— PEDIATRICS

Room 20A, San Diego Convention Center
2:45–5:15 PM

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.

Moderator:

Jeffrey H. Wisoff, MD

630 2:45–2:59 PM

Seizure Control Outcomes after Surgical Resection of Dysembryoplastic Neuroepithelial Tumor in 50 Patients

Authors:

Edward F. Chang, MD; Catherine Christie,
MD, MPH; Tarik Tihan, MD; Nalin Gupta,
MD, PhD; Mitchel S. Berger, MD; Nicholas
M. Barbaro, MD (San Francisco, CA)

Discussant:

James T. Rutka, MD, PhD

631 3:00–3:14 PM

Ventriculoperitoneal Shunt after Previous Endoscopic Third Ventriculostomy: Does ETV Improve Shunt Survival?

Authors:

Ashutosh Singhal, MD; Tia Liu, BSC; Paul
Steinbok, FRCS; D. Douglas Cochrane, MD
(Vancouver, Canada)

Discussant:

Alan R. Cohen, MD, FACS

632 3:15–3:29 PM

Is Endothelial Nitric Oxide Synthase Gene Mutation Risk Factor in the Etiology of Intraventricular Hemorrhage?

Authors:

Prasad S. Vannemreddy, MD; Krishna Yanamandra, PhD; Christina Notarianni, MD; Dawn Napper, BS; Joseph A. Bocchini, Jr., MD (Shreveport, LA)

Discussant:

Michael Lee Levy, MD, PhD

633 3:30–3:44 PM

Ventriculopleural Shunts in Children: A Single Institution's 30-year Experience

Authors:

Parham Yashar, MD; Cherisse Berry, MD; Gabriel Zada, MD; J. Gordon McComb, MD (Los Angeles, CA)

Discussant:

James M. Drake, MD

634 3:45–3:59 PM

Neuropsychological and Seizure Free Outcomes in Pediatric Patients Surgically Treated for Hippocampal Sclerosis

Authors:

Sumeet Vadera, MD; Michael Sather, MD; Julie Chen, MD; Jorge Gonzalez-Martinez, MD, PhD; William Bingaman, MD (Cleveland, OH)

Discussant:

Frederick A. Boop, MD, FACS

635 4:00–4:14 PM

Trans-Sutural Distraction Osteogenesis: New Operative Method in Craniosynostosis

Authors:

Soo Han Yoon, MD, PhD; Dong Ha Park, MD, PhD (Republic of Korea, Suwon)

Discussant:

James T. Goodrich, MD, PhD

INVITED SPEAKER

4:15–4:45 PM

Head Injury Management in Perspective: What Things Really Make a Difference

Ann-Christine Duhaime, MD

636 4:46–5:00 PM

Advocacy for Transition of Spina Bifida Adolescence to Adult Healthcare

Authors:

Dianna Blevins, RN, MSN; Jogi V. Pattisapu, MD, FACS; Suzanne McKee, RN; Gregory Olavarria, MD; Robyn Rhoades, RN (Orlando, FL)

Discussant:

Thomas G. Luerssen, MD

637 5:01–5:15 PM

Morphologic Intracranial Pressure Waveform Analysis in the Setting of Ventricular Enlargement

Authors:

Sandi Lam, MD; Shadnaz Asgari, PhD; Xiao Hu, PhD; Marvin Bergsneider, MD (Los Angeles, CA)

Discussant:

James M. Drake, MD

SCIENTIFIC SESSION V— CEREBROVASCULAR

Room 30CD, San Diego Convention Center 2:45–5:15 PM

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.

Moderator:

Jacques J. Morcos, MD, FRCS

638 2:45–2:59 PM

Cerebral Hyperglycolysis in Patients with Poor-Grade Subarachnoid Hemorrhage: A Combined Microdialysis and Brain Tissue Oxygen Tension Study

Authors:

Andrew Milby, BS; Mauro Oddo, MD; H. Isaac Chen, MD; Suzanne Frangos, RN;

Eileen MacMurtrie, MSN, RN; Eileen Maloney-Wilensky, MSN, RN; Michael Stiefel, MD, PhD; W. Andrew Kofke, MD; Joshua M. Levine, MD; Peter D. Le Roux, MD (Philadelphia, PA)

Discussant:

David W. Newell, MD

639 3:00–3:14 PM

CyberKnife Radiosurgery for Intramedullary Spinal Arteriovenous Malformations

Authors:

Robert L. Dodd, MD, PhD; Gaurav Gupta, MSN, ACNP; Iris C. Gibbs, MD; Steven D. Chang, MD; John R. Adler, MD (Palo Alto, CA)

Discussant:

Robert F. Spetzler, MD

640 3:15–3:29 PM

Endovascular Treatment or Neurosurgical Clipping of Ruptured Intracranial Aneurysms: Effect on Angiographic Vasospasm, Delayed Ischemic Neurological Deficit and Cerebral Infarction

Authors:

Aaron S. Dumont, MD; R. Webster Crowley, MD; Stephen J. Monteith, MD (Charlottesville, VA); Don Ilodigwe, PhD; Julian Spears, MD (Toronto, Canada); Neal F. Kassell, MD (Charlottesville, VA); R. Loch MacDonald, MD, PhD (Toronto, Canada)

Discussant:

Michael T. Lawton, MD

641 3:30–3:44 PM

SARIS (Stent-Assisted Recanalization in Ischemic Stroke): Final Mid-Term Outcomes

Authors:

J. Mocco, MD, MS; Kenneth V. Snyder, MD, PhD; Adnan H. Siddiqui, MD, PhD; L. Nelson Hopkins, MD; Elad I. Levy, MD (Buffalo, NY)

Discussant:

Cameron G. McDougall, MD

642 3:45–3:59 PM**Natural Course, Management Risks and Quality of Life of Patients with Unruptured Cerebral Aneurysms: Japan Unruptured Cerebral Aneurysm Study II (UCAS II)****Authors:**

Akio Morita, MD, PhD; Toshikazu Kimura, MD (Tokyo, Japan); Yukinori Akiyama, MD, PhD (Sapporo, Japan); Yoshihide Nagamine, MD, PhD (Sendai, Japan); Hiroyuki Kurita, MD, PhD (Tokyo, Japan); Daiji Kataoka, MD, PhD (Kyoto, Japan); Kazuhiko Nozaki, MD, PhD (Otsu, Japan); Masaki Nishimura, MD (Kyoto, Japan); Kouji Tokunaga, MD, PhD (Okayama, Japan); Naoki Kitagawa, MD, PhD (Tokyo, Japan)

Discussant:

Robert A. Solomon, MD

643 4:00–4:14 PM**Mannose-Binding Lectin Polymorphisms Predict Neuropsychometric Outcome Following Carotid Endarterectomy****Authors:**

Brad E. Zacharia, MD; Maxwell B. Merkow, BS; Sabra C. Lewsey, BA; Zachary L. Hickman, MD; Gene T. Yocum, BA; Andrew F. Ducruet, MD; Eric J. Heyer, MD, PhD; E. Sander Connolly Jr., MD (New York, NY)

Discussant:

Warren R. Selman, MD

644 4:15–4:29 PM**Ultra High-Dose Intra-Arterial Infusion of Verapamil Through an In-Dwelling Microcatheter for Medically Refractory Severe Vasospasm****Authors:**

Erminia Albanese, MD; Antonino Russo, MD; Monica Quiroga, MD; Arthur John Ulm, MD (Macon, GA)

Discussant:

Sean D. Lavine, MD

645 4:30–4:44 PM**Red Blood Cell Transfusion and Outcome after Aneurismal Subarachnoid Hemorrhage****Authors:**

Peter D. Le Roux, MD; W. Andrew Kofke, MD; Jennifer Faerber, BS; Joshua Levine, MD (Philadelphia, PA)

Discussant:

Robert J. Dempsey, MD

INVITED SPEAKER

4:45–5:15 PM

AVMs Management

Evandro De Oliveira, MD, PhD

**SCIENTIFIC SESSION VI—
NEUROTRAUMA**

Room 30AB, San Diego Convention Center
2:45–5:15 PM

This session will focus on innovations in the diagnosis, management and treatment of neurotrauma neurosurgery. Innovations which have been developed in the last twelve months will be presented.

Moderator:

Michael G. Fehlings, MD, PhD

646 2:45–2:59 PM**The Role of Extracellular Glutamate Measured by Cerebral Microdialysis in Severe Traumatic Brain Injury****Authors:**

Roukoz B. Chamoun, MD; Dima Suki, PhD; Snankar Gopinath, MD; Claudia Robertson, MD (Houston, TX)

Discussant:

Geoffrey T. Manley, MD, PhD

647 3:00–3:14 PM**Activated Protein C is Neuroprotective and Mediates Neovascularization and Neurogenesis after Controlled Cortical Impact****Authors:**

Anthony L. Petraglia, MD; Corey Walker; Meenakshisudaram Thiyagarajan, PhD (Rochester, NY); José A. Fernández, MD, PhD; John H. Griffin, PhD (La Jolla, CA); Berislav V. Zlokovic, MD, PhD (Rochester, NY)

Discussant:

Geoffrey T. Manley, MD, PhD

648 3:15–3:29 PM**Complications of Cranioplasty Following Decompressive Craniectomy for Medically Refractory Intracranial Hypertension****Authors:**

M. Reid Gooch, BS; Greg E. Gin, MS; Tyler J. Kenning, MD; John W. German, MD (Albany, NY)

Discussant:

Rocco A. Armonda, MD

INVITED SPEAKER

3:30–4:00 PM

Blast is Not the Past; Lessons and Opportunities to Improve Outcomes of TBI and PTSD

Lawrence F. Marshall, MD

649 4:01–4:15 PM**A Comparison of Hinge Craniotomy and Craniectomy for Control of Intracranial Hypertension: Clinical and Radiologic Results****Authors:**

Tyler J. Kenning, MD; Ravi H. Gandhi, MD; Dane Smith; John W. German, MD (Albany, NY)

Discussant:

Bob S. Carter, MD, PhD

650 4:16–4:30 PM
Effectiveness of Controlled Lumbar CSF Drainage in Medically Refractory Increased Intracranial Pressure

Authors:

Ali Murad, MD; Austin R.T Colohan, MD (Loma Linda, CA); Samer S. Ghostine, MD (Los Angeles, CA)

Discussant:

Harold Louis ReKate, MD

651 4:31–4:45 PM
Blood Alcohol Concentration (BAC) as a Potential Determinant of Mortality, Impairment and Disability after Traumatic Spinal Cord Injury: Analysis of the Third National Acute SCI Study (NASCIS-3) Batab

Authors:

Julio C. Furlan, MD, PhD (Toronto, Canada); Michael B. Bracken, PhD (New Haven, CT); Michael G. Fehlings, MD, PhD (Toronto, Canada)

Discussant:

Patrick W. Hitchon, MD

652 4:46–5:00 PM
Occipital Condyle Fractures: Epidemiology, Classification and Treatment

Authors:

Sabih T. Effendi; Kevin C. Morrill, MD; Howard Morgan, MD, FACS; Richard A. Suss, MD; Christopher J. Madden, MD (Dallas, TX)

Discussant:

James S. Harrop, MD

653 5:01–5:15 PM
Portable Head CT Scan and Its Effect on Intracranial Pressure, Cerebral Perfusion Pressure and Brain Oxygen

Authors:

Kaitlin Peace; Ronald Wolfe, MD; Eileen Maloney, CRNP; Suzanne Frangos, RN; Elizabeth Sheilds, RT; Marianne Hujcs, MSN, RN; Joshua Levine, MD; Andrew Kofke, MD; Wei Yang, PhD; Peter D. LeRoux, MD (Philadelphia, PA)

Discussant:

Owen Bruce Samuels, MD

JOINT ANNUAL BUSINESS MEETING OF THE AMERICAN ASSOCIATION OF NEUROLOGICAL SURGEONS AND THE AMERICAN ASSOCIATION OF NEUROSURGEONS

5:30–7:30 PM

Room 24BC, San Diego Convention Center

TUMOR SECTION YOUNG MEMBERS RECEPTION

5:45–7:30 PM

Mission Hills Room, San Diego Marriot Hotel & Marina

HISTORY SECTION DINNER

6:00–10:00 PM

Museum of Man, Balboa Park
See page 23 for more details.

AANS INTERNATIONAL RECEPTION

7:30–9:30 PM

Mingei International Museum
See page 23 for more details.



BREAKFAST FOR SEMINAR PARTICIPANTS

20D Foyer and Center Terrace, San Diego Convention Center
6:45–7:30 AM

EXHIBIT HOURS

Exhibit Halls E-H, San Diego Convention Center
9:00 AM–4:00 PM

BEVERAGE BREAKS

9:00–9:45 AM, Exhibit Hall
2:45–3:30 PM, Exhibit Hall

LUNCH IN THE EXHIBIT HALL

1:15–2:00 PM

BREAKFAST SEMINARS

7:30–9:30 AM

Fee: \$100 each, includes breakfast

201

Quality and Efficiency Measures in an Action Plan

Room 24B, San Diego Convention Center

Moderator:

Mark E. Linskey, MD

Panelists:

Robert E. Harbaugh, MD, FACS; Stacey Lambeth; Daniel K. Resnick, MD; Alan M. Scarrow, MD, JD

This seminar will focus on the current professional liability crisis, including a history of reform measures that have worked and those that have not. Methods to reduce exposure to professional liability claims will be discussed, as well as ways physicians can limit personal liability. Participants can use these strategies to develop an action plan for their practice.

Learning Objectives:

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

- Describe the differences between process and efficiency measures
- Explain the make-up and role of the AMAPCPI, the NQF and the AQA in developing, approving and implementing quality measures as well as the degree of physician input and influence on this process

- Discuss the legislative background and current structure of the CMS PQRI initiative

202

Open vs. Endoscopic Approaches to the Anterior Skull Base

Room 25A, San Diego Convention Center

Moderator:

William T. Couldwell, MD, PhD

Panelists:

Ossama Al-Mefty, MD; Fred Gentili, MD; Atul Goel, MD; Sandeep M. Kunwar, MD; Theodore H. Schwartz, 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

203

Cerebral Neuromonitoring

Room 32A, San Diego Convention Center

Moderator:

R. Loch Macdonald, MD, PhD

Panelists:

Odetta Althea Harris, MD, MPH; Gary K. Steinberg, MD, PhD; Shirley I. Stiver, MD, PhD

This seminar will review the use of various cerebral neuromonitoring techniques for use in patients undergoing neurosurgical procedures and care in the neurosurgical intensive care unit.

Learning Objectives:

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

- Discuss applications of electrophysiology, functional mapping, ICP monitoring, CBF measurements, TCD and tissue chemical analysis for patients undergoing cranial and spinal surgery
- Identify the uses for different cerebral and spinal neuromonitoring techniques for surgical and ICU patients
- Discuss application of electrophysiology, ICP monitoring, CBF measurements, TCD and tissue chemical analysis for patients in the neurosurgical intensive care unit

204

R&F

Emerging Concepts in Stem Cell Biology and Cell Based Therapies

Room 20D, San Diego Convention Center

Moderator:

John A. Boockvar, MD

Panelists:

Alfredo Quinones-Hinojosa, MD; Nathan R. Selden, MD, PhD; Viviane S. Tabar, MD

This clinic is free to Residents, Fellows and Medical Students.

The breakfast seminar will introduce participants to the basic biology of stem cells in the Central Nervous System (CNS). The seminar will focus on stem cell biology as it relates to CNS development, neurodegenerative disease, brain tumor formation and CNS injury. The seminar will focus on the “reality vs. hype” of stem cell based therapies for CNS injury or disease.

Learning Objectives:

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

- Discuss the basic definitions and terminology related to Stem Cell Biology and the Central Nervous System
- Summarize recent advances in the Science of Stem Cells as it relates to CNS injury or disease
- Discuss recent advances in Stem Cell based therapies for the treatment of CNS injury or disease

205**International Opportunities in Neurosurgery**

Room 25C, San Diego Convention Center

Moderator:

Merwyn Bagan, MD, MPH

Panelists:

Michael M. Haglund, MD, PhD; Gail L. Rosseau, MD; David I. Sandberg, MD; Benjamin C. Warf, MD

This seminar will highlight past, present and future efforts of the Foundation for International Education in Neurological Surgery (FIENS), an organization dedicated to fostering neurosurgical education and training in developing countries. Current volunteer activities at FIENS sites around the world will be provided and information on how to become a FIENS volunteer (for both attending and resident neurosurgeons) will be discussed.

Learning Objectives:

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

- Discuss the current educational and material needs of neurosurgical training programs in the developing world
- Explain how to become an international neurosurgical volunteer

206**Epilepsy: New Surgical Treatment and Management Approaches**

Room 28A, San Diego Convention Center

Moderator:

Dennis D. Spencer, MD

Panelists:

Nicholas M. Barbaro, MD; Frederick A. Boop, MD, FACS; Aaron A. Cohen-Gadol, MD; Gerald A. Grant, MD; Guy M. McKhann II, MD

This seminar will examine the preoperative evaluation for surgery and emphasize the changing descriptive of the epileptogenic 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

207**R&F N&PE****Coil vs. Clip for Intracranial Aneurysms**

Room 30CD, San Diego Convention Center

Moderator:

B. Gregory Thompson Jr., MD

Panelists:

Felipe C. Albuquerque, MD; C. Michael Cawley, MD, FACS; Adel M. Malek, MD, PhD; Charles J. Prestigiacomo, MD, FACS

This clinic is free to Residents, Fellows 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

208**Peripheral Nerve Entrapment Syndromes**

Room 28B, San Diego Convention Center

Moderator:

Eric L. Zager, MD

Panelists:

Allan J. Belzberg, MD; Robert J. Spinner, MD, FACS; Lynda Jun-san Yang, MD, PhD

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

209**Complications and Complex Spinal Surgery: Lessons Learned**

Room 31ABC, San Diego Convention Center

Moderator:

Volker K. H. Sonntag, MD

Panelists:

Ziya L. Gokaslan, MD, FACS; Regis W. Haid Jr., MD; Paul C. McCormick, MD; Stephen L. Ondra, 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

210**Spondylolisthesis: Controversies in Management**

Room 30AB, San Diego Convention Center

Moderator:

Charles L. Branch Jr., MD

Panelists:

Peter Douglas Angevine, MD; Langston T. Holly, MD; John E. O'Toole, MD; Michael Y. Wang, 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:

- Recognize different types of spondylolisthesis
- Review current treatment options of degenerative spondylolisthesis
- Recognize future or potential implications of treatment options for degenerative spondylolisthesis

211

Cervical Spondylotic Myelopathy

Room 28C, San Diego Convention Center

Moderator:

Robert F. Heary, MD

Panelists:

Michael G. Kaiser, MD; Iain H. Kalfas, MD; Praveen V. Mummaneni, MD; Brian R. Subach, MD, FACS

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:

- Identify the various pathologies in myelopathy
- Distinguish the treatment (operative) options for cervical spondylotic myelopathy
- Review operative success/failure rates in cervical spondylotic myelopathy

212

Update in Psychosurgery

Room 29B, San Diego Convention Center

Moderator:

G. Rees Cosgrove, MD, FRCS(C)

Panelists:

Aviva Abosch, MD, PhD; Paul S. Larson, MD; Parag G. Patil, MD, PhD

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

213

Vertebral Column Tumors

Room 28D, San Diego Convention Center

Moderator:

Mark H. Bilsky, MD

Panelists:

Peter C. Gerszten, MD, MPH; Ehud Mendel, MD, FACS; Laurence D. Rhines, MD; Phillip A. Tibbs, MD

This seminar is intended to provide an overall review of management of both primary and metastatic spinal tumors. This would include cervical 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:

- Discuss the current literature on the management of both primary and metastatic spinal tumors
- Evaluate various medical and surgical treatment options including stereotactic radiosurgery
- Identify patients who are most suitable for vertebroplasty and kyphoplasty

214

Integrating Mid-Level Practitioners into Your Practice

Room 28E, San Diego Convention Center

Moderator:

Twyila Lay, NP, MS

Panelists:

Moustapha Abou-Samra, MD; Dean Barone, PA-C, MPAS; Carl B. Heilman, MD; Thomas A. Kopitnik Jr., MD

This seminar will discuss how to integrate a mid-level practitioner into your practice from an administrative and financial standpoint.

Learning Objectives:

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

- Discuss the value a PA or NP can bring to your practice
- Discuss administrative incorporation of PAs and NPs into private and academic practice
- Describe reimbursement issues with use of a mid-level practitioner

215

Total Lumbar Disc Arthroplasty

Room 29A, San Diego Convention Center

Moderator:

Edward C. Benzel, MD

Panelists:

M. Samy Abdou, MD; Fred H. Geisler, MD, PhD; Bruce E. Mathern, MD; Charles S. Theofilos, MD, PA

Biomechanics of lumbar spine comparing fusion with an artificial disc will be presented along with patient selection. Indications for total lumbar arthroplasty and complication avoidance and management will also be presented.

Learning Objectives:

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

- Compare differences between biomechanics of fusion and artificial disc
- Discuss instantaneous axis of rotation of lumbar spine
- Explain surgical insertion techniques for artificial lumbar discs
- State degree of restoration of function and lodosis with artificial disc
- Discuss material aspects of artificial disc for wear, debris and longevity

216

Evidence Based Medicine in Evaluating Clinical Trials

Room 29C, San Diego Convention Center

Moderator:

Stephen J. Haines, MD

Panelists:

Frederick G. Barker II, MD, FACS; Hugh J. L. Garton, MD, MHSc; Abhaya Vivek Kulkarni, MD, FRCS; Christopher Daniel Roark, MD; Timothy C. Ryken, MD

This clinic is free to Residents, Fellows and Medical Students.

Experts in clinical trials and outcome studies will review the most appropriate techniques of investigation for important clinical questions. The focus will be to provide practicing neurosurgeons with tools to identify studies of high quality and apply their findings in ways that will improve their practice of neurosurgery.

Learning Objectives:

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

- Identify the basic types of clinical research questions
- Identify the best research designs to answer specific types of research questions
- Describe a method to identify the highest quality published clinical research studies

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R&F

Surgical Approaches to the Lateral Skull Base

Room 30E, San Diego Convention Center

Moderator:

Jeffrey J. Olson, MD

Panelists:

Jeffrey N. Bruce, MD, FACS; John G. Golfinos, MD; Takeshi Kawase, MD; Chandranath Sen, MD

This clinic is free to Residents, Fellows and Medical Students.

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

218

Models for Successful Neurosurgical Practice

Room 29D, San Diego Convention Center

Moderator:

Clarence B. Watridge, MD, FACS

Panelists:

Paul Joseph Camarata, MD; Joseph S. Cheng, MD, MS; Warren R. Selman, MD

Building a booming and successful neurosurgical practice in this day and age is no simple task. Experts in community, academic and international neurosurgical practices will present the keys to building a successful practice while achieving quality patient care.

Learning Objectives:

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

- Explain the benefits of neurosurgical practice to hospital partnerships
- Discuss various reimbursement methodologies for partnerships
- Explain the complexities of payer contracting
- Recognize the value of an academic affiliation to neurosurgical practice
- Explain the benefits of ancillary services to patients and practice

219

Meet the Press

Room 32B, San Diego Convention Center

Note: Only AANS Members can register for this seminar.

Moderator:

Patricia Ann Clark

Are You Camera-Ready? The chances of today's medical leaders getting through their careers without talking to reporters are slim to none. This session offers extensive practical tips and ideas you can put to immediate use. You will learn how to act and look in front of the camera, how to put together your media message and—most importantly—how to deliver your message successfully.

Learning Objectives:

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

- Conduct a successful media interview
- Communicate the neurosurgery story effectively
- Develop a Message Box to use in media interviews

220

R&F N&PE

Neurosurgical Decision Making in the Elderly

Room 24C, San Diego Convention Center

Moderator:

Deborah L. Benzil, MD

Panelists:

Peter David Le Roux, MD; Linda L. Sternau, MD; Stephen E. Sullivan, MD

This clinic is free to Residents, Fellows and Medical Students.

One of the most significant demographic changes in the United States today is the aging of the population. As Americans live longer, incidence and prevalence of many neurosurgical diseases will change. Many questions will arise about surgical intervention and decision making in this population. This course will address many important aspects of surgical decision making in the elderly patient. Attention will be given to explaining physiological changes which impact anesthesia and to appreciating special surgical considerations for a spectrum of diseases including spinal deformity, aneurysms and trauma. Content will also be directed toward surgical treatment of diseases unique to the elderly such as dementia and NPH.

Learning Objectives:

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

- Explain physiological changes that occur in the elderly and how they impact anesthesia for neurosurgical intervention
- Review special surgical considerations and potential alternatives for a spectrum of neurosurgical diseases including spinal deformity, aneurysms and trauma in the geriatric population
- Discuss new opportunities for and potential growth of neurosurgical treatments for the fastest growing population in the US, those over the age of 60

221

So You've Been Sued: What Now?

Room 33C, San Diego Convention Center

Moderator:

Stanley W. Fronczak, MD, JD, FACS

Panelists:

Michael Anthony Chabraja, Esq.; Wendy Jones, RN, MSN; John A. Kusske, MD

The process of receiving and responding to a malpractice lawsuit will be discussed.

Learning Objectives:

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

- Describe the steps in the process of a malpractice lawsuit
- Explain what to expect and how to respond when a formal complaint is received
- Explain the techniques for handling a discovery deposition
- Describe typical emotional responses to a lawsuit and how to maintain control of personal reactions and the process of defense
- Describe courtroom experience and how to testify before a jury

222

Beginning Your Academic Career: Answers to Your Questions

Room 33B, San Diego Convention Center

Director:

John A. Jane Sr., MD, PhD

Panelists:

H. Hunt Batjer, MD, FACS; Mitchel S. Berger, MD, FACS; Ralph G. Dacey Jr., MD

This clinic is free to Residents, Fellows 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

223

Independent Medical Evaluation and Determination of Impairment in Neurosurgical Practice

Room 24A, San Diego Convention Center

Moderator:

Russell L. Travis, MD

Panelists:

David C. Randolph, MD; James B. Talmage, MD

This clinic is free to Residents, Fellows and Medical Students.

The determination of impairment and independent medical evaluations are important aspects of neurosurgical practice. This introductory program will provide a brief overview of the determination of impairment and contemporary evaluation and assessment concepts and their use in conjunction with evidence based medical practices.

Learning Objectives:

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

- Review the process of determination of impairment
- Apply the basic skills of disability evaluation and determine the next steps to building a disability evaluation practice
- Identify three common sources of evidence based medicine practice guidelines
- Identify an acceptable medical-legal report and the potential risks/pitfalls of report writing

224

Neuromodulation for Residents

Room 20BC, San Diego Convention Center

Moderator:

Christopher J. Winfree, MD

Panelists:

George T. Mandybur, MD; Alon Y. Mogilner, MD, PhD; Julie Georgia Pilitsis, MD, PhD; Joshua M. Rosenow, MD; Jason M. Schwalb, MD; Konstantin V. Slavin, MD

This clinic is free to Residents, Fellows and Medical Students.

This course is designed to stimulate interest in the field of neurosurgical pain

R&F

management. This course will provide participants with detailed instruction in both the theory and application of a variety of neurostimulation 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:

- Explain the rationale for the use of neurostimulation, the types of painful conditions amenable to these techniques, and the limitations in their use
- Discuss the proper patient selection to optimize beneficial outcomes when using these treatment strategies
- Discuss the basic operative techniques as well as operative nuances when using implantable devices

225

N&PE R&F

Evaluation of the Child with a CSF Shunt

Room 25B, San Diego Convention Center

Moderator:

Joseph H. Piatt Jr., MD

Panelists:

Bermans J. Iskandar, MD; John R. W. Kestle, MD; Harold Louis Rekate, MD

This clinic is free to Residents, Fellows and Medical Students.

This seminar is intended for surgeons in general neurosurgical practice who follow and evaluate children with hydrocephalus and CSF shunts.

Learning Objectives:

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

- Conduct a focused history and examination of the child with a CSF shunt
- Plan a sensitive, specific and efficient diagnostic evaluation of symptoms compatible with CSF shunt failure
- Perform critical assessment of brain imaging studies in children with CSF shunts
- Select appropriate dispositions of children with shunts visiting the emergency department and recognize evolving, critical situations that require aggressive management

226

Occupational Hazards: Dodging Bullets, Radiation and Disease

Room 20A, San Diego Convention Center

Moderator:

Ann R. Stroink, MD

Panelists:

Kevin T. Foley, MD; Stephen H. Johnson, MD; Joseph Charles Maroon, MD; Stephen L. Ondra, MD; Rodney L. Thompson, MD

This breakfast seminar will focus on the incidence, management and practical, preventive strategies neurosurgeons can employ to minimize occupational hazards related to the practice of neurosurgery. Additionally, participants will acquire tools and ideas to create effective communication strategies, policies and procedures related to occupational hazards in the operating room.

Learning Objectives:

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

- Delineate common disorders associated with radiation exposure and employ methods to minimize risks to self and staff
- Create effective communication tools applicable to policies and procedures that address neurosurgical occupational hazards
- Discuss the occupational hazards associated with noise, bovie smoke, infectious diseases and the physical challenges associated with lengthy neurosurgical procedures
- Outline the concerns of the sustainability of the neurosurgical workforce as it relates to evolving professional pressures including medical liability, extended work hours and emergency room coverage

PLENARY SESSION II**9:45 AM–1:00 PM**

Exhibit Hall D, San Diego Convention Center

Moderator:

Troy M. Tippet, MD; Vincent C. Traynelis, MD

800

9:45–9:59 AM

Fluorescence-Guided Tumor Resection: Correlation between Local Fluorescence and MRI-Enhancement**Authors:**

David W. Roberts, MD; Pablo Valdes, BA (Lebanon, NH); Alex Hartov, PhD (Hanover, NH); Frederic Leblond, PhD (Lebanon, NH); Kathryn Fontaine, BS (Hanover, NH); Scott Lollis, MD; S. Scott Lollis, MD; Brent Harris, MD; Keith D. Paulsen, PhD (Lebanon, NH)

Discussant:

Raymond Sawaya, MD

801

10:00–10:14 AM

Does Size Matter? A Volumetric Analysis of Craniectomy Size and It's Relationship to Outcomes in Patients with Traumatic Brain Injury and Diffuse Cerebral Edema**Authors:**

Jayant Jagannathan, MD; David O. Okonkwo, MD, PhD (Pittsburgh, PA); Nicholas Szerlip, MD (Baltimore, MD); M. Sean Grady, MD (Philadelphia, PA); John A. Jane, Sr., MD, PhD (Charlottesville, VA)

Discussant:

Alex B. Valadka, MD

802

10:15–10:29 AM

Multilevel Discectomy Versus Cervical Corpectomy: Comparison of Risk-Adjusted Complication Rates**Authors:**

Chirag G. Patil, MD, MS; Shivanand P. Lad, MD, PhD; Chris Ho, BS; Maxwell Boakye, MD (Stanford, CA)

Discussant:

Christopher I. Shaffrey, MD

803

10:30–10:44 AM

Long Term Follow-Up of Cortical Stimulation to Treat Major Depressive Disorder**Authors:**

Emad N. Eskandar, MD (Boston, MA); Brian Kopell, MD (Milwaukee, WI); Douglas Kondziolka, MD (Pittsburgh, PA)

Discussant:

Ali R. Rezai, MD

804

10:45–10:59 AM

Pediatric Patients with Low Neurological Status/Fixed Pupils and AVM Hemorrhage: An Outcome Analysis**Authors:**

Ashutosh Singhal, MD, FRCS; Tara Adirim, BSC; D. Douglas Cochrane, MD, FRCS; Paul Steinbok, FRCS (Vancouver, Canada)

Discussant:

Timothy B. Mapstone, MD

VAN WAGENEN FELLOW PRESENTATION

11:00–11:03 AM

Introduction By:

James R. Bean, MD

Recipient:

Michael C. Park, MD, PhD

VAN WAGENEN LECTURE

11:04–11:33 AM

Introduction By:

James R. Bean, MD

Role of Serotonin Neurons in the Induction of L-DOPA and Graft-Induced Dyskinesias**Speaker:**

Anders Bjorklund, MD

AN IMPORTANT ANNOUNCEMENT FROM DR. JAMES R. BEAN**THEODORE KURZE LECTURE**

11:34 AM–12:09 PM

Introduction By:

James R. Bean, MD

Advancing Discovery & Translational Research Through Chemical Genomics**Speaker:**

John C. Reed, MD, PhD

DISTINGUISHED SERVICE AWARD

12:10–12:14 PM

Presented By:

James R. Bean, MD

Mrs. Rhonda Hassenbusch to receive in memory of Samuel J. Hassenbusch, MD, PhD

PRESIDENTIAL ADDRESS**12:15–1:00 PM***Introduction By:*

A. John Popp, MD

**A New Professional Paradigm:
Whence and Whither***Speaker:*

James R. Bean, MD

501**N&PE****Endovascular Management of Ischemic
and Hemorrhagic Stroke**

Room 25B, San Diego Convention Center

2:00–5:00 PM

Fee: \$100 for Doctors.*Free for N&PE**Moderator:*

Adnan H. Siddiqui, MD, PhD

Speaker:

Bernard R. Bendok, MD; Peng Roc Chen, MD; Kai U. Frerichs, MD; Elad I. Levy, MD; Kenneth M. Liebman, MD; Laura Mason, ANP-C; Erol Veznedaroglu, MD

See page 26 for more details.

**AANS/CNS SECTION ON
TUMORS I**

Room 20BC, San Diego Convention Center

2:45–5:30 PM

Moderators:

John H. Chi, MD, MPH; William T. Curry Jr., MD

**SYMPOSIUM: CURRENT TOPICS
IN EXTRAMEDULLARY SPINAL
TUMORS**

2:45–2:59 PM

**Intradural Extramedullary Spinal
Tumors: Pathologic and Surgical Pearls***Speaker:*

Paul C. McCormick, MD

3:00–3:14 PM

**Use of Radiation for Extramedullary
Extradural Tumors***Speaker:*

Peter C. Gerszten, MD, MPH

3:15–3:30 PM

**Surgical Options for Extramedullary
Extradural Tumors***Speaker:*

Ziya L. Gokaslan, MD, FACS

3:31–3:44 PM

PANEL DISCUSSION

3:45–3:50 PM

TUMOR BUSINESS MEETING

3:51–4:00 PM

AWARDS PRESENTATION*Presented By:*

Gene H. Barnett, MD, FACS

4:01–4:20 PM

FARBER AWARD*Introduction By:*

Gene H. Barnett, MD, FACS

Recipient:

Peter B. Dirks, MD

ABSTRACT MODERATORS:

Frederick G. Barker II, MD; Daniel P. Cahill, MD, PhD

833

4:21–4:30 PM

Ronald Bittner Award**Multi-Institutional Validation of the
UCSF Low Grade Glioma Prognostic
Scoring System***Authors:*

Edward Chang, MD; Aaron Clark, MD, PhD (San Francisco, CA); Randy Jensen, MD, PhD (Salt Lake City, UT); Mark Bernstein, MD; Abhijit Guha, MD; Giorgio Carrabba, MD; Debabrata Mukhopadhyay, MD (Toronto, Canada); Won Kim, MS; Linda Liao, MD, PhD (Los Angeles, CA); Susan Chang, MD; Justin Smith, MD, PhD; Mitchel Berger, MD; Michael McDermott, MD (San Francisco, CA)

834

4:31–4:40 PM

**Genetic Alterations Associated with
Shorter Progression Free Survival in
Patients with Oligodendroglial Tumors***Author:*

Claudia C. Faria, MD (Lisbon, Portugal)

835

4:41–4:50 PM

**Outcome of the Patients with Brainstem
Metastases Treated with Stereotactic
Radiosurgery***Authors:*

Mustafa A. Hatiboglu, MD; Eric L. Chang, MD; Dima Suki, PhD; Raymond Sawaya, MD; Jeffrey Weinberg, MD (Houston, TX)

836

4:51–5:00 PM

**Combined Physiological Targeting for
Stereotactic Biopsies in Tumors after
Combined Anti-Angiogenesis Treatment***Authors:*

Clark C. Chen, MD, PhD; Alicija Zientara; Anand Mahadevan, MD; Ekkehard Kasper, MD, PhD; Peter C. Warnke, MD (Boston, MA)

837

5:01–5:10 PM

**Stryker Neuro-Oncology Award
Differential Response of Normal Neural
and Tumor-Derived Stem-Like Cells to
Ionizing Radiation***Authors:*

Andrew B. Foy, MD; Hong Ye, BS; Cynthia Wetmore, MD, PhD (Rochester, MN)

838

5:11–5:20 PM

**WINS Louise Eisenhardt Award
EGFR Activation Suppresses the
Expression of the Catalytic Subunit of
PP2A in Human Glioblastoma
Multiforme***Authors:*

Jennifer A. Moliterno, MD (New Haven, CT); Robel T. Beyene, BA; Xiaofei Hu, BS; Demirkan B. Gursel, PhD; Brian M. Howard, BS; John A. Boockvar, MD (New York, NY)

839

5:21–5:30 PM

**Impact of Cytogenetic Abnormalities on
the Management of Skull Base
Chordoma***Authors:*

Kaith Almefty, BS; Svetlana Pravdenkova, MD, PhD; Jeffrey Sawyer, PhD; Ossama Al-Mefty, MD (Little Rock, AR)

AANS/CNS SECTION ON PAIN

Room 30CD, San Diego Convention Center
2:45–5:30 PM

Moderators:

Joshua M. Rosenow, MD; Konstantin V. Slavin, MD

813 2:45–2:56 PM

William Sweet Award
Mechanical Allodynia and Gait Asymmetry Accompany Autoimmune Reactivity Following Dorsal Root Ganglion Injury

Authors:

Mohammed F. Shamji, MD, PhD (Canada, Ottawa); Kyle D. Allen, PhD; Stephen So, BS; Liufang Jing, MS; Samuel B. Adams, MD (Durham, NC); Reinhard Schuh (Austria, Vienna); Janet Huebner, MS; Virginia B. Kraus, MD, PhD; Allan H. Friedman, MD; Lori A. Setton, PhD; William J. Richardson, MD (Durham, NC)

814 2:57–3:08 PM

Bioengineered Injectable Anticytokine Nanotherapeutics to Antagonize Inflammation in Dorsal Root Ganglion Explant Cultures

Authors:

Mohammed F. Shamji, MD, PhD (Canada, Ottawa); Liufang Jing, MS; Jun Chen, PhD; Priscilla Hwang, BS; Odelia Ghodsizadeh, BS; Allan H. Friedman, MD; William J. Richardson, MD; Lori A. Setton, PhD (Durham, NC)

815 3:09–3:20 PM

Surgical Management of Trigeminal Neuralgia Patients Who Have Failed Three or More Prior Operations

Author:

Bruce E. Pollock, MD; Kathy J. Stien, RN (Rochester, MN)

816 3:21–3:32 PM

Microvascular Decompression for Trigeminal Neuralgia Following Radiosurgery

Author:

Joseph C. Chen, MD, PhD (Los Angeles, CA)

817 3:33–3:44 PM

A Meta-Analysis of Four Studies on the Safety and Efficacy of a Conventional Implantable Pulse Generator (IPG) for the Management of Chronic Pain of the Trunk and Limbs

Authors:

Konstantin Slavin, MD (Chicago, IL); Cheryl Monroe, MS (Plano, TX)

818 3:45–3:56 PM

Systematic Acute Postoperative Pain Therapy after Neurosurgical Procedures, Appraisal of 914 patients

Authors:

Aram A. Bani, MD; Bahram Hashemi, MD (Germany)

819 3:57–4:08 PM

Treatment of Post-Herpetic Neuralgia with Intrathecal Narcotic Administration

Authors:

Andrew J. Fabiano, MD; Carolyn Doyle, FNP; Robert J. Plunkett, MD (Buffalo, NY)

4TH ANNUAL JOHN LOESER LECTURE

4:09–4:53 PM

Speaker:

Frederick A. Lenz, MD, PhD

SYMPOSIUM: STRESS INDUCED ANALGESIA: CAN WE HIJACK ADAPTATION?

4:54–5:30 PM

Speaker:

Nathan R. Selden, MD, PhD

AANS SECTION ON HISTORY

Room 30AB, San Diego Convention Center
2:45–5:30 PM

In Memory of Setti S. Rengachary, MD**Moderators:**

Larry V. Carson, MD, MBA; Mark C. Preul, MD

SYMPOSIUM: THE SCIENCE AND PHILOSOPHY OF THE CEREBRAL VENTRICLES

2:45–2:59 PM

Speaker:

Mark C. Preul, MD

3:00–3:15 PM

Speaker:

Charles J. Prestigiacomo, MD, FACS

3:16–3:55 PM

Speaker:

Larry Swanson, PhD

3:56–4:00 PM

Discussion

PRESENTATION OF THE VESALIUS AWARD

4:01–4:05 PM

805 4:06–4:15 PM

Vesalius Award

Eduard Pernkopf and His Atlas 20 Years After the Last Printing: A Special Interest in Neuroanatomy and Reflection for Neurosurgery

Authors:

Ulises Garcia, MD (Phoenix, AZ); Michael Pretterklieber, MD; Wolfgang K. Pfisterer (Vienna); Robert F. Spetzler, MD; Volker KH Sonntag, MD; Mark C. Preul, MD (Phoenix, AZ)

806 4:16–4:25 PM

A Disciple of Neurosurgery: The Surgical Career of Sir Percy Sargent (1873-1933)

Authors:

Chris A. Sloffer, MD, MBA (Grand Rapids, MI); William C. Hanigan, MD, PhD (Jackson, MS)

807 4:26–4:35 PM

Cushing and Cutler: Successor to the Throne

Authors:

Jeffrey E. Catrambone, MD (Newark, NJ); Tayyab Malik, BS (Montclair, NJ); Charles J. Prestigiacomo, MD; Peter W. Carmel, MD (Newark, NJ)

808 4:36–4:45 PM**Ceneritious Nerve Vesicles and Ganglion Globules: Did Robert Bentley Todd Anticipate the Neuron Doctrine?****Authors:**

Darrin J. Lee, BS; Kiran F. Rajneesh, MD, MS (Irvine, CA); Edward H. Reynolds, MD (United Kingdom, London); Devin K. Binder, MD, PhD (Irvine, CA)

809 4:46–4:54 PM**Spinal Vascular Malformations—History of the Diagnosis and Treatment from the First Description in 1883 to Embolization in 2008****Authors:**

Gaurav Gupta, MD; Chirag Gandhi, MD; Charles J. Prestigiacomo, MD, FACS (Newark, NJ)

810 4:55–5:04 PM**The Evolution of Neurosurgical Treatment for Non-Accidental Head Injury in Children****Authors:**

Cormac O. Maher, MD (Ann Arbor, MI); Aaron A. Cohen-Gadol, MD (Indianapolis, IN); Wajd Al-Holou, BS (Ann Arbor, MI)

811 5:05–5:14 PM**A Marriage of Minds-The Penfield-Jasper Collaboration and Birth of Temporal Lobe Epilepsy Surgery****Authors:**

Edward M. Marchan, MD; Ashwini D. Sharan, MD (Philadelphia, PA)

812 5:15–5:24 PM**The Differential Diagnosis of Stupor and Coma: Eighteenth Century Understandings****Authors:**

William C. Bergman, MD; Robert E. Lieberson, MD (San Jose, CA); Raymond A. Schulz, MSc (San Mateo, CA)

QUESTION AND ANSWER

5:25–5:30 PM

AANS/CNS SECTION ON PERIPHERAL NERVE

Room 20D, San Diego Convention Center
2:45–5:30 PM

Moderators:

Allen H. Maniker, MD Robert J. Spinner, MD, FACS

KLINE LECTURE

2:45–3:35 PM

Introduction By:

Allen H. Maniker, MD

On the Road of Nerve Surgery**Speaker:**

Hans-Peter Richter, MD

QUESTION AND ANSWER

3:36–3:45 PM

3:46–5:00 PM

The Great Masqueraders in Peripheral Nerve Surgery:

- Parasthesias in the Hand
- Footdrop
- Parasthesias in the Thigh
- Shoulder Weakness
- Incidental Soft Tissue Mass on MRI
- Painful Mass

Speakers:

Allan J. Belzberg, MD; Allen H. Maniker, MD; Rajiv Midha, MD, MS, FRCS; Robert J. Spinner, MD, FACS; Robert L. Tiel, MD; Lynda Jun-san Yang, MD, PhD; Eric L. Zager, MD

828 5:01–5:06 PM**Surgical Treatment of Intrinsic Tumors of the Sciatic Nerve****Authors:**

Ryan S. Kitagawa, MD; John M. Slopis, MD; Sudhakar Tummala, MD; Ian E. McCutcheon, MD (Houston, TX)

829 5:07–5:12 PM**Contribution of Donor Class MHC II Molecules in Nerve Allograft Rejection****Authors:**

Wilson Z. Ray, MD; Nancy Solowski, MD; Esther Marie Papp, BS; Rahul Kasukurthi, BS; Amy M. Moore, MD; Thomas Tung, MD; Susan E. Mackinnon, MD (St Louis, MO)

830 5:13–5:18 PM**Retrospective Analysis of the Overall Effectiveness of Endoscopic Thoracic Sympathectomies for Treatment of Hyperhidrosis****Authors:**

Markus Bookland, MD; Nicholas Zaorsky, BS; Andreas Lamelas, BS; Jeff Morris, BS; Tamara Jette, BS; Jack Jallo, MD, PhD (Philadelphia, PA)

831 5:19–5:24 PM**Carpal Tunnel Syndrome: Modified Minimal Invasive Surgical Technique****Authors:**

Jiao-Chiao Yang, MD, MBA; Swei-Ming Lin, MD (Kaohsiung, Taiwan)

832 5:25–5:30 PM**Endoscopic Decompression of the Ulnar Nerve at the Elbow****Authors:**

Joachim M. Oertel, DR; Doerthe Keiner, MD; Michael R. Gaab, MD, PhD (Hannover, Germany)

AANS/CNS SECTION ON PEDIATRICS

Room 20A, San Diego Convention Center
2:45–5:30 PM

Moderator:

John Ragheb, MD, FACS

Shulman Award Presentation

2:45–2:56 PM

Hydrocephalus Award Presentation

2:57–3:08 PM

Matson Lecture

3:09–3:49 PM

Speaker:

John A. Jane Sr., MD, PhD

Abstract Presentations and**Commentators**

3:50–5:24 PM

Commentators:

A. Leland Albright, MD, Arnold H. Menezes, MD, Howard L. Weiner, MD, John C. Wellons III, MD

820 3:50–3:57 PM**Biportal Thoracoscopic Sympathectomy for Hyperhidrosis in Adolescents****Authors:**

Scott D. Wait, MD; Brendan D. Killory, MD (Phoenix, AZ); Gregory P. Lekovic, MD, PhD (Los Angeles, CA); Curtis A. Dickman, MD (Phoenix, AZ)

Commentator: 3:58–3:59 PM**821** 4:00–4:07 PM**Biomarkers for Moyamoya****Authors:**

Edward R. Smith, MD; David Zurakowski, PhD; R. Michael Scott, MD; Marsha A. Moses, PhD (Boston, MA)

Commentator: 4:08–4:09 PM**822** 4:10–4:17 PM**ICP Monitoring in 30 Shunted Hydrocephalus Patients: Results and Interventions****Authors:**

Greg Olavarria, MD; Jogi Pattisapu, MD; Chris Gegg, MD (Orlando, FL)

Commentator: 4:18–4:19 PM**823** 4:20–4:27 PM**Safety and Efficacy of Neuroendovascular Procedures in Children****Author:**

Hamad Farhat (Miami, FL)

Commentator: 4:28–4:29 PM**824** 4:30–4:37 PM**rhBMP-2 in Pediatric Posterior Spinal Fusions: Safety Profile and Efficacy in the Early Post-Operative Period****Authors:**

Daniel K. Fahim, MD; William E. Whitehead, MD; Daniel J. Curry, MD; Thomas G. Luerssen, MD; Andrew Jea, MD (Houston, TX)

Commentator: 4:38–4:39 PM**825** 4:40–4:47 PM**Ventricles Dilate Acutely in Response to One Time Injection of Hyperosmotic Dextran****Authors:**

Satish Krishnamurthy, MD (Troy, MI); Jie Li, MD (Detroit, MI); James Pat McAllister II, PhD (Salt Lake City, UT)

Commentator: 4:48–4:49 PM**826** 4:50–5:57 PM**AANS Medical Student Summer Research Fellowship Defining the Effects of TSC2 Knockdown on the Developmental Pathogenesis of Cortical Tubers: In Vitro and In Vivo Approaches****Authors:**

Whitney E. Parker, Ksenia Orlova, Gregory Heuer, MD, PhD, Lori Atkinson, Jason Yoon, Marianna Baybis, Gordon H. Baltuch, MD, PhD, Peter B. Crino, MD, PhD (Philadelphia, PA)

Commentator: 4:58–4:59 PM**827** 5:00–5:07 PM**Globus Pallidus Internus DBS in Pediatric Patients with Generalized Primary Dystonia: Long-Term Efficacy and Safety****Authors:**

Jan H. Mehrkens, MD; Ingo Borggäfe, MD; Florian Heinen, MD; Kai Boetzel, MD (Germany, Munich)

Commentator: 5:08–5:09 PM**SYMPOSIUM**

5:10–5:30 PM

Overview of Upcoming Webinar on Arachnoid Cysts**Speakers:**

Sarah J. Gaskill, MD, FACS; Mark D. Krieger, MD

AANS/CSNS SOCIOECONOMIC SESSION

Room 31ABC, San Diego Convention Center
2:45–5:45 PM

Moderators:

Gary M. Bloomgarden, MD Michael Patrick Steinmetz, MD

SYMPOSIUM

2:45–4:05 PM

Neurosurgical Practice Outcomes Reporting – Getting Started

Purpose: To inform neurosurgeons on the current state of Practice Outcomes Reporting and its role in MOC and value-based medical practice

Introduction

2:45–2:46 PM

AANS/CNS Role in Creating the Infrastructure for Neurosurgical Outcomes Reporting

2:47–2:56 PM

Speaker:

Troy M. Tippet, MD

Politics, Finances, and Patient Care – The Political Landscape

2:57–3:14 PM

Speaker:

Troy M. Tippet, MD

Quality Activities Affecting Neurosurgery CMS, Payors, and MOC

3:15–3:32 PM

Speaker:

Rachel F. Groman

Quality Reporting – Outcomes, Spine Reporting Trial, and Role-Out of Software

3:33–3:50 PM

Speaker:

Robert E. Harbaugh, MD, FACS

Question and Answer

3:51–4:05 PM

840 4:06–4:20 PM**Robert Florin MD Award**

The Effect of Coiling Versus Clipping of Ruptured and Unruptured Cerebral Aneurysms on Length of Stay, Hospital Cost, Hospital Reimbursement, and Surgeon Reimbursement at a Southeast United States Academic Neurovascular Center

Authors:

Brian L. Hoh, MD; Yueh-Yun Chi, PhD; Margaret A. Dermott, BA; Paul J. Lipori, MBA; Stephen B. Lewis, MD (Gainesville, FL)

841 4:21–4:35 PM**Cone Pevehouse MD Award**

Effects of the ACGME Work Hour Rules on Neurosurgical Resident Education and Productivity

Authors:

Jayant Jagannathan, MD (Charlottesville, VA); Edward G. Vates, MD, PhD (Rochester, NY); Sean M. Grady, MD (Philadelphia, PA); John A. Jane Sr., MD, PhD (Charlottesville, VA)

842 4:36–4:45 PM

A Medicolegal Review of Cases Involving with Quadriplegia Following Cervical Spine Surgery: An Argument for a No-Fault System

Author:

Nancy E. Epstein, MD (New Hyde Park, NY)

843 4:46–4:55 PM

National Trends in Spinal Cord Stimulation (SCS) Surgery

Authors:

Shivanand P. Lad, MD, PhD; Paul Kalanithi, MD; Chirag G. Patil, MD; Jaimie M. Henderson, MD; Maxwell Boakye, MD (Stanford, CA)

844 4:56–5:05 PM

Radiation Exposure in Modern Spinal Surgery

Author:

Patrick P. Fransen, MD (Brussels, Belgium)

845 5:06–5:15 PM

Surgical Fitness: The Foundation of Superior Technique

Authors:

Chris S. Karas, MD; Demi McBeath, BA (Columbus, OH)

846 5:16–5:25 PM

Increased Billing Levels in an Academic Institution Following Standardized Billing Instruction

Authors:

Jeremy Phelps, MD; Paul Turner, MD (Albuquerque, NM)

847 5:26–5:35 PM

Is the Toyota Process a Reasonable Model for Operating Room Efficiency Improvement?

Author:

John W. Bookwalter III, MD (Pittsburgh, PA)

848 5:36–5:45 PM

Subdural Hematoma: National Mortality, Morbidity, and Cost from 1993 to 2006

Authors:

Paul Kalanithi, MD; Shivanand Lad, MD, PhD; Chirag Patil, MD; Maxwell Boakye, MD, FACS (Stanford, CA)

NREF RESEARCH SYMPOSIUM**4:00–5:30 PM**

Room 28C, San Diego Convention Center

The NREF will host the second annual Research Symposium for Foundation contributors and grant recipients. Awardees that recently completed their research are invited to present their results. Members of the NREF's Scientific Advisory Committee, led by Robert G. Grossman, 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.

MATSON LECTURER RECEPTION**6:30 – 8:30 PM**

Mission Hills Room, San Diego Marriot Hotel & Marina

STEREOTACTIC & FUNCTIONAL SECTION RESIDENT/FELLOW RECEPTION**6:30 – 8:30 PM**

Balboa Room, San Diego Marriot Hotel & Marina

BREAKFAST FOR SEMINAR PARTICIPANTS

San Diego Convention Center
6:45–7:30 AM

EXHIBIT HOURS

Exhibit Halls E-H, San Diego Convention Center
9:00 AM–3:30 PM

BEVERAGE BREAKS

9:00–9:45 AM
2:45–3:30 PM

LUNCH IN THE EXHIBIT HALL

Room Exhibit Hall D,
San Diego Convention Center
1:15–2:00 PM

BREAKFAST SEMINARS

7:30–9:30 AM
Fee: \$100 each, includes breakfast

WOMEN IN NEUROSURGERY (WINS)

20th Anniversary Gala Breakfast (By Invitation)
7:30–9:00 AM
See page 24 for description.

301

How I Do It: Acoustic Tumors

Room 29A, San Diego Convention Center

Moderator:

Frederick G. Barker II, MD, FACS

Panelists:

Bruce E. Pollock, MD; Kalmon D. Post, MD; Craig Andrew Van Der Veer, MD; Harry R. van Loveren, MD

The principles of selecting suitable approaches, techniques and tactics of multimodality treatment of acoustic neuromas will be described.

Learning Objectives:

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

- Identify the indications for operative treatment, radiation treatment, drug treatment and observation
- Apply technical details of acoustic tumor surgery
- Discuss how to avoid complications and study the outcome of surgery, radiation treatment and observation

302

Minimally Invasive Spinal Neurosurgery: Indications, Techniques and Complications

Room 30AB, San Diego Convention Center

Moderator:

Kevin T. Foley, MD

Panelists:

Domagoj Coric, MD; Kurt M. Eichholz, MD; Praveen V. Mummaneni, 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

303

Lumbar Spine Fusion

Room 33C, San Diego Convention Center

Moderator:

Joan Frances O'Shea, MD

Panelists:

Andrew T. Dailey, MD; Iain H. Kalfas, MD; Eric M. Massicotte, MD, MSc; Russ R. Nockels, MD

This clinic is free to Residents, Fellows and Medical Students.

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

Learning Objectives:

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

- Identify the fundamentals of the surgical decision making process
- Discuss factors involved with patient selection for lumbar spine fusion

R&F N&PE

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

304

History of Trigeminal Neuralgia

Room 24C, San Diego Convention Center

Moderator:

Aaron A. Cohen-Gadol, MD

Panelists:

Kenneth F. Casey, MD; Charles J. Prestigiacomo, MD, FACS

The history of trigeminal neuralgia surgery reflects the history of our discipline in general. Early treatment modalities targeted extracranial and simple intracranial extradural methods (ganglionectomies) to treat the intractable pain. With evolution of intracranial surgery, posterior fossa exploratory operations by Walter Dandy led to the recognition of microvascular compression as the cause of trigeminal neuralgia. Recent advances and refinements have made treatment of trigeminal neuralgia a very satisfying practice.

Learning Objectives:

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

- Discuss the importance of techniques during the Pre-Cushing era as the foundation for further later advances in the treatment of trigeminal neuralgia
- Discuss the role of Dandy in revolutionizing the pathophysiology of trigeminal neuralgia
- Discuss the evolution of percutaneous techniques in the treatment of trigeminal neuralgia
- Discuss the evolution of microvascular decompression techniques to date
- Discuss how the lessons from the past guide our future advances in the treatment of trigeminal neuralgia

- 305**
Cavernous Malformations: Current Controversies in Management
Room 25A, San Diego Convention Center
Moderator:
Murat Gunel, MD
Panelists:
Michael T. Lawton, MD; Gabriele Schackert, MD; R. Michael Scott, MD; Mario Zuccarello, MD
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
- 306**
Functional Mapping of the Cerebral Cortex: Advantages and Limitations
Room 29B, San Diego Convention Center
Moderator:
Matthew A. Howard III, MD
Panelists:
Mitchel S. Berger, MD, FACS; Guy M. McKhann II, 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
- 307**
Chiari Malformations: Diagnosis Treatments and Failures
Room 31ABC, San Diego Convention Center
Moderator:
Ulrich Batzdorf, MD
Panelists:
Bermans J. Iskandar, 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
- 308**
Lumbar Stenosis
Room 25B, San Diego Convention Center
Moderator:
Robert E. Isaacs, MD
Panelists:
Edward C. Benzel, MD; Larry T. Khoo, MD; Claudius Thome, 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 non-operative 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
- 309**
Treatment of Complex Regional Pain Syndrome and Hyperhydrosis
Room 24B, San Diego Convention Center
Moderator:
Christopher J. Winfree, MD
Panelists:
Robert M. Levy, MD, PhD; Charles Jess Riedel, MD; Joshua M. Rosenow, MD
This seminar will present current management concepts and emerging state-of-the-art techniques and technology to treat symptomatically mediated disorders that include complex region pain syndrome and hyperhydrosis.
Learning Objectives:
After completing this educational activity, participants should be able to:
- Recognize and diagnose complex regional pain syndrome
 - Discuss current treatment of hyperhydrosis
- 310**
Controversies in the Management of Intracerebral Hematomas
Room 30CD, San Diego Convention Center
Moderator:
Neil D. Kitchen, MD, FRCS
Panelists:
Neil A. Martin, MD; Alexander David Mendelow, FRCS, PhD; Mario Zuccarello, 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

311

R&F

Advances in Carotid Disease: Surgery vs. Endovascular Therapy

Room 33B, San Diego Convention Center

Moderator:

Christopher M. Loftus, MD, FACS

Panelists:

Felipe C. Albuquerque, MD; William H. Brooks, MD; Robert E. Harbaugh, MD, FACS

This clinic is free to Residents, Fellows and Medical Students.

This seminar will explore the risk/benefit ratio for high-risk carotid surgery.

Learning Objectives:

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

- Identify high-risk cases in carotid disease
- Recommend appropriate carotid disease cases for surgery
- Discuss the limits of endovascular treatment

312

Pituitary Tumors

Room 29C, San Diego Convention Center

Moderator:

Gail L. Rosseau, MD

Panelists:

Paolo Cappabianca, MD; Daniel F. Kelly, MD; Jean Regis, MD

Participants will obtain a state-of-the-art update on pituitary tumors, including optimal medical, surgical and adjunctive therapies.

Learning Objectives:

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

- Discuss optimal management of prolactinomas
- Describe approach advances in and extensions of transphenoidal surgery
- Construct appropriate adjunctive treatment algorithms for patients

313

Biologics for the Spine

Room 25C, San Diego Convention Center

Moderator:

Daniel K. Resnick, MD

Panelists:

Robert S. Bray Jr., MD; James S. Harrop, MD; Patrick W. Hitchon, MD; Christopher I. Shaffrey, MD

This seminar will focus on novel cutting edge strategies for spine stabilization, specifically focusing on bone graft extenders and substitutes, absorbable implants, and biological adjuncts for fusion.

Learning Objectives:

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

- Discuss the use of electrical stimulation for promotion of fusion
- Describe the current use of absorbable and non-absorbable polymers for spinal stabilization
- Discuss the current use of BMP for spinal Arthrodesis

314

Management of Spinal Axis Trauma

Room 28A, San Diego Convention Center

Moderator:

Gregory R. Trost, MD

Panelists:

Sean M. Lew, MD; Nicholas Theodore, MD; Brian Patrick Walsh, MD; Michael Y. Wang, MD

A variety of commonly encountered spine injuries/fractures will be discussed. The controversies and rationale for treatment strategies will be reviewed.

Learning Objectives:

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

- Discuss the pertinent issues and alternatives
- Review rationale for various spine trauma Treatments

315

Cervical Disc Disease

Room 28B, San Diego Convention Center

Moderator:

William E. Krauss, MD

Panelists:

Ronald I. Apfelbaum, MD; Praveen V. Mummaneni, MD; Thomas A. Sweasey, MD

This seminar will evaluate the surgical management options for herniated cervical discs. The rationale for selection of anterior and posterior approaches and available techniques will be explored.

Learning Objectives:

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

- Evaluate the various treatment options for cervical disc disease
- Compare and contrast the different surgical approaches for herniated cervical disc disease
- Discuss treatment options for cervical disc disease

316

Intracranial Endoscopy

Room 28C, San Diego Convention Center

Moderator:

Michael R. Gaab, MD, PhD

Panelists:

Daniel R. Pieper, MD; Thomas Pittman, MD; Mark M. Souweidane, MD; Charles Teo, MD

State-of-the-art of intracranial endoscopic neurosurgery; the seminar covers ventricular surgery, surgery in intracranial tumors and cysts, endoscopic skull base surgery including transnasal and transcranial approaches.

Learning Objectives:

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

- Review current state of endoscope technology and handling
- Explain the endoscopic treatment of hydrocephalus and cysts
- Discuss up-to-date endoscopic intracranial tumor surgery
- Describe the state of transnasal and selected transcranial skull base surgery
- Explain complication risks and complication avoidance

317**Malignant Brain Tumors: State-of-the-Art Treatment**

Room 30E, San Diego Convention Center

Moderator:

Joseph M. Piepmeier, MD

Panelists:

Ennio Antonio Chiocca, MD, PhD;
Francesco DiMeco, MD; Linda M. Liau, MD,
PhD; Andrew T. Parsa, MD, PhD

This seminar will 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 drug delivery using convection based interstitial diffusion
- Review the tumor biology with gene and vaccine therapy
- Examine the role of stem cells in gliomas

318**Tethered Cord Anomalies**

Room 28D, San Diego Convention Center

Moderator:

Joseph H. Piatt Jr., MD

Panelists:

Stephen J. Haines, MD; Cormac O. Maher, MD; Corey Raffel, MD, PhD; Nathan R. Selden, MD, PhD

The seminar will present the evidentiary basis for the management of tethered spinal cords in childhood. It will highlight contemporary surgical techniques. It will emphasize unanswered questions and areas of controversy, including the concept of 'minimal' tethered cord.

Learning Objectives:

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

- Classify the various patterns of spinal dysraphism
- Discuss the risks of progressive neurological disability from spinal cord tethering associated with each pattern of dysraphism

- Select intraoperative and postoperative practices that minimize the risk of surgical complications in the treatment of tethered spinal cord
- Explain the treatment of a child with minimal imaging findings referred because of dysfunctional voiding

319**Improving Your Bottom Line**

Room 28E, San Diego Convention Center

Moderator:

James I. Ausman, MD, PhD

Panelists:

Saeed Bajwa, MD; Gregory B. Lanford, MD;
Troy D. Payner, 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. It 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

320**Spinal Motion Preservation – The Posterior Column Implants**

Room 32B, San Diego Convention Center

Moderator:

M. Samy Abdou, MD

Panelists:

Fred H. Geisler, MD, PhD; Luiz Pimenta, MD, PhD; Phillip A. Tibbs, MD

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.

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

321**R&F****Getting the Most Out of Your Residency**

Room 32A, San Diego Convention Center

Moderator:

Lawrence S. Chin, MD, FACS

Panelists:

Deborah L. Benzil, MD; M. Sean Grady, MD;
Jayant Jagannathan, MD; N. Scott
Litofsky, MD

This clinic is free to Residents, Fellows 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:

- Explain the residency application process
- Review ways to maximize residency for professional development
- Explain how to balance professional and personal development
- Develop strategies to maximize financial success during residency
- Discuss the future of neurosurgery

322

Vertebroplasty and Kyphoplasty: Indications, Controversies and Credentialing

Room 24A, San Diego Convention Center

Moderator:

Mick J. Perez-Cruet, MD

Panelists:

David J. Hart, MD; Andrew J. Ringer, MD
Michael Patrick Steinmetz, MD; Trent L. Tredway, MD

This seminar will focus on vertebroplasty (VP) and kyphoplasty (KP) techniques, hospital credentialing for performance of these procedures and identifying appropriate patients for each technique.

Learning Objectives:

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

- Discuss the indications for VP and KP
- Discuss the rationale for choosing VP or KP for a given patient
- Discuss hospital credentialing and delineation of privileges

323

N&PE

Management of Acute Spinal Cord Injury

Room 29D, San Diego Convention Center

Moderator:

Michael G. Fehlings, MD, PhD

Panelists:

Richard C. E. Anderson, MD; Charles Kuntz IV, MD; Michael Patrick Steinmetz, MD; 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

- Integrate current concepts of spinal cord injury into their practice

324

Cerebral Venous System: Surgical Considerations

Room 20BC, San Diego Convention Center

Moderator:

Albert L. Rhoton Jr., MD

Panelists:

Ossama Al-Mefty, MD; Giovanni Broggi, MD; Turker Kilic, MD, PhD; Laligam N. Sekhar, MD, FACS; Chandranath Sen, 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:

- Explain the venous hazards of intracranial surgery
- Recognize operative procedures to avoid injury and complications related to the major venous sinus intracranial veins, the cavernous sinus and jugular foramen
- Discuss the anatomy of the approaches to the cavernous sinus and jugular foramen

PLENARY SESSION III

9:45 AM–1:00 PM

Exhibit Hall D, San Diego Convention Center

Moderators:

Carl B. Heilman, MD; Matthew A. Howard III, MD

900

9:45–9:59 AM

Prospective Study of Cancer Control and Patient Reported Outcomes for Spinal Metastases Treated with Stereotactic Body Radiosurgery

Authors:

Eric L. Chang, MD; Almon S. Shiu, PhD; Patricia Grossman, RN; Pamela K. Allen, PhD; Xin Shelley Wang, PhD; Anita Mahajan, MD; David Kornguth, MD; Tito Mendoza, PhD; Charles Cleeland, PhD; Laurence D. Rhines, MD (Houston, TX)

Discussant:

Phillip A. Tibbs, MD

901

10:00–10:14 AM

The First 72 Hours of Brain Tissue Oxygenation Predicts Patient Outcome with Traumatic Brain Injury

Authors:

Evert Eriksson, MD; Jeffrey Barletta, PharmD; Bryan Figueroa, MD; Bruce Bonnell, MD; Chris Sloffer, MD; Wayne Vanderkolk, MD; Karen McAllen, PharmD; Mickey Ott, MD (Grand Rapids, MI)

Discussant:

Alex B. Valadka, MD

902

10:15–10:29 AM

Diffusion Tensor Imaging Based Language Fiber Tract Navigation

Authors:

Christopher Nimsky, MD, PhD; Daniela Kuhnt, MD; Boris Keller von, MD; Daniel Weigel, MD; Peter Grummich, PhD; Oliver Ganslandt, MD, PhD; Michael Buchfelder, MD, PhD (Erlangen, Germany)

Discussant:

Mitchel S. Berger, MD, FACS

903

10:30–10:44 AM

Functional Recovery in the Geriatric Population after Traumatic Spinal Cord Injury: Analysis of a Prospectively Accrued Database of 499 Patients

Authors:

Julio C. Furlan, PhD, MD (Toronto, Canada); Michael B. Bracken, PhD (New Haven, CT); Michael G. Fehlings, MD, PhD (Toronto, Canada)

Discussant:

Patrick W. Hitchon, MD

904

10:45–10:59 AM

Clinical and Angiographic Outcomes from Indirect Revascularization Surgery for Moyamoya Disease: Review of 63 Procedures

Authors:

Joshua R. Dusick, MD; Nestor R. Gonzalez, MD; Neil A. Martin, MD (Los Angeles, CA)

Discussant:

Gary K. Steinberg, MD, PhD

WFNS PRESENTATION

11:00–11:14 AM

Introduction By:

James R. Bean, MD

Speaker:

Jacques Brotchi, MD, PhD

RHOTON FAMILY LECTURE

11:15–11:50 AM

Introduction By:

James R. Bean, MD

Iraq, Afghanistan and Beyond: An Overview of the World Security Situation**Speaker:**

Admiral William Joseph Fallon

905

11:51 AM–12:04 PM

Complication Rates for 9,846 Lumbar Microdiscectomy Procedures. A Report of the Scoliosis Research Society Morbidity and Mortality Committee**Authors:**

Justin S. Smith, MD, PhD; Christopher I. Shaffrey, MD; Charles A. Sansur, MD; Kaiming Fu, MD, PhD (Charlottesville, VA); William F. Donaldson III, MD (Pittsburgh, PA); Joseph H. Perra, MD (Minneapolis, MN); Ram Mudiya, MD, MBA (Fountain Valley, CA); Theodore J. Choma, MD (Columbia, MO); Reinhard D. Zeller, MD (Toronto, Canada); Dennis R. Knapp, Jr, MD (Orlando, FL); Hilali H. Noordeen, FRCS (United Kingdom, London); Sigurd H. Berven, MD (San Francisco, CA); Michael J. Goytan, MD, FRCS; Oheneba Boachie-Adjei, MD (New York, NY)

Discussant:

Daniel K. Resnick, MD

906

12:05–12:19 PM

MRI Volumetric Extent of Contrast Enhancement and Resection in Oligodendroglial Tumors**Authors:**

Tejas Sankar, MD (Canada, Edmonton); Nina Zobenica, MSc; Lynn Ashby, MD; Adrienne C. Scheck, PhD; William R. Shapiro, MD; Joan Shapiro, PhD (Phoenix, AZ); Jeffrey Wilson, PhD (Tempe, AZ); Kris Smith, MD; Robert F. Spetzler, MD; Mark C. Preul, MD (Phoenix, AZ)

Discussant:

Timothy C. Ryken, MD

HUMANITARIAN AWARD

12:20–12:25 PM

Introduction By:

James R. Bean, MD

Speaker:

Armando J. Basso, MD, PhD

PRESIDENT'S ACKNOWLEDGEMENTS

12:26–12:35 PM

Speaker:

James R. Bean, MD

LOUISE EISENHARDT LECTURE

12:36–1:15 PM

Introduction By:

James R. Bean, MD

The Art of the Historical Novel: Making Fiction from Fact**Speaker:**

Geraldine Brooks

502**N&PE****Diminishing Professional Liability Exposure: Patient Safety, Error Disclosure, Enhancing Communication**

Room 25B, San Diego Convention Center

2:00–5:00 PM

Fee: \$100**Moderator:**

Jamie S. Ullman, MD

Health Policy and Professional Liability: An Overview

2:00–2:29 PM

Speaker:

John A. Kusske, MD

Managing Your Liability in Practice

2:30–2:59 PM

Speaker:

Stanley W. Fronczak, MD, JD, FACS

Avoiding Wrong-Site Surgery and Other Errors

3:00–3:29 PM

Speaker:

Jamie S. Ullman, MD

Nuts and Bolts of Error Disclosure

3:30–4:15 PM

Speaker:

Susan Marr

Closed Claims: Lessons Learned

4:16–5:30 PM

Speaker:

Julie Brightwell, RN, BSN, JD

Learning Objectives:

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

- Explain how to position neurosurgeons and their patient care teams to meet both day-to-day challenges and regulatory requirements by providing tips that will be useful in all aspects of neurosurgical practice
- Apply the disclosure of errors to patients and their families
- Debate the advantages of disclosure to improve patient communication and reduce incidence of litigation
- Outline patient safety issues and techniques to avoid errors and “near-misses” such as communication errors and wrong-site surgery

AANS/CNS CEREBROVASCULAR SECTION

Room 30CD, San Diego Convention Center

2:45–5:30 PM

Moderators:

Brian L. Hoh, MD; Sean D. Lavine, MD

907

2:45–2:51 PM

Occurrence of In-Stent Stenosis and/or Thrombosis after Enterprise-Assisted Aneurysm Treatment: Midterm Follow-Up of the Interstate Collaboration of Enterprise Stent-Coiling (ICES) Multicenter Registry**Authors:**

Kenneth V. Snyder, MD, PhD; J Mocco, MD, MS (Buffalo, NY); Felipe C. Albuquerque, MD (Phoenix, AZ); Bernard R. Bendok, MD (Chicago, IL); Alan S. Boulos, MD (Albany, NY); Jeffrey S. Carpenter, MD (Morgantown, WV); David J. Fiorella, MD, PhD (Phoenix, AZ); Brian L. Hoh, MD (Gainesville, FL); Jay U. Howington, MD (Savannah, GA); Kenneth M. Liebman, MD (Philadelphia, PA); Ansaar T. Rai, MD (Morgantown, WV);

Rafael Rodriguez-Mercado, MD (San Juan, PR); Adnan H. Siddiqui, MD, PhD (Buffalo, NY)

908 2:52–2:58 PM

Blocking Stromal Cell-Derived Factor 1a Blocks Recruitment of Bone Marrow-Derived Progenitor Cells, the Sole Source of Matrix Metalloproteinase-9, in a Murine Saccular Aneurysm Model

Authors:

Brian L. Hoh, MD; Erin N. Wilmer, BS; Koji Hosaka, PhD; Gregory J. Velat, MD; Marda Jorgensen, BS; Edward W. Scott, PhD (Gainesville, FL)

909 2:59–3:05 PM

Use of Intraventricular Tissue Plasminogen Activator in Patients with Aneurysmal Subarachnoid Hemorrhage

Authors:

Rohan Ramakrishna, MD; Dinesh Ramanathan, MD; Michael Souter, MD; Nancy Temkin, PhD; Chong Lee, MD; Basavaraj Ghodke, MD; Louis Kim, MD; Laligam Sekhar, MD (Seattle, WA)

910 3:06–3:12 PM

Alteration in Voltage-Dependent Calcium Channels in Dog Basilar Artery after Subarachnoid Hemorrhage

Authors:

Robert L. Macdonald, MD, PhD; Elena Nikitina, PhD; Babak S. Jahromi, MD, PhD (Toronto, Canada)

911 3:13–3:19 PM

The Effect of ABO Blood Type on the Formation of Cerebral Aneurysms and Arteriovenous Malformations

Authors:

Christopher A. Sarkiss, BS; David A. McArthur, PhD; Thomas C. Glenn, PhD; Neil A. Martin, MD (Los Angeles, CA)

DONAGHY LECTURE

3:20–3:24

Introduction By:

Jacques J. Morcos, MD, FRCS

Recipient:

Evandro De Oliveira, MD, PhD

SYMPOSIUM—AVM MANAGEMENT

Moderators:

Saleem I. Abdulrauf, MD; Aman B. Patel, MD

Hemorrhagic Disease Symposium

3:25–3:49 PM

Speaker:

Evandro de Oliveira, MD, PhD

When Should There be Endovascular

Treatment of Aneurysms?

3:50–3:59 PM

Speaker:

Joshua B. Bederson, MD

When Should Aneurysms Be Clipped?

4:00–4:09 PM

Speaker:

Jacques Moret, MD

DISCUSSION/CASE PRESENTATION

4:10–4:14 PM

Panel:

Sepideh Amin-Hanjani, MD; Joshua B. Bederson, MD; Jacques J. Morcos, MD, FRCS; Jacques Moret, MD; Fernando Vinuela, MD

Ischemic Disease Symposium

Moderators:

Saleem I. Abdulrauf, MD; Aman B. Patel, MD

Surgical—When Should Intracranial Occlusive Disease be Treated with Stenting?

4:15–4:24 PM

Speaker:

Sepideh Amin-Hanjani, MD

Ischemic—When Should Occlusive Disease be Treated with EC-IC Bypass?

4:25–4:34 PM

Speaker:

Fernando Vinuela, MD

DISCUSSION/CASE PRESENTATION

4:35–4:37 PM

Panel:

Sepideh Amin-Hanjani, MD; Joshua B. Bederson, MD; Jacques J. Morcos, MD, FRCS; Jacques Moret, MD; Fernando Vinuela, MD

912

4:38–4:44 PM

Restoring HOXA5 Expression Inhibits the Growth of Experimental Hemangiomas in the Brain

Authors:

Rodney Gabriel, BS; Yiqian Zhu, MD; Ileana Cuevas, PhD; Hua Su, MD; Qi Hao, PhD; William Young, MD; Guo-Yuan Yang, MD, PhD; Nancy Boudreau, PhD (San Francisco, CA)

913

4:45–4:51 PM

Elevated C-Reactive Protein is Associated with Increased Incidence of Angiographic Vasospasm in Patients with Aneurysmal Subarachnoid Hemorrhage

Authors:

Kostas N. Fountas, MD, PhD; Anastasia Tassiou, MD; Konstantinos N. Paterakis, MD, PhD; Eftychia Z. Kapsalaki, MD, PhD (Larisa, Greece); Gregory P. Lee, PhD (Augusta, GA); Arthur A. Grigorian, MD, PhD; Joe S. Robinson, MD, FACS (Macon, GA)

914

4:52–4:58 PM

Intracerebroventricular Administration of Tissue Plasminogen Activator Exacerbates Perihematomal Edema in Patients with Spontaneous Intraparenchymal Hemorrhage with Intraventricular Extension

Authors:

Andrew F. Ducruet, MD; Zachary L. Hickman, MD; Brad E. Zacharia, MD; Bartosz T. Grobelny, BA; Mason L. Yeh, BA; Kuang-Hua Guo; Hiroki Kimura; E. Sander Connolly Jr., MD (New York, NY)

915

4:59–5:05 PM

Identification of a Volume Occlusion Percentage Threshold Using a Real Time, Intra-Operative Tool (AngioCalc®) for the Prediction of Aneurysm Recanalization after Endovascular Treatment of Intracranial Aneurysms

Authors:

Zul Kaderali, MD; Hubert Lee, BSC; Thomas Marotta, MD; Walter Montanera, MD; R. Loch Macdonald, MD, PhD; Julian Spears, MD, FRCS (Toronto, Canada)

916 5:06–5:12 PM**Analysis of Extracranial-Intracranial Versus Intracranial-Intracranial Bypass for Complex Brain Aneurysms****Authors:**

Nader Sanai, MD; Zsolt Zador, MD; Michael T. Lawton, MD (San Francisco, CA)

917 5:13–5:19 PM**Neuronal and Astrocytic Apoptosis as a Possible Cause for Poor Prognosis after Subarachnoid Hemorrhage****Authors:**

Robert L. Macdonald, MD, PhD; Jinglu Ai, PhD; Ayako Kawashima, MD; Mohammed Sabri (Toronto, Canada)

918 5:20–5:26 PM**Inhibition of Stretch Activated Channels Disrupts Nitric Oxide Mediated Vascular Remodeling****Authors:**

Omar Tanweer, BA; Eleni Metaxa, PhD; Daniel S. Sternberg; Daniel D. Swartz, PhD; John Kolega, PhD; Adnan Siddiqui, MD; Hui Meng, PhD (Buffalo, NY)

AANS/CNS SECTION ON STEREOTACTIC AND FUNCTIONAL SURGERYRoom 31ABC, San Diego Convention Center
2:45–5:30 PM**Moderators:**

Aviva Abosch, MD, PhD; Michael G. Kaplitt, MD, PhD

SYMPOSIUM**NGF Therapy for Alzheimer's Disease**

2:45–2:59 PM

Speaker:

Mark H. Tuszynski, MD, PhD

DBS for Memory Enhancement: Theoretical Basis and Trial Design

3:00–3:14 PM

Speaker:

Alim L. Benabid, MD, PhD

CSF Shunting for Alzheimers: Clinical Results

3:15–3:29 PM

Speaker:

Gerald D. Silverberg, MD

QUESTION AND ANSWER

3:30–3:50 PM

928 3:51–4:00 PM**YNS Medical Student Award Limbic and Motor Function Comparison of Deep Brain Stimulation of the Zona Incerta and Subthalamic Nucleus****Authors:**

Anthony M. Burrows, BS; Paula D. Ravin, MD; Peter Novak, MD, PhD; Brian Dessureau, PhD; Joan Swearer, PhD; Julie G. Pilitsis, MD, PhD (Worcester, MA)

929 4:01–4:10 PM**Intracranial EEG for Neuronal Oscillatory Contingency During Cognitive Tasks****Authors:**

Kareem A. Zaghoul, MD, PhD; John F. Burke, BS; Joshua Jacobs, PhD; Jeremy Manning, BS; Brian Litt, MD; Michael J. Kahana, PhD; Gordon H. Baltuch, MD, PhD (Philadelphia, PA)

930 4:11–4:20 PM**Defining the Cortical Physiology of Ipsilateral Finger Movements and Neuroprosthetic Implications for Hemispheric Stroke****Authors:**

Eric C. Leuthardt, MD; Kimberly Wisneski, MS; Charles Gaona, MS; Mohit Sharma, MS; Zachary Freudenburg, MS; William Smart, PhD (St. Louis, MO)

931 4:21–4:30 PM**DBS-Implanted Parkinson's Disease Patients Show Better Olfaction than those Treated Medically****Authors:**

Mary Linton B. Peters, MS; Paula Ravin, MD; Peter Novak, MD, PhD; Joan Swearer, PhD; Jean King, PhD; Sathish Kumar Dundamadappa, MD; Julie G. Pilitsis, MD, PhD (Worcester, MA)

932 4:31–4:40 PM**Intracerebral Microdialysis During Deep Brain Stimulation Surgery for Parkinson's Disease****Authors:**

Ephraim Church, BA; Michaux Kilpatrick, MD, PhD; Michael B. Robinson, PhD; Irwin Lucki, PhD; Jurg L. Jaggi, PhD; Gordon H. Baltuch, MD, PhD (Philadelphia, PA)

933 4:41–4:50 PM**Diffusion Tensor Imaging in Syringomyelia: Assessment of Spinal Somatosensory Systems****Authors:**

Fabrice Parker, MD, PhD (Le Kremlin Bicêtre, France); Samar Hatem, MD (Université Catholique de Louvain, Belgium); Nadine Attal, MD, PhD (Inserm, France); Denis Ducreux, MD, PhD (Université Paris XI, Le Kremlin Bicêtre, France); Michèle Gautron (Inserm, France); Leon Plaghki, MD, PhD (Université Catholique de Louvain, Belgium); Adriano Yacubian-Fernandes, MD (Bauru, Brazil); Didier Bouhassira, MD, PhD (Inserm, France)

934 4:51–5:00 PM**Frameless Robotic Stereotactic Biopsy: Feasibility, Diagnostic Yield and Safety****Authors:**

Tarek A. Radwan, MD; Atman Desai, MD; David W. Roberts, MD (Lebanon, NH)

935 5:01–5:10 PM**Surgical Repositioning of Misplaced STN DBS Electrodes in Parkinson's Disease: Locations of Effective and Ineffective Leads****Authors:**

Robert M. Richardson, MD, PhD; Jill L. Ostrem, MD; Philip A. Starr, MD, PhD (San Francisco, CA)

936 5:11–5:20 PM

Comparison of Two Resective Strategies in Patients with Focal Epilepsy Associated with Cavernous Angiomas**Authors:**

Rebecca O'Dwyer, MD; Jorge Gonzalez-Martinez, MD, PhD; Andreas V. Alexopoulos, MD, MPH; Sean Nagel, MD; Tsu Lee Chen, MD; Imad M. Najm, MD; William Bingaman, MD (Cleveland, OH)

QUESTION AND ANSWER

5:21–5:30 PM

AANS/CNS SECTION ON NEUROTRAUMA

Room 30AB, San Diego Convention Center
2:45–5:30 PM

Moderators:

Geoff Manley, MD, PhD; David Okonkwo, MD, PhD

Codman 2009 Recipient Presentation

2:45–3:00 PM

Recipient:

Rageeb Hague, MD

938 3:01–3:15 PM

Synthes Resident Spine Award Using Hyaluronic Acid as a Scaffold to Promote Spinal Cord Regeneration**Authors:**

Martin Mortazavi MD; Doris Hom PhD; Nikolay Martirosyan, MD; Sergey Kushchayev, MD; Xukui Wang, PhD; Ketan Verma, MS; Nicholas Theodore, MD (Phoenix AZ); Volker KH Sonntag, MD; Alyssa Panitch, PhD (West Lafayette, IN); Mark C. Preul, MD (Phoenix, AZ)

939 3:16–3:30 PM

Synthes Resident Craniofacial Award Aquaporin-4 Protects Against Post-Traumatic Epilepsy by Promoting Astrocytic Glial Scar Formation in Mice**Authors:**

Daniel C. Lu, MD, PhD; Zsolt Zador, MD; Geoffrey T. Manley, MD, PhD (San Francisco, CA)

940 3:31–3:45 PM

Cerebral Glucose Measurements Reflect Alternative Metabolic Pathways Following Traumatic Brain Injury**Authors:**

Thomas C. Glenn, PhD; Daniel Hirt, BS; Jon Berg; Paul Vespa, MD; Neil A. Martin, MD (Los Angeles, CA)

941 3:46–4:00 PM

A Non-Invasive Intracranial Pressure Monitor Utilizing Modified Brainstem Auditory Responses**Authors:**

James L. Stone, MD, FACS; Ben Z. Roitberg, MD; Mateo Calderone-Arnulphi, MD; Sebastian Herrera, MD; Troy Munson, MD; Obina Emechebe-Kennedy, MD, PharmD; Venketesh Aiyagari, MD; Sean Ruland, DO (Chicago, IL)

SPECIAL SYMPOSIUM: "CURRENT CLINICAL TRIALS IN NEUROTRAUMA"**Current Active Clinical Trials in Traumatic Brain Injury**

4:01–4:20 PM

Speaker:

Peter David LeRoux, MD

Panel Debate: Should We Bother with Drug Trials in TBI?

4:21–4:40 PM

Current Active Clinical Trials in Spinal Cord Injury

4:41–5:00 PM

Speaker:

Michael G. Fehlings, MD, PhD

Timing of Surgical Decompression after Cervical Spinal Cord Injury

Panel Debate

5:01–5:15 PM

Discussion

5:16–5:30 PM

AANS/CNS SECTION ON SPINE

Room 20D, San Diego Convention Center
2:45–5:30 PM

SYMPOSIUM: SPINE SURGERY IN THE CHALLENGING PATIENT**Moderators:**

Charles Kuntz IV, MD; Christopher I. Shaffrey, MD

Craniovertebral Trauma

2:45–3:01 PM

Speaker:

Curtis A. Dickman, MD

Morbid Obesity

3:02–3:18 PM

Speaker:

Daniel K. Resnick, MD

Advanced Age and Osteoporosis

3:19–3:35 PM

Speaker:

Edward C. Benzel, MD

Spinal Column Infections

3:36–3:53 PM

Speaker:

Praveen V. Mummaneni, MD

Metastatic Disease

3:54–4:10 PM

Speaker:

Timothy C. Ryken, MD

Abstract Moderators:

Charles Kuntz IV, MD; Christopher I. Shaffrey, MD

920 4:11–4:20 PM

Surgical Treatment is Effective for Cervical Spondylotic Myelopathy: One Year Outcomes of a Multi-Center Prospective Study, with Independent Assessment, in 294 Patients**Authors:**

Michael G. Fehlings, MD, PhD (Toronto, Canada); Branko Kopjar, MD, PhD (Seattle, WA); Paul Arnold, MD (Kansas City, KS); Tim Yoon, MD (Atlanta, GA); Alexander Vaccaro, MD, PhD (Philadelphia, PA); Darrel Brodke, MD (Salt Lake City, UT); Jens Chapman, MD (Seattle, WA); Christopher Shaffrey, MD (Charlottesville, VA); Michael Janssen, DO (Denver, CO); Rick Sasso, MD (Indianapolis, IN); Eric Massicotte, MD (Toronto, Canada)

921 4:21–4:30 PM**2-Level Cervical Disc Arthroplasty: One-Year Clinical Results from 6 Centers in a Prospective Randomized IDE Trial****Author:**Todd H. Lanman, MD, FACS
(Beverly Hills, CA)**922** 4:31–4:40 PM**The Total Facet Arthroplasty System® (TFAS®) in the Treatment of Spinal Stenosis: Worldwide Experience with Longest Follow-Up of 36 Months****Authors:**

Khalid A. Sethi, MD (Johnson City, NY); Antonio Castellvi, MD (Tampa, FL); Scott Webb, DO (Clearwater, FL); Courtney Brown, MD (Golden, CO); Barton L. Sachs, MD (Plano, TX); Charles Wingo, MD (Tallahassee, FL); Michael Halperin, MD (Norwich, CT); David Wiles, MD (Johnson City, TN); Guillermo Bajares, MD; Alejandro Perez-Oliva, MD (Venezuela, Caracas); Radu Prejbeanu, MD, PhD; Ioan Branea, MD, PhD (Timisoara, Romania)

923 4:41–4:50 PM**A Modified Charlson Index as a Predictor of Pseudoarthrosis and Poor Clinical Outcomes Following Long-Segment Posterior Thoracolumbar Fusions****Authors:**

Kassandra Dassoulas, BS; Jayant Jagannathan, MD; Toomas Anton, MD; Charles A. Sansur, MD; Christopher I. Shaffrey, MD (Charlottesville, VA)

924 4:51–5:00 PM**Reliability of Digital Cervical Alignment Measurements in Patients with Cervical Myelopathy****Authors:**

Michael P. Steinmetz, MD; Chris Iannotti, MD, PhD; David Gwinn, MD (Cleveland, OH)

925 5:01–5:10 PM**Selective Cannabinoid CB2 Receptor Activation Promotes Motor and Autonomic Function Recovery Following Spinal Cord Injury****Authors:**

Joshua E. Heller, MD; Ming Zhang, MD, PhD; Hongbo Li, MD; Darric E. Baty, MD; Martin W. Adler, PhD; Doina Ganea, PhD; Christopher M. Loftus, MD, FACS; Jack I. Jallo, MD, PhD; Ronald F. Tuma, PhD (Philadelphia, PA)

926 5:11–5:20 PM**Long-Term Clinical and Radiographic Outcomes Following Single-Level Posterior Cervical Foraminotomy: A Single-Center Study with Minimum 5-Years Follow-Up****Authors:**

Jayant Jagannathan, MD; Christopher I. Shaffrey, MD; John A. Jane Sr., MD, PhD (Charlottesville, VA)

927 5:21–5:30 PM**Inflammatory Activation of Degenerative Human Disc Cells by Lymphocyte Product Interleukin-17****Authors:**

Mohammed F. Shamji, MD, PhD (Canada, Ottawa); Antonia Helbling; Jun Chen, PhD; Liufang Jing, MSc; Robert E. Isaacs, MD; Christopher R. Brown, MD; William J. Richardson, MD; Lori A. Setton, PhD (Durham, NC)

AANS/CNS SECTION ON TUMORS IIRoom 20BC, San Diego Convention Center
2:45–5:30 PM**Moderators:**

Manish K. Aghi, MD; Ennio Antonio Chiocca, MD, PhD

SYMPOSIUM: CLINICAL AND SCIENTIFIC ADVANCES IN ONCOLYTIC VIRUSES IN THE TREATMENT OF GLIOBLASTOMA

2:45–2:50 PM

Introduction By:

Manish K. Aghi, MD

Clinical Results with Replicating Adenovirus, a DNA Virus

2:51–3:05 PM

Speaker:

Frederick F. Lang Jr., MD

Clinical Results with Herpes Virus, a DNA Virus and Convection-Enhanced Delivery of Reovirus and RNA Virus

3:06–3:20 PM

Speaker:

James M. Markert Jr., MD

Clinical Results with Measles Virus, an RNA Virus

3:21–3:35 PM

Speaker:

Eva Galanis, MD

Panel Discussion and Wrap Up

3:36–3:50 PM

Speaker:

Ennio Antonio Chiocca, MD, PhD

ABSTRACT MODERATORS:

Michael Lim, MD; Andrew T. Parsa, MD, PhD

942 3:51–4:00 PM**Preuss Award****Human Bone Marrow-Derived Mesenchymal Stem Cells for Systemic Delivery of Oncolytic Adenovirus Delta-24-RGD to Gliomas****Author:**

Raymund L. Yong, MD, MS (Vancouver, Canada)

943 4:01–4:10 PM

Embryonic Stem Cell (ESC)-Derived Astrocytes Expressing Melanoma Differentiation Associated Gene-7 (mda-7/IL-24) Selectively Induce Growth Suppression, Apoptosis, and Radio-Sensitization in Malignant Gliomas

Authors:

Isabelle M. Germano, MD; Mahmud Uzzaman, MD; Luni Emdad, MD, PhD (New York, NY)

944 4:11–4:20 PM

**Synthes Skull Base Award
The Influence of Age at Diagnosis on the Histological Grading of Meningiomas**

Authors:

Jae Sung Park, MD; Burak Sade, MD; Joung Lee, MD (Cleveland, OH)

945 4:21–4:30 PM

**BrainLAB Community Neurosurgery Award
Long-Term Follow-Up, Results and Complications of the Middle Fossa Approach for Hearing Preservation in Acoustic Neuromas**

Authors:

Eric S. Nussbaum, MD; Jody L. Lowary, CRNP; Leslie A. Nussbaum, MD, PhD (Twin Cities, MN)

946 4:31–4:40 PM

A Comprehensive Review of Facial Nerve and Hearing Outcomes Following Vestibular Schwannoma Microsurgery

Authors:

Michael Sughrue, MD; Isaac Yang, MD; Derrick Aranda, MD; Andrew T. Parsa, MD, PhD (San Francisco, CA)

947 4:41–4:50 PM

Eloquent Tumor Location as Predictor of Long-Term Survival in Low Grade Gliomas and the Role of Functional Mapping

Authors:

Edward F. Chang, MD; Justin Smith, MD, PhD; Aaron Clark, MD, PhD; Nicholas Barbaro, MD; Michael McDermott, MD; Mitchel S. Berger, MD (San Francisco, CA)

948 4:51–5:00 PM

Morphotype and Autofluorescence Identify Self-Renewing and Tumor-Initiating Glioma Cells

Authors:

Ivan Radovanovic, MD, PhD; Denis Marino; Culbadu Cristina, PhD (Geneva, Switzerland); Hammou Marie-France; Mlynarik Vladimir, PhD (Lausanne, Switzerland); Nicolas de Tribolet, MD; Pierre-Yves Dietrich, MD (Geneva, Switzerland); Rolf Gruetter, MD; Monika Hegi, PhD (Lausanne, Switzerland); Virginie Clament, PhD (Geneva, Switzerland)

949 5:01–5:10 PM

Transfection of GBM Tumor Stem Cells with Iron Nanoparticles for MRI Tracking: Cell Viability, Differentiation, and Intracellular Localization

Authors:

Aalya H. Fatoo, BA; John A. Boockvar, MD (New York, NY)

950 5:11–5:20 PM

Glioma Therapy Using an Oncolytic Herpes Simplex Virus Armed with Tumstatin

Authors:

Deva S. Jeyaretna, MD; Hiro Wakimoto, MD, PhD; Jason Buhrman, BA; Toshihiko Kuroda, MD, PhD; Samuel Rabkin, PhD; Robert L. Martuza, MD (Boston, MA)

951 5:21–5:30 PM

Correlation of 1H-Magnetic Resonance Spectroscopy Chemical Shift Imaging (CSI) and C-Methionine Positron Emission Tomography for Hotspot Detection in Diffuse Gliomas

Authors:

Georg Widhalm, MD; Martin Krssak, PhD; Georgi Minchev, MD; Adelheid Woehrer, MD; Wolfgang Dietrich, MD; Thomas Czech, MD, Prof; Susanne Asenbaum, MD, Prof; Knosp Engelbert, MD, Prof; Johannes Hainfellner, MD, Prof; Daniela Prayer, MD, Prof; Stefan Wolfsberger, MD, Prof (Vienna, Austria)



REGISTRATION

All registration fees can be found on the individual registration forms available at the on-site registration desk. Each meeting registrant will receive one complimentary ticket to the Opening Reception on Sunday evening, May 3. Registered guest attendees will receive a complimentary ticket to the Opening Reception, as well as complimentary use of the Spouse/Guest Hospitality Suite, at the San Diego Marriott Hotel & Marina. Badges are required for admittance. Children 18 and over may register as guests at the spouse/guest registration rate for full participation in the spouse/guest program activities. Children under 18 years of age may register at no cost for the Annual Meeting. Registration will allow full participation in the guest program activities, excluding access to the exhibit hall. (Children under the age of 18 cannot be admitted to the Exhibit Hall—Please make arrangements for your child's supervision prior to visiting the Exhibit Hall.) For guest program activities, children under the age of 18 must be accompanied by an adult.

ON-SITE REGISTRATION HOURS

Friday, May 1	5:00 – 7:00 PM
Saturday, May 2	6:30 AM – 5:30 PM
Sunday, May 3	6:30 AM – 5:30 PM
Monday, May 4	6:30 AM – 4:00 PM
Tuesday, May 5	6:30 AM – 4:00 PM
Wednesday, May 6	6:30 AM – 3:30 PM

REGISTRATION: SPEAKERS

Complimentary registration is **not** provided for speakers. All speakers must register at the applicable registration rate.

ADMISSION REQUIREMENTS

Badges are required for admission to scientific sessions, exhibits, and the AANS Guest Hospitality Suite. Badges are distributed at the time of registration. Participants of the 2009 AANS Annual Meeting are identified by the following badge colors:

- Physician Attendee – *Yellow*
- Residents/Fellow/Medical Students – *White*
- Physician Extenders (Nurses, PA's and Allied Health) – *Green*
- Spouse/Guest – *Red*
- Exhibitor – *Blue*
- Press – *Gray*
- Staff – *Purple*

There will be a \$25 fee to replace all lost or forgotten medical registrant badges and tickets.

E-MAIL STATIONS

Located in the Resource Center, booth #1135 of the San Diego Convention Center.

AANS SHUTTLE SERVICE

The AANS will provide shuttle service at regular intervals between the San Diego Convention Center and the US Grant and Westgate. The San Diego Marriott Hotel & Marina, Manchester Grand Hyatt, Hilton San Diego Bayfront, Hilton San Diego Gaslamp Quarter, Omni San Diego Hotel, Hotel Solamar and Hard Rock Hotel, are within walking distance of the convention center. A shuttle schedule will be posted in the lobby of each of our hotels and the San Diego Convention Center.

AANS Shuttle Hours

Shuttles will run to and from the Convention Center, Hall E and the US Grant and Westgate Hotels only. All other AANS official annual meeting hotels are within walking distance.

Friday, May 1

4:45 PM–7:15 PM Every 30 minutes

Saturday, May 2

6:30 AM–8:00 AM Every 15 minutes
8:00 AM–3:30 PM Every 30 minutes
3:30 PM–5:30 PM* Every 15 minutes

Sunday, May 3

6:30 AM–8:00 AM Every 15 minutes
8:00 AM–3:30 PM Every 30 minutes
3:30 PM–5:30 PM* Every 15 minutes

Monday, May 4

6:30 AM–9:00 AM Every 15 minutes
9:00 AM–3:30 PM Every 30 minutes
3:30 PM–5:30 PM* Every 15 minutes

Tuesday, May 5

6:30 AM–9:00 AM Every 15 minutes
9:00 AM–3:30 PM Every 30 minutes
3:30 PM–5:30 PM* Every 15 minutes

Wednesday, May 6

6:30 AM–9:00 AM Every 15 minutes
9:00 AM–3:30 PM Every 30 minutes
3:30 AM–5:30 PM* Every 15 minutes

*Denotes last shuttle bus from Convention Center

Pickup Locations:

US Grant Hotel – 4th Avenue side of Hotel
Westgate Hotel – Broadway at 2nd Avenue
Convention Center – Driveway at Hall E

SPEAKER READY ROOM

The Speaker Ready Room is located in Room 23C of the San Diego Convention Center and is open during the following hours:

Saturday, May 2	7:00 AM–5:00 PM
Sunday, May 3	7:00 AM–5:00 PM
Monday, May 4	6:30 AM–5:00 PM
Tuesday, May 5	6:30 AM–5:00 PM
Wednesday, May 6	6:30 AM–5:00 PM

BUSINESS CENTER

Full-service FedEx/Kinko's is located outside Hall D.

MESSAGE CENTER

AANS will provide a Message Center on the ground level in the registration area, San Diego Convention Center. Messages can be left for meeting attendees by calling (619) 525-6260 beginning Friday, May 1, 5:00 PM through Wednesday, May 6 at 3:30 PM.

AANS OFFICE

Have a question or need assistance? Stop by the AANS Office located in Room 26AB at the San Diego Convention Center. The office will be open 8:00 AM–5:00 PM Saturday, May 2 through Wednesday, May 6.

AANS/CNS SECTIONS

For up-to-date information on the AANS/CNS Sections, visit booth #1148. Important information regarding membership and upcoming meetings is available.

AANS PRESS ROOM

The Press Room is located in Room 23B in the San Diego Convention Center. It is open Monday, May 4 through Wednesday, May 5, 8:30 AM to 5:00 PM daily. AANS policy does not permit any exhibitor or outside promotional materials in the Press Room.

ELECTRONIC POSTERS

All posters will be presented electronically at individual computer stations and are organized by author, number or topic,

dependant upon your preference and can be viewed throughout the convention week beginning on Friday, May 1 at 5:00 PM through Wednesday, May 6 at 5:30 PM.

Stations will be in the Registration Area, 20D Foyer and in Exhibit Hall D of the San Diego Convention Center.

COUNCIL OF STATE NEUROSURGICAL SOCIETIES (CSNS)

The semi-annual meeting of the Council of State Neurosurgical Societies (CSNS) will be held on Friday, May 1st and Saturday, May 2nd at the San Diego Marriott Hotel & Marina.

EVALUATIONS

The daily and overall evaluations again will be sent electronically immediately following the Annual Meeting.

PROGRAM AGENDAS AND FACULTY

As we continue to improve the quality of your educational experiences, agendas are subject to change and the AANS may also substitute faculty with comparable expertise.

FIRST AID

The First Aid Station will be located in Hall "H" Lobby, under the escalator.

Dates/Hours of Operation:

Wednesday, April 29	7:00 AM–6:00 PM
Thursday, April 30	7:00 AM–6:00 PM
Friday, May 1	7:00 AM–8:00 PM
Saturday, May 2	6:30 AM–9:00 PM
Sunday, May 3	6:30 AM–10:00 PM
Monday, May 4	6:00 AM–6:00 PM
Tuesday, May 5	6:00 AM–6:00 PM
Wednesday, May 6	6:00 AM–10:00 PM
Thursday, May 7	8:00 AM–12:00 PM

MARSHALS' PROGRAM

Want to attend practical clinics and breakfast seminars for free? Please see page 27 for more information.

FOOD SERVICE LOCATIONS

Concession stands will be available in the rear of Exhibit Halls E and F. Various carts and stands are available from Saturday, May 2 through Wednesday, May 6 throughout the San Diego Convention Center.

ACCESSIBILITY

The San Diego Convention Center is committed to accommodating the needs of individuals with disabilities in accordance with the Americans with Disabilities Act. Elevators are located in various areas around the San Diego Convention Center, including the exhibit hall, and all the meeting rooms are wheelchair accessible. There is designated parking and services for the sight and hearing impaired. Wheelchairs and scooters are available at a fee and can be reserved prior to your arrival by contacting Scootaround at (888) 441-7575 or visit their web site at www.scootaround.com. Daily and weekly rates are available and include delivery and pickup to and from your hotel.

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 visit us in Room 26AB, San Diego Convention Center.

ATTIRE

Attire for the 77th Annual Meeting is business or business casual depending on the nature of the event.

BAGGAGE CHECK

Baggage and coat check will be available in Lobby D in the AANS Registration area during the following times:

Tuesday, May 5	6:00 AM–5:45 PM
Wednesday, May 6	6:00 AM–5:45 PM

AIRLINE BAGGAGE CHECK SERVICE

"Make Travel Easier" Remote Airline Check-in Service

That's right! You can now check-in at the San Diego Convention Center and bypass the airport lines! This unique service allows you to check your bags and receive your boarding pass at the convention center, leaving you more time to visit the convention floor or take in more of what downtown San Diego has to offer.

Participating Airlines (Domestic flights departing after 12:00 noon only)

AirTran, Alaska, American, Continental, Delta, jetBlue, Northwest, United, US Airways

Rates: \$10 per passenger (pre-enrolled)
\$15 per passenger (Day of Departure)
(Baggage Check-in constraints as designate by airline policy. Payment requested in Cash only.)

Hours of Operation and location of Service:

- Tuesday, May 5, 6:00 AM–2:00 PM
Lobby H
- Wednesday, May 6, 6:00 AM–2:00 PM
Lobby H

Pre-Enrollment: In order to expedite the check-in process, we would strongly encourage that you pre-enroll for our service. Simply log onto our pre-enrollment website and following a few simple steps:
<https://onvoy.arincmuse.net/rps/>

Event Code: 15037

Password: aans

Safe and Secure

- The first TSA-approved remote skycap service.
- All agents are highly trained and credentialed to issue boarding passes and print bag tags on demand.
- Proprietary sophisticated technology is used to ensure accurate, safe and secure multi-airline baggage check-in and transport to the airport.

Flights may be checked in anytime the day of departure. Luggage must be checked a minimum of three (3) hours before scheduled flight departure.

Questions or Comments on the service may be directed to SAN@airportbags.com. Please make sure to reference AANS at the San Diego Convention Center.

CELL PHONES AND PAGERS

Cell phones and pagers seem to be a necessity, but a ringing phone or pager beeping during an educational session is not only distracting to the audience but also to the speaker(s). Please place your cell phone on vibrate, or turn it off as a courtesy to others. Also, if you must make a call, please step outside the meeting room.

NO SMOKING POLICY

As of January 1, 2008, smoking will not be allowed in California restaurants, bars, nightclubs, work places and all public buildings. Smoking is prohibited within 15 feet of any entrance.

SAFETY

Do NOT go to Tijuana when you are in San Diego. Tijuana is not a safe place to visit while you are here. Also remember to remove your name badge when walking the city.

HEADQUARTERS HOTEL

San Diego Marriott Hotel & Marina
333 West Harbor Drive
San Diego, California 92101 USA
(619) 234-1500
www.marriott.com

ADDITIONAL AANS OFFICIAL HOTELS

Hard Rock Hotel San Diego
207 Fifth Avenue
San Diego, California 92101
(619) 702-3000
www.hardrockhotelsd.com

Hilton San Diego Bayfront
One Park Boulevard
San Diego, California 92101
(619) 564-3333
www.hilton.com

Hilton San Diego Gaslamp Quarter
401 K Street
San Diego, California 92101
(619) 231-4040
www.hilton.com

Hotel Solamar
435 6th Avenue
San Diego, California 92101
(619) 819-9500
www.hotelsolamar.com

Manchester Grand Hyatt
One Market Place
San Diego, California 92101
(619) 232-1234
www.manchestergrand.hyatt.com

Omni San Diego Hotel
675 L Street
San Diego, California 92101
(619) 231-6664
www.omnihotels.com

US Grant
326 Broadway
San Diego, California 92101
(619) 232-3121
www.usgrant.net

Westgate Hotel
1055 Second Avenue
San Diego, California 92101
(619) 238-1818
www.westgatehotel.com

TOURS & ATTRACTION TICKETS

The 2009 Tour and Optional Events Program have been arranged by ACCESS Destination Services. Signup for guest tours and optional evening events (except the Opening Reception, History Section Dinner and International Reception) are available for purchase at the Tour Desk located in the lobby, across from Starbucks at the San Diego Marriott Hotel & Marina. All tours will depart from Marriott Hall Drive - Lobby Level, North Tower of the San Diego Marriott Hotel & Marina. Individuals who purchased tours in advance will be placed on a list and confirm upon departure.

Tour Desk Hours are as follows:

Saturday, May 2	12:00–4:00 PM
Sunday, May 3	7:30 AM–4:00 PM
Monday, May 4	7:30 AM–4:00 PM
Tuesday, May 5	7:30 AM–4:00 PM
Wednesday, May 6	7:30 AM–4:00 PM

SPOUSE/GUEST HOSPITALITY SUITE

Registered spouses and guests are invited to relax, visit with friends, enjoy refreshments, and wait for tour departures in the AANS Spouse/Guest Hospitality Suite located at the San Diego Marriott Hotel & Marina, Seaview Room. Meet new friends and greet longtime acquaintances.

Complimentary continental breakfast will be served each morning from 7:30-10:00 AM. Beverages will be available throughout the day. The suite will be open during the following hours:

Sunday, May 3	7:30 AM–4:00 PM
Monday, May 4	7:30 AM–4:00 PM
Tuesday, May 5	7:30 AM–4:00 PM
Wednesday, May 6	7:30 AM–4:00 PM

Admittance to the Spouse/Guest Hospitality Suite is by spouse/guest badge only. Children must be accompanied by a registered spouse or guest with an AANS name badge.

TICKET SALES

Tickets for the Opening Reception, Practical Clinics, Breakfast Seminars, Afternoon Sessions, Tumor Section Dinner and the History Section Dinner are available for purchase in the Registration Area at the San Diego Convention Center.

Tickets for area attractions, guest tours and optional evening events are available for purchase at the Tour Desk located in the lobby, across from the Starbucks at the San Diego Marriott Hotel & Marina

RESTAURANT RESERVATIONS/SAN DIEGO VISITOR INFORMATION

Lobby E, San Diego Convention Center
Phone: 619-525-5616

Friday, May 1	3:00–7:00 PM
Saturday, May 2	9:00 AM–6:00 PM
Sunday, May 3	9:00 AM–6:00 PM
Monday, May 4	9:00 AM–6:00 PM
Tuesday, May 5	9:00 AM–6:00 PM
Wednesday, May 6	9:00 AM–4:00 PM

CHILD CARE SERVICES

Marion's Childcare, Inc.
Amy Gray
(619) 303-4379
amy@playtimepros.com

Kiddy Corp.
(858) 455-1718
mandy@kiddiecorp.com

The AANS is not affiliated with and is not endorsing the services of these companies. Note: Children under the age of 18 are not permitted in the Exhibit Hall. Please make arrangements for your child's supervision prior to visiting the Exhibit Hall.

PUBLIC TRANSPORTATION

MTS buses, trolleys and coasters provide convenient transportation throughout San Diego County. Travel to and from the airport, all shopping centers, attractions, beaches, hotels and Mexico. Bus schedules differ, but most hotels and attractions have service every 15 to 20 minutes. The San Diego Trolley runs every 15 minutes throughout most of the day and 30 minutes in the evening. The North County Coaster runs 43 miles along the coast with station stops in downtown San Diego, Old Town, Solana Beach, Encinitas, Carlsbad and Oceanside. All MTS buses, trolleys and coasters are equipped with wheelchair lifts. For schedule and fare information contact the Metropolitan Transit System at (800) COMMUTE or visit their website at www.sdcommute.com

FUTURE MEETINGS

Start planning early by visiting the San Diego Convention and Visitors Bureau booth in the registration area.

XIV World Congress of Neurological Surgery of the World Federation of Neurosurgical Societies
Boston, MA
August 30–September 4, 2009

78th AANS Annual Meeting
Philadelphia, PA
May 1–5, 2010

79th AANS Annual Meeting
Denver, CO
April 9–13, 2011

80th AANS Annual Meeting
Miami, FL
April 14–18, 2012

81st AANS Annual Meeting
New Orleans, LA
April 27–May 1, 2013

82nd AANS Annual Meeting
San Francisco, CA
April 12–16, 2014



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- participation in programs such as personalized online CME tracking, malpractice insurance program and AANS online case studies.
- earning up to 18 Category 1 CME credits, per year through Neurosurgical Focus
- Searchable Online AANS Membership Directory (in MyAANS.org)

Plus, as the spokesorganization for neurosurgery, the AANS is committed to raising awareness of the specialty by:

- Aggressively advocating for medical liability reform
- Actively campaigning to maximize Medicare and other physician reimbursement and achieve Medicare reform
- Working to implement beneficial CPT coding changes and policies
- Educating the general public and other medical specialists about neurosurgery

Categories of Membership

Active category is for neurosurgeons who are American Board of Neurological Surgery (ABNS), Royal College of Physicians and Surgeons of Canada (RCPSC), or Mexican Council of Neurological Surgeons (MCNS) certified and residing in North America.

Active Provisional category is for the neurosurgeon who has completed a neurosurgery residency training program approved by the ABNS, RCPSC, or MCNS within the past five years and has not yet met the certification requirements.

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 necessary, residents and fellows in Canada and Mexico are encouraged to register with AANS member services to insure their inclusion.

International membership is for those who do not qualify as an Active member by virtue of their residency or training and who have completed a formal neurosurgical training program as determined by, and suitable to, the Board of Directors.

International Resident/Fellow category is for residents or fellows who are enrolled in a verifiable non-North American neurosurgical 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 an AANS member neurosurgeon.

For more information visit the AANS Resource Center in booth #1135 in the Exhibit Hall or contact us at:

AANS Member Services Department
5550 Meadowbrook Drive
Rolling Meadows, IL 60008-3852
Phone: (847) 378-0500
Fax: (847) 378-0600
Toll-free: (888) 566-AANS (2267)
E-mail: info@aans.org

Passed ABNS Boards in 2008 and Promoted to Active Members (122)

Leslie J. R. Acakpo-Satchivi PhD, MD
Peter Douglas Angevine, MD
Lars Anker, MD
Hans E. Bakken, MD
Gregory William Balturshot, MD
Nicholas C. Bambakidis, MD
Jason T. Banks, MD
Bryan B. Barnes, MD
Sabatino Bianco, MD
John A. Campbell, MD
Matthew Y. Chang, MD
Richard E. Clatterbuck, MD, PhD
Benjamin R. Cohen, MD
Patrick J. Connolly, MD
Shon W. Cook, MD
Patrick B. Cooper, MD
Edwin J. Cunningham, MD
Daniel J. Curry, MD
Shekhar A. Dagam, MD
Elias Dagnew, MD
Amos O. Dare, MD
Joseph Andrew DeMattia, MD
Praveen Deshmukh, MD
Ara Jason Deukmedjian, MD
John R. Dickerson, MD
Sanat Dixit, MD
Egon M.R. Doppenberg, MD
Zeena Dorai, MD
Jorge Luis Eller, MD
Ira M. Garonzik, MD
Mark S. Gerber, MD
Wayne M. Gluf, MD
Craig Robert Goldberg, MD
Lance Eugene Gravely, MD
Mark R. Harrigan, MD
Anthony E. Harris, MD, PhD
Odette Althea Harris, MD, MPH
Roger Hartl, MD
Brian L. Hoh, MD
Devon A. Hoover, MD
Paul A. House, MD
John L. Hudson, MD, PhD

Brian A. Iuliano, MD
 Avery M. Jackson III, MD
 Thad R. Jackson, MD
 John A. Jane Jr., MD
 Seth S. Joseffer, MD
 Christopher G. Kalthorn, MD
 Jordi X. Kellogg, MD, PC
 Richard L. Kern Jr., MD
 Saad Abul Khairi, MD
 Paul Klimo Jr., MD
 Brian H. Kopell, MD
 Robert J. Kowalski, MD
 James T. Kryzanski, MD
 Scott C. Kutz, MD
 Hoang N. Le, MD
 Sung Hoon Lee, MD
 Armond L. Levy, MD
 Benjamin C. Ling, MD
 Caleb R. Lippman, MD
 Erwin Lo, MD
 Alan P. Lozier, MD
 Samuel D. Macomson, MD
 Anthony V. Maioriello, MD
 Kyle J. Mangels, MD
 J. Nozipo Maraire, MD
 Thomas K. Mattingly, MD
 Marius Maxwell, MD, PhD
 Christopher M. McPherson, MD
 Richard J. Meagher, MD
 Jean-Pierre Mobasser, MD
 Thomas John Morrison III, MD
 Jenny Jasbir Multani, MD
 Remi Nader, MD
 E. Lee Nelson III, MD
 Kent C. New, MD, PhD
 David B. Niemann, MD
 Henry F. Pallatroni III, MD
 Andrew Thomas Parsa, MD, PhD
 Bryan M. Pereira, MD
 Kenneth O. Price, MD
 Benjamin J. Remington, MD
 Stephen M. Russell, MD
 Donna A. Saatman, MD
 Michael A. Sandquist, MD
 Richard P. Schlenk, MD
 Carrie Lee Schmitt, MD
 Khalid A. Sethi, MD
 Mark R. Shaya, MD
 Jason P. Sheehan, MD
 John M. Shutack, MD
 Marco T. Silva, MD
 John K. Song, MD
 Caple A. Spence, MD
 Debra L. Steele, MD
 Karin R. Swartz, MD
 Christopher K. Taleghani, MD

MEMBERSHIP DUES

Category	Dues	Journal of Neurosurgery
Active & Active Provisional		
United States	\$830	Included
Military	\$500	Included
Canada/Mexico	\$465	Included
Lifetime	\$0	Upon Request
International		
Non-North American Countries	\$155	\$190 (Optional)
Developing Countries	\$75	not available at this dues level
Resident/Fellow		
United States/Canada/Mexico	\$0	Included
International Resident/Fellow		
	\$0	Online Included Paper - \$190 (Optional)
Associate		
Non-Neurosurgeon Physician	\$135	\$200 (Optional)
Nurse, Nurse Practitioner, Physician Assistant	\$135	\$85 (Optional)
Allied		
Surgical Assistant	\$85	\$85 (Optional)
Neurosurgical Office Staff	\$85	\$85 (Optional)

AANS MEMBERSHIP BY CATEGORY

as of March 4, 2009	
Active	3017
Active Provisional	485
Resident/Fellow	1264
International	689
International Resident/Fellow	115
Honorary	19
Lifetime	1677
Associate	302
Allied	6
Pending	52
Total AANS Membership	7626

Christopher L. Taylor, MD
 Francesca D. Tekula, MD
 Willard D. Thompson Jr., MD
 William E. Thorell, MD
 Daniel J. Tomes, MD
 G. Edward Vates, MD, PhD
 Cornelia S. von Koch, MD, PhD
 Sabrina M. Walski-Easton, MD
 Daniel Ezra Walzman, MD
 William E. Whitehead, MD, MPH
 Timothy M. Wiebe, MD
 Matthew Paul Wilson, MD
 Peter Witt, MD
 Charles L. Wolff III, MD
 Jean-Paul Wolinsky, MD
 Henry H. Woo, MD
 Lynda Jun-san Yang, MD, PhD
 Kevin Chi-Kai Yao, MD
 Alois Zauner, MD
 Wylie H. Zhu, MD, PhD
 Gregory J. Zipfel, MD
 Martin Zonenshayn, MD
 Alexander Zouros, MD
 Geoffrey P. Zubay, MD

New Active Members (34)

Javier Amadeo, MD, PhD
 Melfort Richard Boulton, MD, PhD
 Jean-Louis R. Caron, MD, FRCSC
 John A. Clough, MD
 George E. DePhillips, MD
 Emad N. Eskandar, MD
 Hector Humberto Gomez Acevedo, MD
 Adam Olding Hebb, MD
 Jonathan R. Jagid, MD
 Babak S. Jahromi, MD, PhD
 Ric E. Jensen, MD, PhD
 Karen Margaret Johnston, MD, PhD
 Jennifer C. Kernan, MD
 Max K. Kole, MD
 Abhaya Vivek Kulkarni, MD, FRCS
 Anil Kumar, MD, FRCS
 Michel Lacroix, MD
 Paul S. Larson, MD
 James J. Lynch, MD
 Adel M. Malek, MD, PhD
 Yzabel France Michaud, MD
 Oisín R. O'Neill, MD, FRCS
 Eduardo J. Perez, MD
 Kevin Petrecca, MD, PhD
 Eric Roger, MD
 Aldo M. Rosemblat, MD
 Jose Manuel Sandoval Rivera, MD
 Robert Schapiro, MD
 Sheila Kumari Singh, MD
 Sivasupiramaniam Sriharan, MBChB, FRCS

David A. Steven, MD, FRCS(C)
 Wale (Olawale) A. R. Sulaiman, MD, PhD
 Izabela Tarasiewicz, MD
 Gus G. Varnavas, MD

New Active Provisional (115)

Khalid Mohmud Abbed, MD
 George A. Alsina, MD
 Juan Alzate, MD
 Jeremy W. Amps, MD
 Toomas Anton, MD
 Dave S. Atteberry, MD
 Syed Shabaz Azeem, MD
 Mohammed Ali Aziz-Sultan, MD
 Jesse D. Babbitz, MD
 Carlos A. Bagley, MD
 Andrew Beaumont, MD, PhD
 Andrew V. Beykovsky, MD
 Hayden M.K. Boyce, MD
 Cameron Walter Brennan, MD
 Ruth E. Bristol, MD
 Samuel R. Browd, MD, PhD
 John Bennett Butler, MD
 John Grant Buttram Jr., MD
 Ali Bydon, MD
 Stephen Scott Campbell, MD
 Clark C. Chen, MD, PhD
 Shabbar F. Danish, MD
 Duane W. Densler, MD
 Aclan Dogan, MD
 John C. Drygas, MD
 Kristine Dziurzynski, MD
 Sonia V. Eden, MD
 Samer K. Elbabaa, MD
 Bryan E. Figueroa, MD
 John Robert Floyd II, MD
 Anand V. Germanwala, MD
 Jonathan E. Gilhooly, MD
 Pierre S. Girgis, MD
 Jorge Gonzalez-Cruz, MD
 Shankar P. Gopinath, MD
 Pankaj Anil Gore, MD
 Peter Michael Grossi, MD
 Bharat Guthikonda, MD
 John Douglas Hain, MD
 Todd L. Harshbarger, MD
 Matthew A. Hunt, MD
 Avery M. Jackson III, MD
 Stuart Taylor Jarrell, MD
 Keyne K. Johnson, MD
 Matthew R. Johnson, MD
 Michele Marie Johnson, MD
 Sarah C. Jost, MD
 Adam S. Kanter, MD
 Syed Karim, MD
 Stefan S. Kim, MD

Nevra S. King, MD
 Christopher J. Koebbe, MD
 Yu-Hung Kuo, MD, PhD
 Herman Christopher Lawson, MD
 Jeffrey A. Lee, MD
 Eric Claude Leuthardt, MD
 Jean-Christophe Leveque, MD
 Nicholas B. Levine, MD
 Roger A. Lichtenbaum, MD
 Peter George Liechty, MD
 David Delmar Limbrick, MD, PhD
 Dean D. Lin, MD
 Adam C. Lipson, MD
 Christian S. Lothes, MD
 Chriss A. Mack, MD
 Thomas C. Manning, MD, PhD
 Julian A. Mattiello, MD, PhD
 Sean A. McNatt, MD
 Joshua Eric Medow, MD
 Vincent J. Miele, MD
 James C. Miller, MD
 Jonathan P. Miller, MD
 Michael Joseph Musacchio Jr., MD
 Malini Visalam Narayanan, MD
 Christopher Neumann, MD
 Tann A. Nichols, MD
 Bryan C. Oh, MD
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 Aditya S. Pandey, MD
 Todd A. Patrick, MD, PhD
 Bryan M. Pereira, MD
 Michael James Petr, MD, PhD
 Nicholas Heilman Post, MD
 Chad J. Prusmack, MD
 Ali I. Raja, MD, MS
 Christian N. Ramsey III, MD
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 Richard B. Rhiew, MD, PhD
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 Sepehr Brian Sani, MD
 Rishi N. Sheth, MD
 Anthony H. Sin, MD
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 Michael Louis Smith, MD
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 John Spooner, MD
 Phillip B. Storm, MD
 Michael E. Sturgill, MD
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 Francesca D. Tekula, MD
 Lee Eric Tessler, MD
 Michael E. Tobias, MD
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 Talmadge Trammell, MD
 Jason Edward Tullis, MD

Juan Santiago Uribe, MD
 Huan J. Wang, MD
 Jason Andrew Weaver, MD
 Sharon Webb, MD
 Nicholas M. Wetjen, MD
 Elbert Asa White IV, MD
 Peter Witt, MD
 Ashraf Samy Youssef, MD

New International Members (64)

Naqeeb Ullah Achakzai, MD, FCPS
 Marcus Andre Acioy, MD
 Ibrahim Ahmed, MD
 Ali Akhaddar, MD
 Jamal Mohmd Al-Otri, MBBS, BSc
 Seyed Mohammadreza Alinaghimadah, MD
 Kwang-Ju Bae, MD
 Arnold Bok, MD
 Oliver Bozinov, MD
 Schalk Willem Burger, MBChB
 Aadil Chagla, MSMCh
 Mazen Kassab Bashi Dahhan, MD
 Feerk de Beer, MD
 Jean Goncalves de Oliveira, MD, PhD
 Jacques du Plessis, MD
 Kassem El-Shunnar, MD
 Anthony Graham Fieggen, MD
 Ramiro Miguel Garcia Perales, MD
 Atul Goel, MD
 Edward Lawrence Gurnell, MBChB
 Anwer Noori Hafdh, MD, PhD
 Diogenes Augusto Harris II, MD
 Giancarlo Hernandez Leon, MD
 Yoshitaka Hirano, MD
 Eelco Wieger Hoving, MD, PhD
 Ari Sami Hussain Nadhim, MD, PhD
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 Hiroshi Inoue, MD
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 Thomas Kretschmer, MD, PhD
 Yoshiaki Kumon, MD
 Kosuke Kuribayashi, MD
 Manoel Baldoino Leal Filho, MD
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 Ying-Chao Lin, MD
 Hubiel J. Lopez, MD
 Khalid Shoukr Mahmood, MBChB
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 Ramesh Teegala, MD
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 Eka Julianta Wahjoepramono, MD
 Abrar Ahad Wani, MBChB
 Ryo Yoshimura, MD
 Bijan Zamanizadeh, MD
 Ji-Zong Zhao, MD

New Resident Members (240)

Dana E. Adkins, MD
 Tamir Ailon, MD
 Mohammad Al Kutbi, MD
 Abdulaziz Al-Ali, MD
 Soha Al-Omar, MD
 Nabeel Saud Al-Shafai, MD
 George Al-Shamy, MD
 Nasrin Nadine Aldawoody, MD
 Wisam Mostafa Alissawi, MD
 Ryan Alkins, MD
 Anna Marie Allred, MD
 Abdullah Alobaid, MD
 Mohammad Mofreh Altaleb, MD
 Chiazio S. Amene, MD
 Ramsey R. Ashour, MD
 Walid Ismail El-Shahat Aly Attia, MD, PhD
 Robert Emerson Ayer, MD
 Farhad Feraydoon Bahrassa, MD
 John Carlo Barr, MD
 James Barrese, MD
 Andrey Belayev, MD
 Craig Steven Berg Jr., MD
 Bradley N. Bohnstedt, MD
 Christopher Michael Bonfield, MD
 Scott Michael Boswell, MD
 John Anthony Braca III, MD
 Colin Buchanan, MD
 Aileen Catherine Cangiano-Heath, MD
 Jason Chang, MD
 Navjot Chaudhary, MD
 Han-Chiao Isaac Chen, MD
 Rohan Chitale, MD
 Michael Jose Cirivello, MD
 Justin Charles Clark, MD
 Joseph Andrew Cochran, MD
 Mustafa Efkan Colpan, MD

David Edward Connor, DO
 Victor Correa Correa, MD
 J. Bridger Cox, MD
 Katharine Margaret Cronk, MD
 Jose David Cuenca Rivas, MD
 David John Daniels, MD
 Justin Todd Davis, MD
 Armen R. Deukmedjian, MD
 Brian J. Dlouhy, MD
 Zachary H. Dodd, MD
 Alexander Drofa, MD
 Justin Allen Dye, MD
 Khaled Effendi, MD
 Michael John Ellis, MD
 Obinna C. Emechebe-Kennedy, MD
 John A. Engler, MD
 Faris Fakhoury, MD
 Chad William Farley, MD
 Peter Edward Fecci, MD
 Orta Montejano Francisco Javier, MD
 Harrison Gabe Frank, MD
 David J. Fusco, MD
 Matthew Fusco, MD
 Patricia L. Gando, MD
 Melanie Gephart, MD
 Mahan Ghiassi, MD
 Mayshan Ghiassi, MD
 Waltus H. Gill, MD
 Vicko Gluncic, MD
 Yakov Gologorsky, MD
 David Daniel Gonda, MD
 Francisco Manuel Grajeda Garcia, MD
 Ramesh Grandhi, MD, PhD
 Mari Louise Groves, MD
 Amancio Guerrero Maldonado, MD
 Francisco Javier Guzman Ordaz, MD
 Casey Harrison Halpern, MD
 Simon Jeremy Hanft, MD
 Yasuaki Harasaki, MD
 Charles Vernon Hatchette, MD
 Devon Haydon, MD
 Zachary Lee Hickman, MD
 Luke Hnenny, MD
 Caitlin Hoffman, MD
 David Seongryong Hong, MD
 Betsy Deanina Hughes, MD
 Lindsey Elizabeth Hughes, MD
 Arun T. Jacob, MD
 Jeffrey Thomas Jacob, MD
 Walter Paul Jacobsen, DO
 M. Anver Jameel, MD
 N. Sastry Jatavallabhula, MD
 Sunil Partab Jeswani, MD
 Pinakin Jethwa, MD
 Daryl Aundra Johnson, MD
 Thomas W. Johnston III, MD

Kristen Elizabeth Jones, MD
 Kristopher Thomas Kahle, MD, PhD
 Koijan Singh Kainth, MD
 George V. Kakoulides, MD
 Paul Kalanithi, MD
 Kambiz Kamian, MD
 Ioannis Karampelas, MD
 Isaac Obiri Karikari, MD
 Saravanan Karuppiah, MD
 Brian Christopher Kelley, DO
 Amer Khalil Ahmad Khalil, MD
 Richard Kyungho Kim, MD
 Brent Young Kimball, MD
 Merritt D. Kinon, MD
 Libby Marie Kosnik, MD, MPH
 Nirupama Kumar, MD
 Wendell Lake, MD
 Shih-Shan Lang, MD
 Michael Robert Levitt, MD
 David M. Lewis, MD
 Li-Mei Lin, MD
 Carlos Isreal Linares Loera, MD
 Nir Lipsman, MD
 Andrew Dale Livingston, MD
 Bjorn Mark Lobo, MD
 Amritraj Ganesh Loganathan, MD
 Miguel Angel Lopez-Gonzalez, MD
 Robert G. Louis, MD
 Mark Alexander Mahan, MD
 Kelly B. Mahaney, MD
 Erwin Zeta Mangubat, MD
 Jacinto Manon, MD
 Salvador Manrique, MD
 Edward M. Marchan, MD
 Virgilio Matheus, MD
 Paul Alex Mazaris, MD
 Jamal McClendon Jr., MD
 Brian Jeffrey McHugh, MD
 M. Sean McKisic, MD
 Ricky Medel, MD
 Ankit Indravadan Mehta, MD
 Alejandro Ernesto Mendez Farias, MD
 William Robert Miele, MD
 Stephen James Montieth, MD
 Soriaya Motivala, MD
 Amanda L. Muhs, MD
 Michael Lee Mumert, MD
 Charles Nelson Munyon, MD
 T. Martin Murphy, MD
 Gisela Murray, MD
 Richard David Murray, MD
 Michael Curtis Muzinich, MD
 Stephen Nalbach, MD
 David Matthew Neils, MD
 Christopher Michael Nিকেle, MD
 Michael C. Oh, MD

Azeem Oladunjoye, MD
 Jennifer Lynn Orning, MD
 Ludwig David Orozco-Castillo, MD
 Joshua Williams Osburn, MD
 Christopher Michael Owen, MD
 Fedor Panov, MD
 Suguna Pappu, MD
 Haejoe Park, MD
 Emil Antonio Pastrana-Ramirez, MD
 Akash J. Patel, MD
 Akshal Sudhir Patel, MD
 David Paul Paulson, MD
 Pier Paolo Peruzzi, MD
 Anthony Liberato Petraglia, MD
 Patrick Pezeshkian, MD
 Gabriel H. Phillips, MD
 Jonathan A. Pindrik, MD
 Craig Pinkoski, MD
 Adam Jordan Polifka, MD
 Glen A. Pollock, MD
 Katherine Poon, MD
 Paul Nicholas Porensky, MD
 Matthew Bryan Potts, MD
 Rabia Qaiser, MD
 Ralph Rahme, MD
 Davis Reames, MD
 Alexa Lynne Reeves, MD
 Zeguang Ren, MD
 Michael Seung Sock Rhee, MD
 Thomas Stephen Ridder, MD
 Richard Aaron Robison, MD
 Shaun D. Rodgers, MD
 Deborah Alice Romeo, MD
 Luis Raulise Romero, MD
 Alexander Eli Ropper, MD
 Neil Edmund Roundy, MD
 David Rubin, MD
 Sam Safavi-Abbasi, MD, PhD
 James Sagar, MD
 Deshdeepak Sahnii, MD
 Sussan Salas, MD
 Nabil Salib, MD
 Christian Gene Samuelson, MD
 Christina Mieke Sayama, MD
 Alexandre Michael Scheer, MD
 Terry Kiyoshi Schiefer, MD
 Gary Thomas Schwartzbauer, MD
 William Wallace Scott, MD
 Cara Sedney, MD
 Joseph Carl Serrone, MD
 Rashmi Seth, MD
 David Allan Shafer, MD
 Kelly Lynne Shaffer, MD
 Stephen Shafizadeh, MD
 Mohammad Parvez Shaikh, MD
 Craig Michael Shannon, MD

Sunjay Sharma, MD
 Farhan Siddiq, MD
 Wissam H. Sleiman Zade Asfahani, MD
 Adrian Mzee Smith, MD
 David Mathias Smith, MD
 Timothy Richard Smith, MD, PhD
 Heather Stevens Spader, MD
 Justin M. Sporrer, MD
 Eric A. Sribnick, MD
 Godefroy Hardy St. Pierre, MD
 Hai Sun, MD
 Phiroz Erach Tarapore, MD
 Anna Ruth Terry, MD
 Khoi Duc Than, MD
 Justin Michael Thomas, MD
 Juan Torres-Reveron, MD
 Fernando Torres-Zapiain, MD
 Jayme Trahan, MD
 Sumeet Vadera, MD
 Anibal Vargas Herrera, MD
 Rohit Vasan, MD
 Anthony Chin-Hsiu Wang, MD
 David Chin-Sing Wang, MD
 Chad W. Washington, MD, MS
 David M. Weingarten, MD
 Thomas Randolph Whisenhunt, MD
 Jefferson Wilson, MD
 Jonathan Lee Wilson, MD
 Jesse Lee Winer, MD
 Albert Ping Wong, MD
 Judith Ming-Hai Wong, MD
 Asma'a A. Yassin, MD
 Alexander Yu, MD
 Sung-Joo Yuh, MD
 Brad Evan Zacharia, MD
 Omar A. Zalatimo, MD

New International Resident Members (68)

Nidal Abuhadrous, MD
 Amanj Hassan Ali, MBChB, IBMS
 Hemin Mohamad Hama Ameen, MBChB
 Coste Aurelien, MD
 Basem Ibrahim Awad, MD
 Mohammed Awad, MBBS, BSc
 Say Ayala-Soriano, MD
 Ali Mohamed Ayyad, MD
 Ahmed Ismail Baseem, MD
 Saleh Mohammed Bin Salman, MD
 Ondrej Bradac, MD
 Dennis R. Buis, MD
 Samuel H. Cheshier, MD, PhD
 Felipe Goncalves de Carvalho, MD
 Ginna Milena De La Rosa Manjarrez, MD
 Adriana Dediu, MD
 Jose Nicanor Piatos del Rosario III, MD
 Philipp Duscha, MD

Ahmed Mohamed Elsawaf, MD
 Nima Etminan, MD
 Nabeel Farhan, MD
 Mario Ganau, MD
 Theodore Gerasimou, MD
 M. R. Germans, MD
 Stefan Grau, MD
 Ismail Hassan, MD
 Nazar Ibrahim Jabar, MBChB, IBMS
 Awder Abdul-Razzaq Jalal, MBChB, IBMS
 Greg James, MRCS, PhD
 Olaf Kopetsch, MD
 Ali Lasseini, MD
 Dirk Lindner, MD
 Khalid Mohammed Elhag Medani, MBBS, MD
 Nabaz Mohammed, MBChB
 Luis Rafael Moscote Salazar, MD
 Veeru Venkata Mudigonda Rao, MBBCh, MRCS
 Jane Ng, MD
 Colum Nolan, MRCS
 Omotayo Abimbola Ojo, MD
 Aikaterini Patrona, MD
 Ioannis Pechlivanis, MD
 Ilya Pyko, MD
 Ananda Reddy Busa, MD
 Daniel Ruessing, MD
 Bruno Santiago, MD
 Bawarjan Schatlo, MD
 Oliver Schnell, MD
 David Schul, MD
 Martin Alexander Seule, MD
 Yassine Tahir Sharife, MBChB, IBMS
 Danaan Joseph Shilong, MD
 Anit Singh, MD
 Youssouf Sogoba, MBChB
 Drahoslav Sokol, MD
 Havard Sommernes, MD
 Narayanan Swarna Rekha, MD
 J. Humberto Tapia-Perez, MD
 Loi Dinh Trinh, MD
 Sheng-Tzung Tsai, MD
 Constantin Tuleasca, MD
 Payman Vahedi, MD
 Pieter Van Eijdsen, MD
 Babar Vaqas, MD
 Dorothee Wachter, MD
 Ricardo Chmelnitsky Wainberg, MD
 Jan Walter, MD
 Kai Sing Alain Wong, MD
 Tsung-Hsien Wu, MD

New Fellow Members (41)

Faiz U Ahmad, MD
 Faisal Aboud Jasser Al-Otaibi, MD
 Jacob Alant, MD
 Moshe Attia, MD

Muhittin Belirgen, MD
 Cyrus Dastur, MD
 Tatiana de Oliveira, MD
 Francesco Doglietto, MD
 Raul Andres Perez Falero, MD
 Venko Ilija Filipce III, MD
 Eduardo Goellner, MD
 Manuel Hernandez Gaitan, MD
 Tetsuhiro Higashida, MD
 William Holloway, MD
 Pakrit Jittapiromsak, MD
 Ben Jonker, MD
 Kathleen Joy Khu, MD
 Seon-Hwan Kim, MD
 Shao-Pow Lin, MD
 Orphee Makiese, MD
 Guillermo Alfonso Monsalve Duarte, MD
 Laszlo Nagy, MD
 Sacit Bulent Omay, MD
 Jean Quint Lomotan Oropilla, MD
 Jae Sung Park, MD
 Michele Parolin, MD
 Samuel Perez Cardenas, MD
 Ramiro Antonio Perez de la Torre, MD
 Raoul Pope, MD
 Jaypal Reddy Sangala, MD
 Hatem Sabry, MD
 Ke Sai, MD
 Askin Seker, MD
 Matthias Setzer, MD
 Hesham Mansour Soliman, MD
 Shota Tanaka, MD
 Taner Tanriverdi, MD
 Ruth Thiex, MD, PhD
 Rikin A. Trivedi, MBBS, FRCS
 Zhiyuan Xu, MD
 Chun-Po Yen, MD

New Associate Members (31)

Jonathan D. Altland, MPAS, PA-C
 Jonathan James Bradshaw, PA-C
 Reginald A. Burton, MD
 Brenda Cean, PA-C
 Cherylee Chang, MD
 Amy Lyn Dean, PA-C
 Frank Eisinger, PA-C
 Julia Anna Galletly, MSN ACNP
 Christy Marie Geraci, BSN, RN
 Ashley Shepard Hale, RN
 Todd David Helgeson, PA-C, MPAS
 Robert Hensler, PA-C
 Alicia Ann Hill, BSN, RN
 Brenda Hill, PA-C
 Chad Jorgensen, PA-C
 Chris E. Justus, PA-C
 Megan Marie Keiser, APRN, BC

Roger D. Lovelace, PA-C
 Benjamin R. Luman, PA-C
 Anna McClellan, PA-C
 Jennifer M. Morris, MS, PA-C
 May Ng, RPA-C
 Kevin J. Payne, PA-C
 Susan Marie Piehl, RN, CNP
 Miriana Popadich, BSN
 David H. Sargent, PA-C
 Jean Schumaker, PA-C
 David Tuinstra, PA-C
 Caia C. Watridge, PA-C
 Joshua Williford, PA-C
 Lorinda Diane Zigan, PA-C, MPAS

New Allied Members (1)

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ANNUAL MEETING MISSION

The main goals of the American Association of Neurological Surgeons' Annual 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 Meeting Committee is dedicated to meeting these goals. The AANS Annual Meeting is the principal mechanism for the transfer of scientific, technical, and intellectual information to the neurosurgical community.

Feedback obtained from attendee evaluation forms is one important factor in determining the program content of this meeting. Special recognition is extended to the individuals of the 2009 Annual Meeting Committee and the committees they represent for their perseverance and commitment to making the Annual 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 educational activity for a maximum of 43.25* *AMA PRA Category 1 Credits™*. Physicians should only claim credit commensurate with the extent of their participation in the activity. *A maximum of 18 *AMA PRA Category 1 Credits™* for general sessions only.

CME CREDIT FOR BREAKFAST SEMINARS

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

CME CREDIT FOR PRACTICAL CLINICS

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

CME CREDIT FOR POSTERS

Physicians may claim *AMA PRA Category 1 Credits™* directly from the AMA for preparing a poster presentation, which is also included in the published abstracts. To obtain credit from the AMA for this, physicians can either claim them on their *AMA PRA* certificate application or apply directly to the *AMA for an AMA PRA Category 1 Credits™* certificate. Physicians may claim *AMA PRA Category 2 Credit™* for viewing scientific posters. Physicians should self-claim credit to the AMA on their *AMA PRA* certificate application form.

CONTINUING EDUCATION FOR ALLIED HEALTH PROFESSIONALS

Practical Clinics, Breakfast Seminars and afternoon sessions designated with an "N&PE" are designed with Allied Health professionals in mind. Nursing contact hours have been applied for the specified breakfast seminars and practical clinics designed for nurses. Specific hours are subject to approval. An application for approval of nursing contact hours has been submitted to the Illinois Nurses Association Approver Unit. Please call the AANS for more information about the contact hours. Physician assistants will receive a certificate of attendance after the completion of the meeting which can be submitted to the American Academy of Physician Assistants for acceptance towards the Physician Assistant Category I (pre-approved) CME requirement.

CLAIM CME CREDIT THE EASY WAY

Again this year, Annual Meeting attendees will self-report CME credit for the programs they attend by going online to MyAANS.org from any computer with internet service. Please have your MyAANS.org user name [e-mail address] and password handy during and after the meeting for convenient completion and submission. Self reported CME will not be credited if the individual does not pick up his/her registration packet. Do not self-report CME credit for optional ticketed events such as breakfast seminars and practical clinics. By turning in your tickets on site, credit will automatically be added to your record in MyAANS.org. Please contact the AANS if you are not in attendance for the full breakfast seminar or

practical clinic so that your credit can be adjusted accordingly.

DISCLOSURES

ACCME's Updated Standards for Commercial Support require that anyone in a position to control the content of the education activity has disclosed all financial relationships with any commercial interest. Failure or refusal to disclose or the inability to satisfactorily resolve the identified conflict may result in the withdrawal of the invitation to participate in any AANS education activities. The ACCME defines a "commercial interest" as any entity producing marketing, re-selling, or distributing healthcare goods or services consumed by, or used on, patients.

Disclosures will be published in the Annual Meeting Program Guide and Scientific Program CD, which will be distributed to all registrants at the meeting. Disclosures will also be published online and on DVD for the AANS Annual Meeting Archived Presentations.

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The material presented at the 77th Annual Meeting has been made available by AANS for educational purposes only. The material is not intended to represent the only, nor necessarily the best, method or procedure appropriate for the medical situations discussed, but rather it is intended to present an approach, view, statement, or opinion of the faculty, which may be helpful to others who face similar situations. Neither the content (whether written or oral) of any course, seminar or other presentation in the program, nor the use of a specific product in conjunction therewith, nor the exhibition of any materials by any parties coincident with the program should be construed as indicating endorsement or approval of the views presented, the products used, or the material exhibited by the AANS, or by its committees, commissions or affiliates. The AANS disclaims any and all liability for injury or damages to any individual attending the Annual Meeting, and for all claims which may arise out of the use of the techniques demonstrated therein by such individuals, whether these claims shall be asserted by physicians or any other person. There may be, on occasion, changes in faculty and program content.

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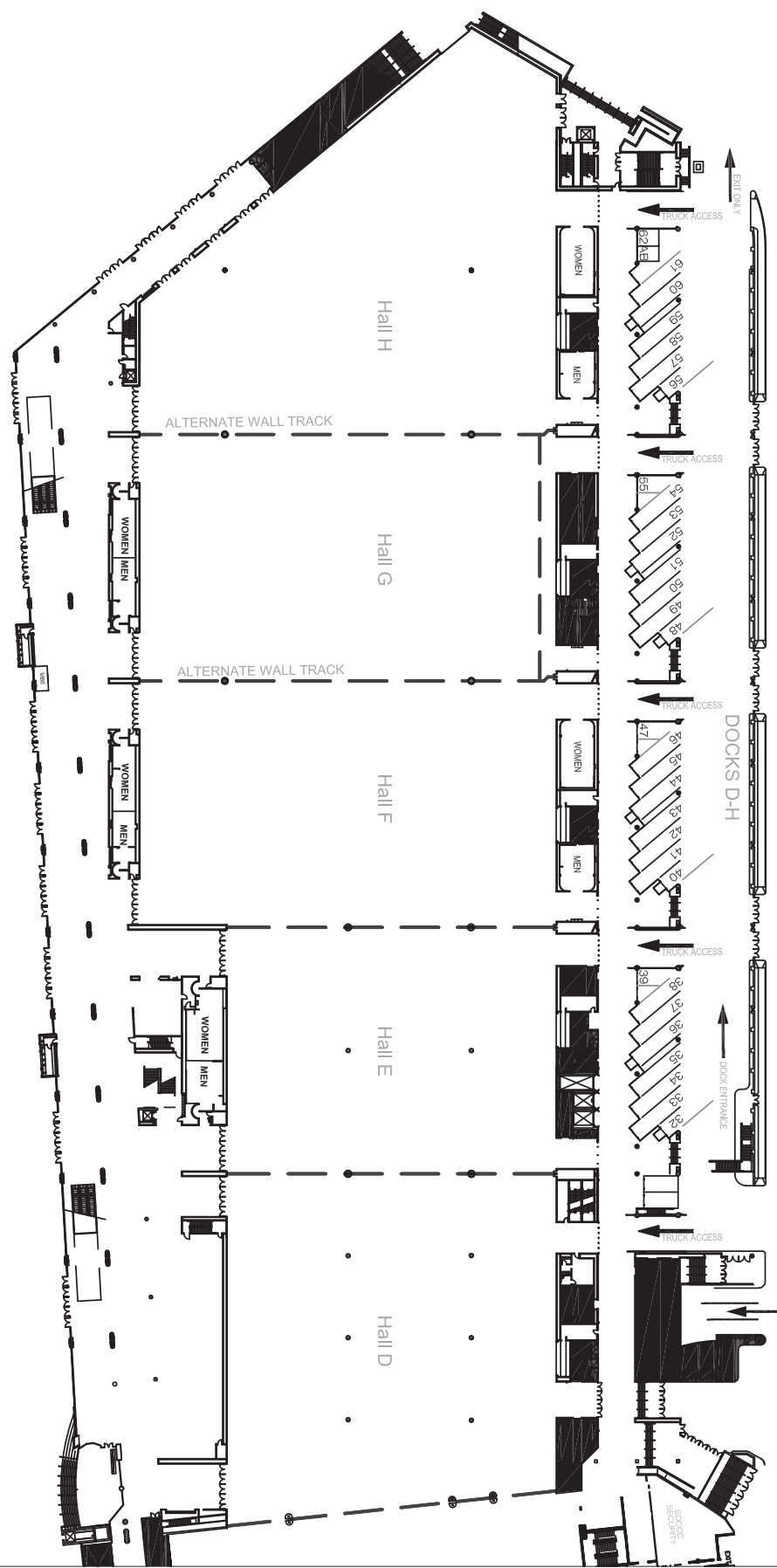
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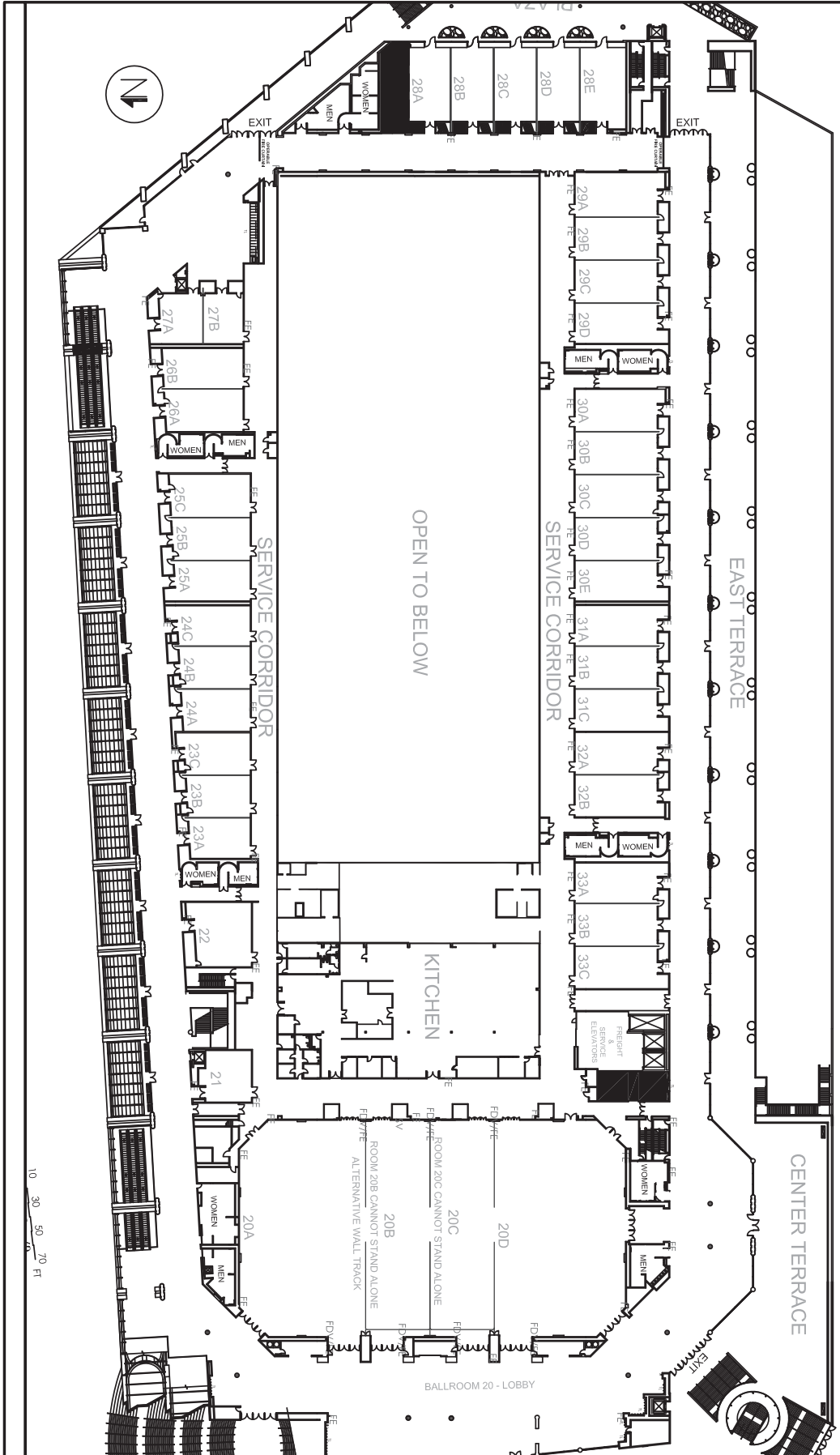
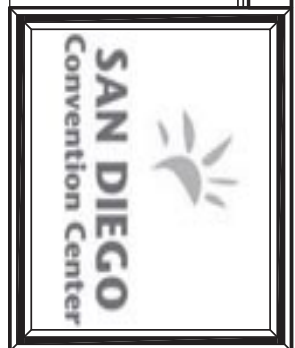
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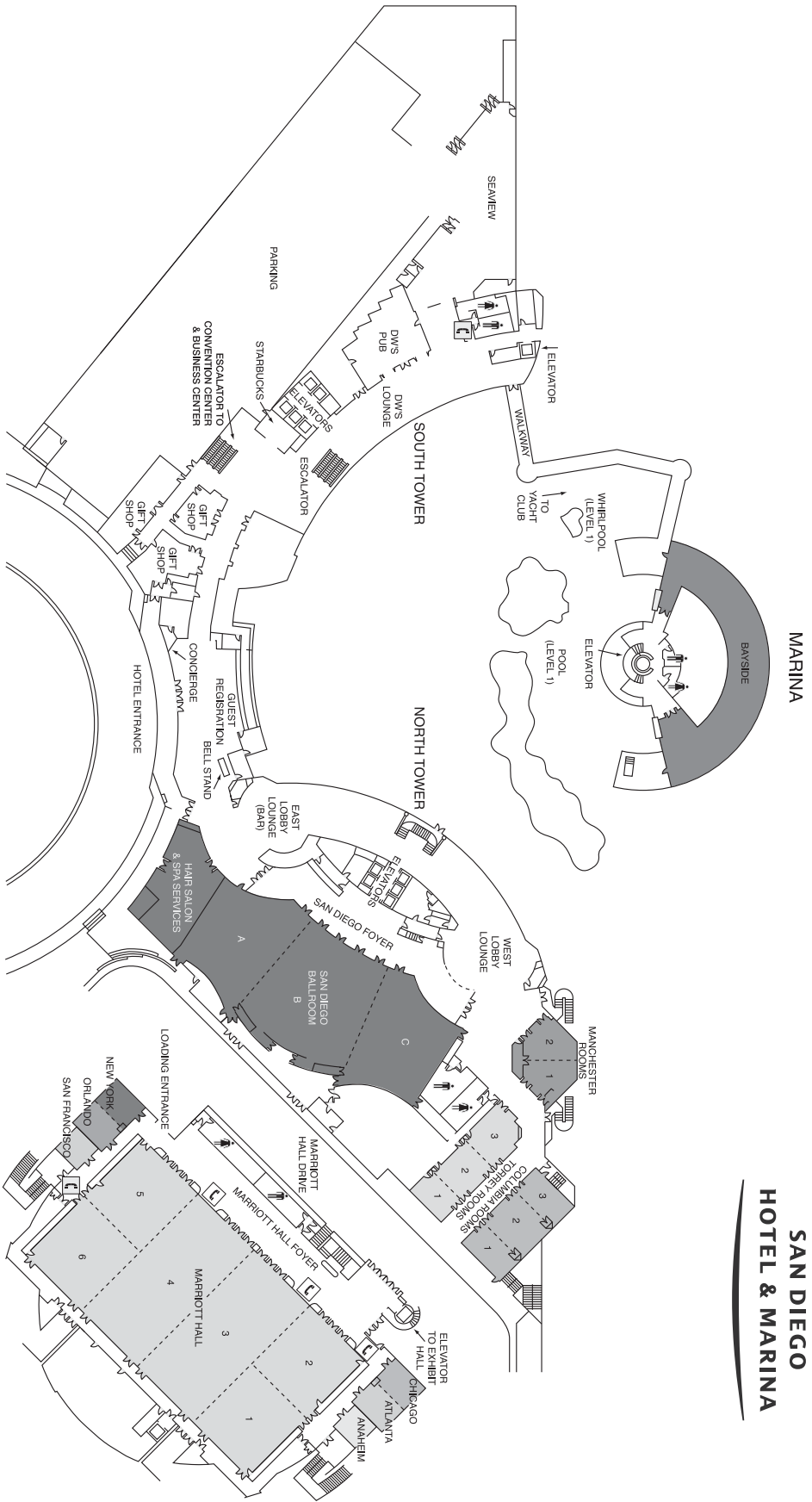
BAYSIDE

SAN DIEGO CONVENTION CENTER UPPER LEVEL EAST ROOMS 20-33

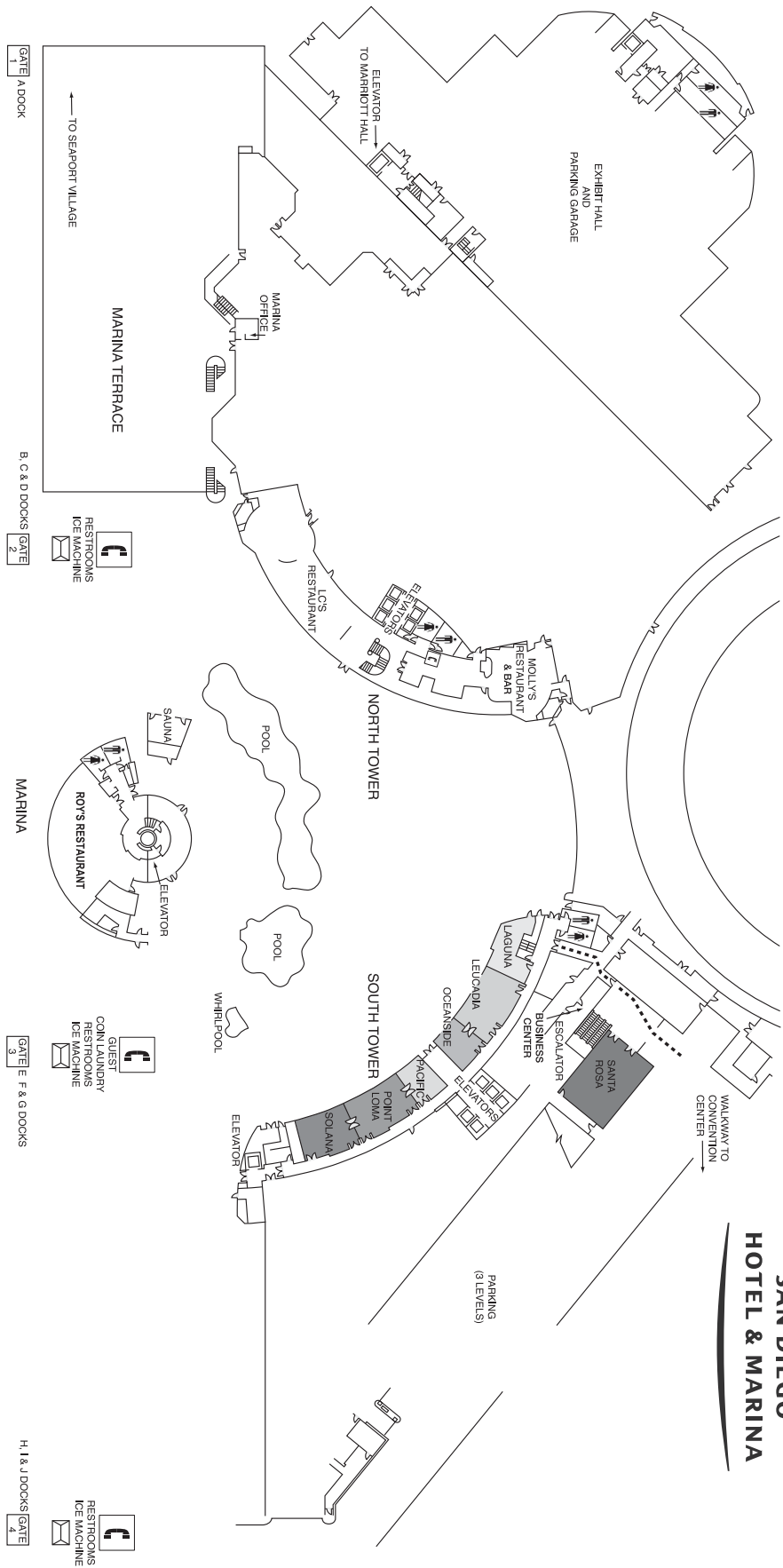
V01



LOBBY LEVEL



LEVEL 1



LEVEL 3



LEVEL 4

