

MEETING PURPOSE

The purpose of the 2012 Annual Meeting of the Congress of Neurological Surgeons is to provide continuing medical education for practicing neurosurgeons, neurosurgical residents in training and postgraduate neurosurgical fellows, as well as allied health professionals including nurses, physician assistants and clinical specialists.

WHO SHOULD ATTEND

Neurological surgeons, neurosurgery nurses, physician assistants, orthopedic surgeons, primary care physicians, gerontologists, radiologists, hospital administrators, oncologists, neurologists, pediatricians, physiatrists and infectious disease specialists are welcome and encouraged to attend the 2012 CNS Annual Meeting.



WELCOME

Welcome to our colleagues from the Central European Neurosurgical Society (CENS) – our international partner for the 2012 CNS Annual Meeting!

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2012 AT-A-GLANCE

SATURDAY, OCTOBER 6

8:00 AM - 5:00 PM	Full Day Practical Courses (PC01 - PC02)
8:00 AM - 12:00 PM	Morning Practical Course (PC03)
1:00 - 5:00 PM	Afternoon Practical Courses (PC04 - PC14)
6:00 - 8:00 PM	Dinner Seminar 1: Treatment of Brain Metastases

SUNDAY, OCTOBER 7

8:00 AM - 4:00 PM	Full Day Practical Courses (PC15 - PC16)
8:00 - 11:30 AM	Morning Practical Courses (PC17 - PC21)
12:30 - 4:00 PM	Afternoon Practical Courses (PC22 - PC27)
1:00 - 3:00 PM	CNS Resident SANS Challenge Preliminary Rounds
3:00 - 4:30 PM	CNS Original Science Program - Multidisciplinary Oral Presentations I
4:30 - 6:00 PM	General Scientific Session I
4:33 - 4:55 PM	<i>Nader Sanai</i> Under the Radar: Human Glioma Dissemination through Stem Cell Corridors
4:57 - 5:25 PM	<i>Albert L. Rhoton, Jr.</i> Navigating in the Final Frontier
5:28 - 6:00 PM	<i>Anne G. Osborn</i> John Thompson History of Medicine Lecture: The New Brain Tumors: What Can Your Neuroradiologist Really Tell You From Preoperative Imaging Studies?
6:00 - 8:00 PM	CNS Opening Reception McCormick Place Lakeside Center

MONDAY, OCTOBER 8

7:00 - 11:30 AM	General Scientific Session II
8:15 - 8:35 AM	<i>John Donoghue, PhD</i> Special Lecture: Merging Mind and Machine to Restore Movement
8:40 - 9:00 AM	<i>Ralph G. Dacey, Jr.</i> Honored Guest Lecture: Patterns of Occurrence and Surgical Solutions Across the Spectrum of Saccular and Fusiform Middle Cerebral Artery Aneurysms
9:00 AM - 3:30 PM	Exhibit Hall Open
9:00 - 10:00 AM	Beverage Break with Exhibitors and Demonstration Theater Presentations
10:30 - 10:50 AM	<i>Christopher E. Wolfla</i> Presidential Address
10:55 - 11:30 AM	<i>Raymond Kurzweil</i> Thirteenth Annual Walter E. Dandy Orator: The Acceleration of Technology in the 21st Century: The Impact on Medicine, Health and Society
11:30 AM - 12:00 PM	Break with Exhibitors
12:00 - 1:30 PM	Luncheon Seminars (M01 - M18)
1:30 - 2:00 PM	Break with Exhibitors and Demonstration Theater Presentations
2:00 - 3:30 PM	<ul style="list-style-type: none"> ◆ CNS Original Science Program - Oral Presentations I ◆ Special Course I: Robotics: The Future of Neurosurgery? ◆ Consensus Session I: Treatment of Cervical Stenosis and Radiculopathy: Building Consensus From Controversy
3:30 - 5:00 PM	<ul style="list-style-type: none"> ◆ CNS Original Science Program - Neurosurgical Forum ◆ 3-D Operative Session: The Art of Microsurgery: Lessons Learned
5:00 - 6:30 PM	CNS International Reception
6:30 - 8:30 PM	Dinner Seminar 2: Harnessing Social Media and the Web to Enhance Your Practice Dinner Seminar 3: Extra. Incidental Finding - What Next?

TUESDAY, OCTOBER 9

7:00 - 11:30 AM	General Scientific Session III
7:35 - 7:55 AM	Ralph G. Dacey, Jr. Honored Guest Lecture: External Challenges to Neurosurgical Professionalism in 2012
8:14 - 8:31 AM	Jonathan Skinner, PhD Special Lecture: Technology Growth and Cost Growth in Healthcare
9:00 AM - 5:00 PM	Exhibit Hall Open
9:00 - 10:00 AM	Beverage Break with Exhibitors and Demonstration Theater Presentations
10:00 - 10:40 AM	Elad I. Levy Live Surgery via Telemedicine Technology: Live Aneurysm Reconstruction with Flow Diversion
11:05 - 11:30 AM	Geoff Colvin Special Lecture: Talent is Overrated
11:30 AM - 12:00 PM	Break with Exhibitors and Demonstration Theater Presentations
12:00 - 1:30 PM	Luncheon Seminars (T19 - T35)
1:30 - 2:00 PM	Break with Exhibitors and Demonstration Theater Presentations
2:00 - 3:30 PM	<ul style="list-style-type: none"> ◆ CNS Original Science Program - Oral Presentations ◆ Section Sessions ◆ Special Course II: Functional Neuroimaging: Where Do We Go from Here?
3:30 - 4:30 PM	CNS Annual Business Meeting
3:30 - 5:00 PM	<ul style="list-style-type: none"> ◆ Snack Break with Exhibitors and Demonstration Theater Presentations ◆ Operative Neurosurgery: Management of Desperate Intraoperative Moments
5:00 - 6:00 PM	CNS Resident SANS Challenge Championship Round
6:00 - 7:00 PM	CNS Resident Recruitment Social
6:30 - 8:30 PM	Dinner Seminar 4: GSM - Front versus Back Dinner Seminar 5: Aneurysm - Clip and/or Coil?

WEDNESDAY, OCTOBER 10

7:00 - 11:30 AM	General Scientific Session IV
9:00 AM - 2:00 PM	Exhibit Hall Open
9:00 - 10:00 AM	Beverage Break with Exhibitors and Demonstration Theater Presentations
10:16 - 10:38 AM	Michael McMillan Special Lecture: Future of Healthcare Delivery from Corporate America
10:38 - 10:58 AM	Ralph G. Dacey, Jr. Honored Guest Lecture: The Impact of High Field Strength Intraoperative MRI on Brain Tumor Management
11:03 - 11:30 AM	David Weinberger, PhD Special Lecture: Too Big to Know: Rethinking Knowledge Now That the Facts Aren't the Facts, Experts are Everywhere, and the Smartest Person in the Room Is the Room
11:30 AM - 12:00 PM	Break with Exhibitors and Demonstration Theater Presentations
12:00 - 1:30 PM	Luncheon Seminars (W36 - W50)
1:30 - 2:00 PM	Break with Exhibitors
2:00 - 3:30 PM	<ul style="list-style-type: none"> ◆ CNS Original Science Program: Multidisciplinary Oral Presentations II ◆ Section Sessions ◆ Consensus Session II: Treatment of Acoustic Neuromas: Building Consensus From Controversy

Follow the CNS for timely Annual Meeting updates on Facebook and Twitter!

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 www.twitter.com/cns_update

Congress of Neurological Surgeons 2012 Annual Meeting Objectives

The Congress of Neurological Surgeons exists to enhance health and improve lives worldwide through the advancement of education and scientific exchange in the field of neurosurgery. The CNS Continuing Medical Education (CME) program provides participants with various learning formats to keep current in the field and to improve skills and enhance professional performance to provide the best possible care for their patients.

The CNS CME program is designed, planned, and implemented to evaluate a comprehensive collection of activities within the subspecialty of neurosurgery. The CNS plans to yield results that not only contribute to lifelong

learning, but also demonstrate change and improvement in competence and performance.

At the conclusion of the 2012 CNS Annual Meeting participants will be able to:

1. Alter their current practice patterns in accordance with the latest data.
2. Compare techniques based on findings discussed during case presentations.
3. Apply and/or perform new techniques based on best practices and current procedures.
4. Practice evidence-based, informed neurosurgical medicine.
5. Interpret newly found outcomes as a result of the scientific abstract presentations.
6. Demonstrate change in competence or performance.

EDUCATIONAL FORMATS

Educational Format Descriptions

The CNS offers sessions in a variety of formats to enhance your educational experience. Each session is open to all who have paid the general medical registration fee with the exception of optional Practical Courses, Luncheon Seminars and Dinner Seminars, which are available for an additional fee.

Practical Courses

Didactic and hands-on courses with expert neurosurgical educators demonstrating clinical techniques and applications via technology, models and simulation. Hands-on Practical Courses will provide participants an opportunity to improve surgical skills by applying and demonstrating learned techniques. Practical Courses also provide an opportunity to review case-based complex issues and discuss potential solutions.

- ◆ Practical Courses are offered Saturday, October 6 and Sunday, October 7

General Scientific Session, Section Session, Special Course, Luncheon Seminar and Dinner Seminar Lectures

Expert lecturers present research, best scientific evidence, and associated outcomes demonstrating clinical techniques and applications. The basics of translational

development, clinical trials, guideline review and updated changes, and evaluation of clinical experience followed by examples of successful application are presented in various sessions. They will present basic skills and information you can apply in your daily practice and professional life.

- ◆ General Scientific Sessions, Section Sessions and Special Courses are offered Sunday, October 7 through Wednesday, October 10
- ◆ Luncheon Seminars are offered Monday, October 8 through Wednesday, October 10
- ◆ Dinner Seminars are offered on Saturday, October 6 and Monday and Tuesday, October 8 and 9

CNS Consensus Sessions with Audience Response Polling

Consensus Sessions provide an opportunity for expert presentations, discussion, and peer debate on various topics, treatments, guidelines, and solutions. A review of the best evidence-based literature is conducted and then an opportunity is provided to share your perspective on the optimal management of these disorders as a consensus is reached for the best application of surgical strategies in a variety of clinical scenarios.

- ◆ Consensus Sessions are offered on Monday, October 8 and Wednesday, October 10

Case-Based Education

Challenging neurosurgical cases will be reviewed and discussed in a variety of innovative formats including 3-D Video Presentation, Live Surgery via Telemedicine and Panel Discussions.

- ◆ Monday, October 8, The Art of Microsurgery: Lessons Learned – A 3-D Video Presentation
- ◆ Tuesday, October 9, Live Aneurysm Reconstruction with Flow Diversion – Live Surgery via Telemedicine in the General Scientific Session
- ◆ Tuesday, October 9, Operative Neurosurgery: Management of Desperate Intraoperative Moments

Original Science Program

Scientific abstract presentations offer original science, ground-breaking research and the best clinical and basic neurosurgical science in the CNS Original Science Program allowing for audience questions and moderated discussions.

- ◆ Sunday, October 7, Multidisciplinary Session I
- ◆ Monday, October 8, Oral Presentations by subspecialty and the CNS Neurosurgical Forum
- ◆ Tuesday, October 9, Oral Presentations by subspecialty
- ◆ Wednesday, October 10, Multidisciplinary Session II

CONTINUING MEDICAL EDUCATION

Accreditation

The Congress of Neurological Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AMA Credit Designation Statement

US Physicians: The CNS designates this live activity for a maximum of 46.5 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

CME Credit

The same number of AMA PRA Category 1 Credits™ awarded will be applied toward the Continuing Education Award in Neurosurgery.

* A maximum of 21 AMA PRA Category 1 Credits™ may be earned for general sessions only.

Allied Health Professionals: The CNS cannot designate its Annual Meeting as meeting the criteria for credit for nurses and other allied health professionals. For credit that may be acceptable to state medical associations, specialty societies or state boards for medical licensure, please contact those organizations directly.

Additional CME Credits can be earned by attending the following:

Practical Courses

Attendees will receive a maximum of four (4) AMA PRA Category 1 Credits™ for each Saturday half-day Practical Course, a maximum of eight (8) AMA PRA Category 1 Credits™ for each eligible Saturday full-day Practical Course, a maximum of three-and-a-half (3.5) AMA PRA Category 1 Credits™ for Sunday half-day Practical Courses, and a maximum of seven (7) AMA PRA Category 1 Credits™ for each eligible full-day Sunday Practical Course. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Luncheon Seminars

Attendees will receive a maximum of one-and-a-half (1.5) AMA PRA Category 1 Credits™ for all eligible Luncheon Seminars. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Dinner Seminars

Attendees will receive a maximum of two (2) AMA PRA Category 1 Credits™ for all eligible Dinner Seminars. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Posters

Physicians may claim a maximum of five (5) AMA PRA Category 1 Credits™ directly from the AMA for preparing a poster presentation, which is also included in the published abstracts. Physicians may 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 Credits™ for viewing scientific posters. Physicians should self-claim credit on their AMA PRA certificate application form. Please visit the AMA web site for details at www.ama-assn.org.

Claiming CME Credit

CME credits can be claimed through the online CME system at www.cns.org. Upon completion of this process your CME certificate will be sent to you via e-mail at the e-mail address you used at registration. The CME tracking system lets you create and print a CME certificate immediately following the CNS Annual Meeting either while you are still in Chicago or from the convenience of your home or office.

Log-in using your last name and the e-mail address with which you registered. You will need to enter the number of hours you are claiming for each session you attended including Practical Courses, Luncheon Seminars, Dinner Seminars, General Scientific Sessions, the Original Science Program, Special Courses, Section Sessions, Consensus Sessions, 3-D Operative and Operative Neurosurgery.

CME Certificates

CME certificates can be printed directly from the online CME system once you have entered the hours you are claiming. Physicians should only claim credit for the number of credits for the learning activities at the Annual Meeting in which they actively participated.

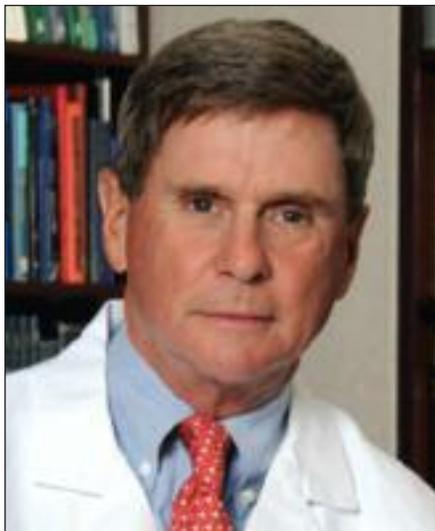
Disclosures

The Accreditation Council for Continuing Medical Education Updated Standards for Commercial Support requires that anyone in a position to control the content of the educational 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 of the CNS educational 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. It is also each speaker’s responsibility to include the FDA clearance status of any device or drug requiring FDA approval discussed or described in their presentation or to describe the lack of FDA clearance for any “off label” uses discussed. Speakers from the audience are also required, therefore, to indicate any relevant personal/professional relationships as they discuss a given topic.

Disclosures will be published in the Scientific Program Book that will be distributed at the Annual Meeting. Handout materials are prepared and submitted for distribution by the presenters who are solely responsible for their content.

FDA Statement

Some drugs or medical devices demonstrated at the Annual Meeting have not been cleared by the FDA or have been cleared by the FDA for specific purposes only. The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice. The CNS policy provides that “off label” uses of a drug or medical device may be described at the Annual Meeting so long as the “off label” use of the drug or medical device is also specifically disclosed. Any drug or medical device is “off label” if the described use is not set forth on the products approval label. A listing of these disclosures will be available in the Annual Meeting Program Book.



HONORED GUEST

RALPH G. DACEY, JR., MD

Henry G. and Edith R. Schwartz Professor and Chairman of the Department of Neurological Surgery at Washington University in St. Louis

Ralph G. Dacey, Jr., MD, was born in Boston, Massachusetts on August 7, 1948. He received his B.A. degree from Harvard University in 1970 and his M.D. degree from the University of Virginia in Charlottesville in 1974. He subsequently served as a neurosurgical resident at UVA. He was an American College of Surgeons Schering Scholar, a post-doctoral fellow in physiology and worked as a neurosurgical registrar in Plymouth, England. He is board certified in Internal Medicine and Neurological Surgery.

Following his post-graduate training he became an Assistant Professor of Neurological Surgery at the University of Washington in Seattle. He subsequently was appointed Professor and Chief of the Division of Neurosurgery at the University of North Carolina, in Chapel Hill. He is currently the Henry G. and Edith R. Schwartz Professor and Chairman of the Department of Neurological Surgery at Washington University in St. Louis.

Dr. Dacey is currently the President of the Society of Neurological Surgeons. He recently served as Chairman of the Residency Review Committee for Neurosurgery and was a member of the ACGME Resident Duty Hours Task Force. In October of 2010 he was elected into the Institute of Medicine and subsequently became a Fellow of the Academy of Sciences of St. Louis. He is the past President and Treasurer of the American Academy of Neurological Surgery and past Vice President of the Society of Neurological Surgeons. He was the Chairman and Secretary of the American Board of Neurological Surgery as well as President and Treasurer of the Congress of Neurological Surgeons. He is a member of the American Association of Neurological Surgeons, American Academy of Neurological Surgery, American College of Surgeons, American Heart Association, American Medical Association, American Surgical Association, Congress of Neurological Surgeons, Neurosurgical Society of America, Research Society of Neurological Surgeons, Society of Neurological Surgeons, Society of University Surgeons, and the Southern Neurosurgical Society.

He is a consultant neurosurgeon for the St. Louis Rams and the St. Louis Blues.

Dr. Dacey's clinical interests range from cerebrovascular surgery to the surgery of pituitary tumors and meningiomas. His research focuses on the physiology of intracerebral microcirculation. He was awarded a Clinician Investigator Development Award by the National Institutes of Health and has been funded by NIH for many years. His CV lists over 190 publications in the area of neurosurgery and cerebrovascular physiology. He has served as a member of the NIH's National Advisory Neurological Disorders and Stroke Council. In 2003 he received the prestigious Grass Foundation Award from the Society of Neurological Surgeons.

Presentations by Honored Guest, Ralph G. Dacey, Jr., MD

MONDAY, OCTOBER 8

GENERAL SCIENTIFIC SESSION II

8:40 - 9:00 AM

HONORED GUEST LECTURE

Patterns of Occurrence and Surgical Solutions Across the Spectrum of Saccular and Fusiform Middle Cerebral Artery Aneurysms

TUESDAY, OCTOBER 9

GENERAL SCIENTIFIC SESSION III

7:35 - 7:55 AM

HONORED GUEST LECTURE

External Challenges to Neurosurgical Professionalism in 2012

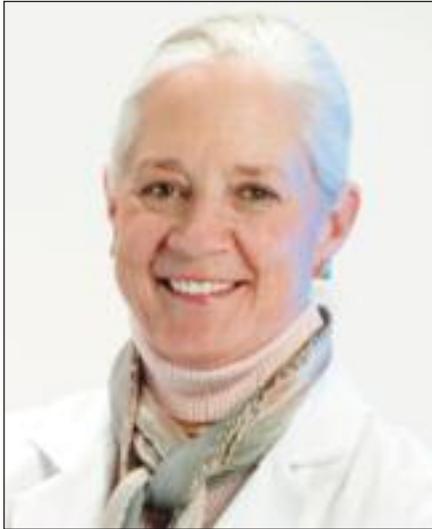
WEDNESDAY, OCTOBER 10

GENERAL SCIENTIFIC SESSION IV

10:38 - 10:58 AM

HONORED GUEST LECTURE

The Impact of High Field Strength Intraoperative MRI on Brain Tumor Management



JOHN THOMPSON HISTORY OF MEDICINE

ANNE G. OSBORN, MD

Distinguished Professor of Radiology at the University of Utah School of Medicine

Sunday, October 7, 5:28 – 6:00 PM

The New Brain Tumors: What Can Your Neuroradiologist Really Tell You From Preoperative Imaging Studies?

Anne G. Osborn, MD, is University Distinguished Professor of Radiology at the University of Utah School of Medicine. She holds the William H. and Patricia W. Child Presidential Endowed Chair in Radiology at the University of Utah. Dr. Osborn is an internationally-acclaimed teacher and lecturer and is regarded as one of the world's most prominent neuroradiologists. She is the author of several texts that are considered the definitive references in her field. Her comprehensive teaching textbook, *Diagnostic Neuroradiology* won the 1995 American Publishers Association award as the Best Textbook in Clinical Medicine. Her other texts have been equally acclaimed. *Diagnostic Cerebral Angiography*, 2nd edition, received rave reviews and remains one of the most popular texts on the subject. Her 2006 book, *Diagnostic and Surgical Imaging Anatomy: Brain, Spine, Head and Neck*, which she co-

authored with Dr. Ric Harnsberger, received First Prize in the 2007 British Medical Association's annual Medical Book Competition.

In 2008 she published *Expert Differential Diagnosis: Brain and Spine*. Her *Diagnostic Imaging: Brain* was published in 2004 and became an international best-seller. The second edition was published in November, 2009. She is currently authoring her next book, *Osborn's Brain*, which will be published by Amirsys/Lippincott Williams & Wilkins in summer 2012. *Osborn's Brain* will be accompanied by a brand-new, cutting-edge digital interactive product called the Amirsys Wizard™.

Dr. Osborn's *PocketRadiologist: Brain* was one of the first radiology texts created specifically for hand-held computers (PDA). A joint collaboration between Elsevier Health Sciences and Amirsys, a database publishing and radiology informatics company she co-founded with Dr. Ric Harnsberger, the *PocketRadiologist* series debuted to popular acclaim at RSNA 2001 and was Elsevier's top-selling book series at RSNA 2002. It has since then become the most-translated medical book series in history and is used all over the world. Dr. Osborn was cited as one of the "20 Most Influential" people in radiology by *Diagnostic Imaging* magazine in its November, 2002 issue, and has been subsequently profiled in the widely-read trade publication as one of four innovative educators inspiring a generation of radiologists to excel in research, clinical skill, and leadership.

Dr. Osborn sent medical students to emerging nations such as Africa and India to install free access to Amirsys's highly popular STATdx®, a clinical point-of-care decision-making tool that is used by nearly all major teaching institutions in the USA and practicing radiologists around the world.

Dr. Osborn has published over 25 books and more than 125 scientific articles. She is Editor-in-Chief of the *Yearbook of Diagnostic Radiology*. She has given over 150 invited lectures all over the world including China, Japan, Korea, Australia, India, South Africa, Europe, and the Middle East. She has served as Visiting Professor at many of the world's premier medical institutions including Harvard, Stanford, and Johns Hopkins Universities and the Karolinska Institute in Stockholm, Sweden.

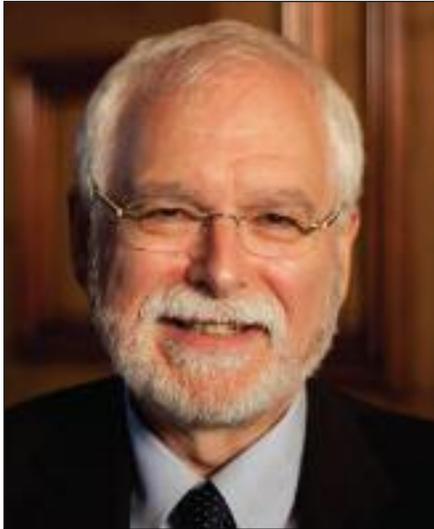
Dr. Osborn has received numerous awards, including Honorary Membership in a number of international radiology professional societies, the Marie Curie Award from the American Association of Women in Radiology, the gold medal from the Chicago Radiological Society, the Rosenblatt Prize for Excellence and also the Distinguished Service Award from the University of Utah, the 2002 Beclere medal from the International Society of Radiology, the 2003 gold medal from the American Society of Neuroradiology and the Magna Cum Laude Scientific Exhibit Award from the Radiological Society of North America (RSNA). In November, 2000, she was named the first-ever recipient of the RSNA's Outstanding Educator Award. She received the gold medal from RSNA in November, 2006, the gold medal of the Asian-Oceanian Congress of Radiology at its biennial meeting in Hong Kong in August, 2006, the gold medal from the Federation of Mexican Societies of Radiology and Imaging in 2007 and the gold medal from the Turkish Society of Radiology in 2008.

Dr. Osborn was the first woman elected president of the American Society of Neuroradiology, the largest subspecialty society in radiology. She served as First Vice-President of the Radiological Society of North America and Chair of the Board of Trustees of the RSNA's Research and Education Foundation. Together with Dr. Ric Harnsberger, Dr. Osborn co-founded Amirsys, Inc., in 2001, serving as its EVP and Editor-in-Chief until 2010 when she became CEO of Amirsys Publishing, Inc.



JOIN US OUTSIDE OF LAKESIDE BALLROOM FOLLOWING THE SESSION FOR A BOOK SIGNING AT 6:00 PM!

FEATURED SPEAKERS



SPECIAL LECTURE

JOHN DONOGHUE, PhD

Henry Merritt Wriston Professor in the Department of Neuroscience at Brown University

Monday, October 8, 8:15 – 8:35 AM
Merging Mind and Machine to Restore Movement

John Donoghue, PhD is Henry Merritt Wriston Professor in the Department of Neuroscience at Brown University, Director of the Brown Institute for Brain Science, and a Senior Career Research Scientist of the Rehabilitation R&D Service with the Department of Veterans Affairs. From 1991 to 2006, Dr. Donoghue was the founding Chairman of the Department of Neuroscience at Brown. For more than 20 years, Dr. Donoghue has conducted research on brain computer interfaces and his laboratory is internationally recognized as a leader in this field. Dr. Donoghue has published over 80 scientific articles in leading journals such as *Nature and Science*, and has served on advisory panels for the National Institutes of Health, the National Science Foundation and NASA. Dr. Donoghue has won awards for his work from *Discover*, *Popular Mechanics*, and *Reader's Digest* magazines. In 2007, he won the

K. J. Zulch Prize, Germany's highest honor for neurological research. Dr. Donoghue is a fellow in the American Institute for Medical and Biomedical Engineering and the American Association for the Advancement of Science as well as a member of the board of directors for the MIT Media Lab. Dr. Donoghue received an AB from Boston University in 1971, an MS in anatomy from the University of Vermont in 1976, and a PhD in neuroscience from Brown University in 1979.



WALTER E. DANDY ORATOR

RAY KURZWEIL

Author, Inventor, Futurist

Monday, October 8, 10:55 – 11:30 AM
The Acceleration of Technology in the 21st Century: The Impact on Medicine, Health and Society

Ray Kurzweil has been described as “the restless genius” by the *Wall Street Journal*, and “the ultimate thinking machine” by *Forbes. Inc. Magazine* ranked him #8 among entrepreneurs in the United States, calling him the “rightful heir to Thomas Edison,” and PBS included Ray as one of 16 “revolutionaries who made America,” along with other inventors of the past two centuries. As one of the leading inventors of our time, Mr. Kurzweil was the principal developer of the first CCD flat-bed scanner, the first omni-font optical character recognition, the first print-to-speech reading machine for the blind, the first text-to-speech synthesizer, the first music synthesizer capable of recreating the grand piano and other orchestral instruments, and the first commercially marketed large-vocabulary speech recognition.

Among Mr. Kurzweil's many honors, he is the recipient of the \$500,000 MIT-Lemelson Prize, the world's largest for innovation. In 1999, he received the National Medal of Technology, the nation's highest honor in technology, from President Clinton in a White House ceremony. And in 2002, he was inducted into the National Inventor's Hall of Fame, established by the US Patent Office. He has received nineteen honorary Doctorates and honors from three U.S. presidents. Mr. Kurzweil has written four national bestselling books. *The Age of Spiritual Machines* has been translated into 9 languages and was the #1 bestselling book on Amazon in science. Ray's latest book, *The Singularity is Near*, was a *New York Times* best seller, and has been the #1 book on Amazon in both science and philosophy.



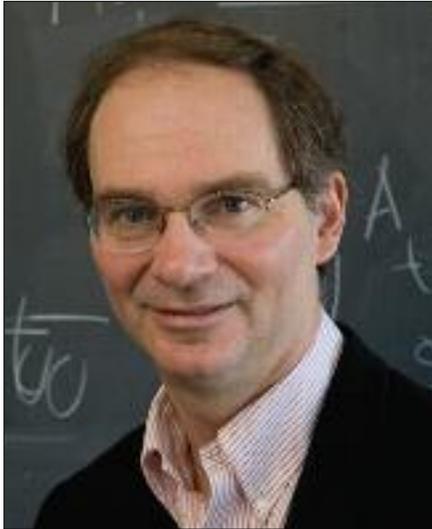
JOIN US IN THE EXHIBIT HALL FOR A BOOK SIGNING AT 11:30 AM!

Past Walter E. Dandy Orators

2011 Jon Meacham
2010 Condoleezza Rice, PhD
2009 Walter Isaacson
2008 Maya Angelou, PhD

2007 Sir Salman Rushdie
2006 David McCullough
2005 Professor Wole Soyinka
2004 President Mikhail Gorbachev

2003 Robert L. Bondar, MD, PhD
2002 Jane Goodall, PhD
2001 Stephen E. Ambrose, PhD
2000 Senator John Glenn



SPECIAL LECTURE

JONATHAN SKINNER, PhD

John Sloan Dickey Third Century Chair of Economics, Dartmouth College

Tuesday, October 9, 8:14 – 8:31 AM

Technology Growth and Cost Growth in Healthcare

Jonathan Skinner, PhD, is John Sloan Dickey Third Century Chair of Economics, Dartmouth College, and a professor in the Dartmouth Institute of Health Policy and Clinical Practice, Dartmouth Medical School. Dr. Skinner is a research associate at the National Bureau of Economic Research and a former editor of the *Journal of Human Resources*. His research has focused on factors influencing household savings, regional variations and growth in health care expenditures and productivity, and racial disparities in health care utilization and outcomes. He is a member of the Institute of Medicine of the National Academies, and received his PhD from the University of California, Los Angeles.



SPECIAL LECTURE

GEOFF COLVIN

Journalist

Tuesday, October 9, 11:05 – 11:30 AM

Talent is Overrated

Geff Colvin's regular column in *Fortune* magazine, his frequent cover stories for the magazine, and his broadcasts on the CBS Radio Network, have garnered him millions of eyes and ears who count on and respect his insights on the issues driving change in business and the economy. One of the most respected voices in business journalism, Mr. Colvin helps business look ahead at the key issues impacting business today: the global economy; government regulation; the impact of Washington politics/policy on the business environment and the economy; health care; leadership and management; global competitiveness and more. The insights he delivers are remarkable in their clarity, giving leaders the perspective they need to make better decisions about the future of their business. Geoff's groundbreaking book, *Talent Is Overrated: What Really Separates World-Class*

Performers From Everybody Else – has remained a popular-selling book since it was released in 2008. His book, *The Upside of the Downturn*, looks at how business can compete in an age of diminished expectations.



JOIN US IN THE EXHIBIT HALL FOR A BOOK SIGNING AT 11:30 AM!



SPECIAL LECTURE

MICHAEL McMILLAN

Executive Director of Market and Network Services for Cleveland Clinic

Wednesday, October 10, 10:16 – 10:38 AM

Future of Healthcare Delivery from Corporate America

Michael McMillan is the Executive Director of Market and Network Services for Cleveland Clinic, a 6 billion dollar healthcare system with operations in Ohio, Florida, Nevada, and around the globe. He is responsible for all aspects of the business relationship with health plans and employers, including managed care business development, network management, pricing, contracting and direct sales for Cleveland Clinic's world class products and services. Within this scope, Mr. McMillan is accountable for developing Cleveland Clinic's value-based approach to healthcare as the organization continues its leadership role within a changing industry. Mr. McMillan is also the President of the Cleveland Clinic Community Physician Partnership, a 1000 physician network of independent community based physicians.



SPECIAL LECTURE

DAVID WEINBERGER, PhD

Author

Wednesday, October 10, 11:03 – 11:30 AM

Too Big to Know: Rethinking Knowledge Now That the Facts Aren't the Facts, Experts are Everywhere and the Smartest Person in the Room is the Room

David Weinberger, PhD, began his "career" in the late 70s teaching philosophy at New Jersey's Stockton State College for five years. (He has a PhD in philosophy from the University of Toronto.) During this time he maintained his steady freelance writing of humor, reviews and intellectual and academic articles, publishing in places as diverse as *The New York Times*, *Harvard Business Review*, *Smithsonian*, *Alfred Hitchcock's Mystery Magazine* and *TV Guide*.

In 1985, after being denied tenure because the tenure quota was filled, and after an enthusiastic but well-mannered student demonstration in his support, he became a junior marketing guy at Interleaf, an innovative start-up with new ideas on how to

create and structure documents. At Interleaf he helped launch the industry's first document management system and its first electronic document publishing system, years ahead of the Web. He left Interleaf after 8 years, as VP of Strategic Marketing. He then founded the one-person strategic marketing company, Evident Marketing, in 1994 and within two years counted among his clients a wide variety of companies, including RR Donnelley, Intuit, Sun Microsystems, Esther Dyson's Release 1.0 and CSC Index.

In late 1995, he joined Open Text as VP of Strategic Marketing because he saw an opportunity to help shape the way intranets are used. As part of the senior management team, Weinberger helped Open Text move from one of the first Web search engine companies (the engine behind Yahoo!) to market—and thought-leadership in Web-based collaborative software.

After helping to take Open Text public in 1996, Weinberger returned to consulting, writing and speaking, helping to found a couple of dot-coms, and serving on industry and company boards. In 2000, Perseus published *The Cluetrain Manifesto*, of which Weinberger is a co-author. It became a national best-seller. In 2002, Perseus published *Small Pieces Loosely Joined* to enthusiastic reviews. Weinberger currently writes too much, including three blogs, articles for *Wired*, *Salon*, *USA Today*, *Esther Dyson's Release 1.0*, and many more. He is working on another book that he doesn't want to talk about yet.

During the 2004 presidential campaign, he was Senior Internet Advisor to the Howard Dean campaign, consulting on Internet policy. In 2004 he was made a Fellow at Harvard's prestigious Berkman Institute for Internet & Society.



JOIN US IN THE EXHIBIT HALL FOR A BOOK SIGNING AT 11:30 AM!

CNS PRESIDENT

CHRISTOPHER E. WOLFLA, MD

Christopher Edward Wolfla, MD, graduated with High Honors from Indiana University, Bloomington, and received his medical degree from Indiana University School of Medicine. He completed his Neurosurgery residency at Indiana University Medical Center under the direction of Drs. Robert L. Campbell and Paul B. Nelson. After residency, he completed a Fellowship in Spinal Neurosurgery at the Medical College of Wisconsin under the direction of Drs. Sanford J. Larson and Dennis J. Maiman. Upon completion, he joined the faculty of the University of Oklahoma Health Sciences Center Department of Neurosurgery, where he held the Greenberg Endowed Chair. In 2005, Dr. Wolfla returned to the Department of Neurosurgery at the Medical College of Wisconsin where he is currently Professor of Neurosurgery and Director of the Neurosurgery Residency Program.



A member of both Phi Beta Kappa and Alpha Omega Alpha, Dr. Wolfla has an active clinical practice centered on spinal neurosurgery. He has authored more than 35 scientific articles and chapters in medical texts. His research interests have focused on spine biomechanics and spinal cord physiology. He has served on the Executive Committee of the Congress of Neurological Surgeons since 2000 and has held numerous offices. Additionally, he has served on the Executive Committee of the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves, where he has held the offices of Member-at-Large, Treasurer, Chair and is currently the immediate Past Chair.

Dr. Wolfla has a wide variety of hobbies and outside interests. He lives in Brookfield, Wisconsin with his wife Catherine Slocum Wolfla and two children – Andrew (19) and Julie (13).



CNS PRESIDENT-ELECT

ALI R. REZAI, MD

Ali R. Rezai, MD, is Professor of Neurosurgery, Director of the Center for Neuromodulation, and the Stanly and Joan Ross Chair in Neuromodulation at the Ohio State University. Dr. Rezai majored in Biology at UCLA, earned his medical degree with honors from the University of Southern California, and received neurosurgical training at New York University under the direction of Joseph Ransohoff and Patrick Kelly. He completed his subspecialty training in functional neurosurgery at the University of Toronto, then joined the neurosurgical faculty at New York University Medical Center. Subsequently, he moved to the Cleveland Clinic to become the director of functional neurosurgery and the Center for Neurological Restoration and in August 2009, he joined the neurosurgical faculty at OSU.

Dr. Rezai's expertise is functional neurosurgeon and management of patients with movement disorders, chronic pain and psychiatric disorders. His research focuses on mechanisms of neurostimulation and novel clinical applications. Dr. Rezai has trained over 30 fellows in functional neurosurgery. He is the editor of two books, author of over 130 peer reviewed publications and 30 book chapters. He is on the Editorial Board of Neurosurgery and five other journals. He has been a principal or co-investigator on multiple NIH grants and has delivered over 400 lectures internationally. He holds 29 issued US patents.

Dr. Rezai has been actively involved in numerous capacities with the Congress of Neurological Surgeons including Annual Meeting and Scientific Program Chairman and has served on its Executive Committee for the past eleven years. Dr. Rezai is currently the President for the American Society of Stereotactic and Functional Neurosurgery (ASSFN), and the President of the North American Neuromodulation Society (NANS).

ANNUAL MEETING CHAIRMAN

GANESH RAO, MD

Ganesh Rao, MD, is honored to serve as the 2012 Annual Meeting Chairman.

Dr. Rao is an Assistant Professor of Neurosurgery at The University of Texas M.D. Anderson Cancer Center.

Dr. Rao majored in Chemistry and Microbiology at the University of Arizona. He also received his medical degree from the University of Arizona. He completed his neurological surgery residency at the University of Utah under M. Peter Heilbrun, MD and William T. Couldwell, MD, PhD. During his residency he spent two years in the laboratory of Daniel. W. Fults, MD.

After completing his residency he completed a one year fellowship in Neurosurgical Oncology at The University of Texas M.D. Anderson Cancer Center. He joined the department as a faculty member in 2006.

Dr. Rao's research interests include the modeling of brain tumors in mice, using these models to investigate various signaling pathways on tumorigenesis and for preclinical testing of novel therapeutic agents. His research has been funded by the National Institutes of Health since 2008.

Dr. Rao has served the CNS since 2001 as a member of the Scientific Program Committee. He joined the Executive Committee in 2007.

Dr. Rao, his wife Lorelei and their twin sons Kiran and Zain live in Bellaire, Texas.



SCIENTIFIC PROGRAM CHAIRMAN

ALAN M. SCARROW, MD, JD

Alan M. Scarrow, MD, JD, is a graduate of the medical and law schools at Case Western Reserve University. He completed his neurosurgery residency at the University of Pittsburgh in 2003. During his residency he spent a year in Washington, D.C. working in the U.S. Senate as part of the CNS Public Policy Fellowship. Dr. Scarrow is a neurosurgeon at Mercy Clinic in Springfield, Missouri where he also serves as Clinic President. He has been a member of the CNS Executive Committee since 2005 and is Corresponding Secretary of the Council of State Neurosurgical Societies. Dr. Scarrow is married to Meera Scarrow, MD, who is an OB/GYN at Mercy Clinic. They have three children – Evelyn (11), William (8), and Harrison (5) – and enjoy working on their organic farm in their free time.

ANNUAL MEETING COMMITTEE



Annual Meeting Chairman
Ganesh Rao, MD



Scientific Program Chairman
Alan M. Scarrow, MD, JD

Vice Scientific Program Chairman
Ashwini D. Sharan, MD

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Anil Nanda, MD, FACS (CNS)
Martin Sames, MD (CENS)
Eduard Zverina, MD, PhD, FCMA (CENS)
 Central European
Neurosurgical
Society (CENS)

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Nicholas C. Bambakidis, MD
Jason P. Sheehan, MD, PhD

Neurosurgical Forum

Edward R. Smith, MD
Nader Pouratian, MD, PhD

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Neurosurgical Societies
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Sepideh Amin-Hanjani, MD

Section on Disorders of the Spine and Peripheral Nerves

Joseph S. Cheng, MD, MS

Section on Neurotrauma and Critical Care

Geoffery T. Manley, MD, PhD

Section on Pediatric Neurological Surgery

Alan R. Cohen, MD

Section on Pain

Christopher J. Winfree, MD

Section on Stereotactic and Functional Neurosurgery

Ali Rezai, MD

Section on Tumors

Frederick F. Lang, MD

Information Technology Advisory Committee

Brian T. Ragel, MD
Ashok R. Asthagiri, MD

Section Sessions

Brian L. Hoh, MD
Costas G. Hadjipanayis, MD, PhD

Practical Courses

Steven N. Kalkanis, MD
Brian T. Ragel, MD
Bernard R. Bendok, MD, FACS

Luncheon Seminars

Aviva Abosch, MD, PhD
Ashok R. Asthagiri, MD
Catherine A. Mazzola, MD

Evening Sessions

Zoher Ghogawala, MD
Chaim B. Colen, MD, PhD

Special Courses

Charles L. Rosen, MD, PhD
Michael P. Steinmetz, MD

Operative Neurosurgery

Aaron A. Cohen-Gadol, MD
Aaron S. Dumont, MD

Live Surgery Symposium

Elad I. Levy, MD, FACS, FAHA

Resident SANS Challenge

Zachary N. Litvack, MD, MCR
Gary R. Simonds, MD

Sergeant-at-Arms

Jonathan H. Sherman, MD
Sameer A. Sheth, MD, PhD

Operative Neurosurgery

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Catherine Wolfla

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Jointly sponsored by the Congress of Neurological Surgeons

Dear Friends and Colleagues:

It is with great pleasure that we invite you to attend the World Federation of Neurosurgical Societies (WFNS) Spine Committee Bi-Annual Conference 2012. This second WFNS spine focused symposium will address the most important and cutting-edge issues important to spine surgeons and those who care for spinal disorders around the world. We have amassed an expert faculty to instruct you, and hope that the topics explored here will help you to improve and expand your practice at home.

Registration information is available online at www.cns.org. Make your arrangements today. We look forward to having you join us in Chicago this October.

Sincerely,



Christopher M. Loftus, MD
WFNS Course Director
Professor and Chairman - Department of Neurosurgery
Loyola University Stritch School of Medicine



Bong-Soo Kim, MD
Scientific Course Director
Assistant Professor, Neurosurgery
Director, Minimally Invasive and Complex Spine Fellowship Program
Temple University Hospital
Temple University School of Medicine



Patrick J. Connolly, MD
Co-Course Director
Associate Professor, Neurosurgery
Neurosurgery Clerkship Director
Temple University Hospital
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Earn additional CME! The CNS designates this live activity for a maximum of 11.5 AMA PRA Category 1 Credits™.

Physician: \$300 Nurse/PA: \$200

Register for the WFNS course and the CNS Annual Meeting and save \$100 on your registration fees.



Thursday, October 4, 2012

8:00 AM – 4:45 PM Plenary Session

8:00 – 10:00 AM **DEGENERATIVE SPINAL DISORDERS**

- **Controversies in the Management of Cervical Spondylotic Myelopathy**
William Welch (Philadelphia, USA)
- **Management of Ossification of Posterior Longitudinal Ligament (OPLL) in the Thoracic Spine**
Junichi Mizuo (Japan)
- **Cervical Artificial Disc Replacement**
Francois Porchet (Switzerland)
- **Lumbar Artificial Disc Replacement**
Chun Kun Park (Korea)
- **Posterior Dynamic Lumbar Fusion**
PS Ramani (India)
- **Current Management of Lumbar Spondylolisthesis**
Paul Marcotte (Philadelphia, USA)

10:00 – 10:15 AM **Break**

10:15 AM – 12:20 PM **CURRENT MANAGEMENT OF SPINAL ONCOLOGIC DISORDERS**

- **Current Management of Primary Spinal Cord Tumors**
Jacques Brotchi (Belgium)
- **Current Management of the Spinal Metastases**
- **The Role of Minimally Invasive Techniques in the Management of Spinal Neoplastic Disease**
Ibet Marie Y. Sih (Philippines)
- **Corpectomy and Spondylectomy for Spinal Neoplasms: How I do it**
Ziya L. Golkaslan (Baltimore, USA)
- **Radiosurgery for Spinal Neoplasms**
Peter Gerszten (Pittsburgh, USA)

12:20 – 1:10 PM **Lunch Break**

1:10 – 2:50 PM **MINIMALLY INVASIVE SURGERY**

- **Rationale for Minimally Invasive Spine Surgery**
Trent Treadway (Seattle, USA)
- **Minimally Invasive Cervical Spine Surgery**
Mehmet Zileli (Turkey)
- **Minimally Invasive Approaches for Thoracic Decompression from Discectomy to Corpectomy**
Larry Khoo (Los Angeles, USA)
- **Minimally Invasive Approaches for Lumbar Herniated Disc**
Enrique Osorio-Fonseca (Columbia)

2:50 – 3:05 PM **Break**

3:05 – 4:45 PM **MINIMALLY INVASIVE SURGERY**

- **Robotic Spine Surgery**
Yoon Ha (Korea)
- **Minimally Invasive Approaches to the Treatment of Low Back Pain: Posterior Approach (TLIF and PLIF)**
Jean-Marc Voyadzis (Washington DC, USA)
- **Minimally Invasive Approaches to the Treatment of Low Back Pain: Trans-psoas Approach (XLIF/DLIF)**
Eric Elowitz (New York, USA)
- **Minimally Invasive Approach to the Sacro-iliac Joint Disease**
Mark Reiley (Los Angeles, USA)

Friday, October 5, 2012

8:00 AM – 12:30 PM Plenary Session

8:00 – 10:00 AM **DIAGNOSIS AND MANAGEMENT IN SPINAL DEFORMITY**

- **Synopsis of Adolescent Idiopathic Scoliosis**
Amer Samdani (Philadelphia, USA)
- **Diagnosis and Patient Selection for Adult Deformity Surgery**
Joshua Heller (Philadelphia, USA)
- **Surgery for Degenerative Adult Spinal Deformity: How I Do It**
Motoi Shoda (Japan)
- **The Role of Minimally Invasive Techniques in the Management of Adult Deformity**
Eli Baron (Los Angeles, USA)

10:00 – 10:15 AM **Break**

10:15 AM – 12:15 PM **SPINAL TRAUMA**

- **Management of Upper Cervical Spine Injuries**
Neil Malhotra (Philadelphia, USA)
- **Management of Subaxial Cervical Spine Injuries**
Jung Keun Suh (Korea)
- **An Evidence-Based Analysis of Vertebroplasty and Kyphoplasty**
Srinivas Prasad (Philadelphia, USA)
- **Management of Thoracolumbar Spine Injuries**
Jack Jallo (Philadelphia, USA)

12:30 PM **Closing Remarks**

Speakers Subject to Change.

PC01 **8:00 AM – 5:00 PM** **\$500**

 **Stroke Center Care for Allied Health Professionals**

COURSE DIRECTORS: Jay U. Howington, Adnan Hussain Siddiqui, Daniel L. Surdell

FACULTY: Bernard R. Bendok, Mandy Binning, Peng Roc Chen, Ricardo A. Hanel, Pascal Jabbour, Alexander Arash Khalessi, Laura Lewis-Mason, J.D. Mocco, Andrew J. Ringer, Kenneth V. Snyder, Rabih G. Tawk, Erol Veznedaroglu, Babu Guai Welch, Henry H. Woo

COURSE DESCRIPTION: The course provides a comprehensive introduction to medical, surgical and endovascular management of ischemic and hemorrhagic stroke in the setting of a Stroke Care Center. The design will allow participants to familiarize themselves with the affected cerebrovascular anatomy and the diagnosis and management of ischemic stroke and its attendant predisposing disease states including cardiac embolic sources, arterial dissections as well as extracranial and intracranial atherosclerotic disease. The course will address comprehensive diagnosis and endovascular management of hemorrhagic stroke emanating from ruptured intracranial arteriovenous malformations and arteriovenous fistulae. Subarachnoid hemorrhage resulting from ruptured intracranial aneurysms will be discussed with specific discussion of management of acute ruptured aneurysms as well as current endovascular therapies for associated delayed vasospasm. Venous sinus thrombosis is a common cause of hemorrhagic stroke in young patients that requires specific management considerations, which will be discussed. Presenters will provide a comprehensive overview of the organization of a stroke care center, telemedicine programs, emergency room management, medical management of the stroke patient and rehabilitation following discharge from the acute care setting. Attendees will be introduced to the group issues relating to current billing, coding and reimbursement for the care of the acute stroke patients and those with cerebrovascular disease.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the anatomy and demographics of ischemic and hemorrhagic stroke.
- ◆ Establish causes and medical, surgical and endovascular management of ischemic stroke secondary to cardiac disease, intracranial and extracranial atherosclerosis and dissection.
- ◆ Incorporate diagnosis and management of hemorrhagic stroke resulting from ruptured aneurysms, arteriovenous malformations and fistulae and venous sinus thrombosis into current practice.
- ◆ Adopt an understanding of the organization of an effective stroke care center, telemedicine, emergency room triage and medical management and subsequently rehabilitation of stroke patients.
- ◆ Implement the reimbursement considerations for management of patients in a stroke care center.

Nursing contact hours may be provided through AANN. The American Association of Neuroscience Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. Physician assistants will receive credit for attendance. Each physician assistant will need to contact his or her individual membership association and certification board to determine the requirements for accepting credits. All attendees will receive a confirmation of attendance.

PC02 **8:00 AM – 5:00 PM** **\$1700**

Minimally Invasive Spinal Surgery (Cadaver Course)

COURSE DIRECTORS: Richard G. Fessler, John C. Liu

FACULTY: Kurt M. Eichholz, Langston T. Holly, Alfred T. Ogden, John E. O'Toole, Avelino Parajon, Justin S. Smith, Trent Lane Tredway

COURSE DESCRIPTION: This course will focus on minimally invasive procedures for cervical and lumbar spine surgery. Techniques for decompression, fixation, and fusion will be discussed.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate various minimally invasive techniques into their approach for cervical and lumbar spine surgery.
- ◆ Identify the indications, results and potential complications for these procedures.

PC03 **8:00 AM – 12:00 PM** **\$450**

Trauma Update Part I: Traumatic Brain Injury

COURSE DIRECTOR: Raj K. Narayan

FACULTY: Geoffrey T. Manley, David O. Okonkwo, Harold L. Rekate, Shelly D. Timmons

COURSE DESCRIPTION: This course will review the current thinking on the non-surgical and surgical treatment of traumatic brain injury in pediatrics and adults. Newer monitoring techniques, as well as promising new therapies, will be discussed.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Structure treatment plans around recent developments in this field.
- ◆ Adopt current management surgical and non-surgical strategies and guidelines.

PC04 **1:00 – 5:00 PM** **\$450**

 **3-D Anatomy (Supratentorial)**

COURSE DIRECTOR: Albert L. Rhoton, Jr.

COURSE DESCRIPTION: This course will provide three-dimensional microsurgical instruction on the following topics: routes through the anterior and posterior cerebrum and temporal lobe; anatomy and approaches to the lateral and third ventricles and pineal region; anterior skull base and cavernous sinus; and transsphenoidal, transmaxillary and transoral approaches.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Plan the routes through the anterior and posterior cerebrum and temporal lobe.
- ◆ Identify the anatomy and approaches to the lateral and third ventricles and pineal region, the anterior skull base and cavernous sinus and transsphenoidal, transmaxillary and transoral approaches.

PC05 **1:00 – 5:00 PM** **\$350**

The Essentials of Neurosurgical ICU Management

COURSE DIRECTORS: Owen B. Samuels, Alex B. Valadka
FACULTY: Peter D. LeRoux, Joshua E. Medow, Adam Webb
COURSE DESCRIPTION: This course will focus on ancillary care personnel and will provide a broad spectrum of information regarding the management of critically-ill neurosurgical patients.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the most up-to-date recommendations into treatment plans for increased intracranial pressure management, hemodynamic monitoring and measurement, and ventilatory support.
- ◆ Incorporate the most up-to-date recommendations into treatment plans for infection prevention and treatment, neurological examination, and electrocorticography monitoring.

Nursing contact hours may be provided through AANN. The American Association of Neuroscience Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. Physician assistants will receive credit for attendance. Each physician assistant will need to contact his or her individual membership association and certification board to determine the requirements for accepting credits. All attendees will receive a confirmation of attendance.

PC06 **1:00 – 5:00 PM** **\$550**

Cervical Spondylotic Myelopathy and Radiculopathy: Treatment Approaches and Options

COURSE DIRECTOR: Michael G. Kaiser
FACULTY: Kurt M. Eichholz, James S. Harrop, Langston T. Holly, John E. O'Toole

COURSE DESCRIPTION: This course will present the pathophysiology, clinical presentation, and current diagnostic modalities involved in the care of cervical degenerative disease. The indications, techniques and complications associated with the operative management of cervical degenerative disease, including correction of degenerative deformities, will be reviewed through lectures, case-presentations and hands-on practical exercises.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the appropriate indications and recommend state-of-the-art techniques for surgical management of degenerative disease of the cervical spine.
- ◆ Establish steps to avoid common complications.

PC07 **1:00 – 5:00 PM** **\$450**

Cranial and Spinal Radiosurgery Update

COURSE DIRECTOR: Randy L. Jensen
FACULTY: Antonio DeSalles, Kelly D. Foote, William A. Friedman, Michael William McDermott, Jason P. Sheehan, Andrew E. Sloan

COURSE DESCRIPTION: This course will discuss the appropriate use of various radiosurgery delivery platforms for benign and malignant cranial lesions.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Recommend radiosurgery more safely by recognizing the appropriate use of radiosurgery for benign and malignant cranial lesions.
- ◆ Differentiate between the various radiosurgery delivery platforms.
- ◆ Implement radiosurgery delivery techniques to avoid injury to intracranial neurovascular structures.
- ◆ Identify the indications for the use of radiosurgery for functional disorders and pain.
- ◆ Apply techniques learned in this course to formulate a radiosurgery plan for a given cranial pathology.

PC08 **1:00 – 5:00 PM** **\$450**

Using Evidence-Based Medicine to Manage Spinal Disorders

COURSE DIRECTORS: Peter D. Angevine, Paul C. McCormick
FACULTY: John Chi, John E. O'Toole

COURSE DESCRIPTION: This course will discuss spinal tumors, degenerative cervical and lumbar disease, use of biological substances, and minimally invasive techniques.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss recent evidence regarding use of biological substances for spinal fusion.
- ◆ Review the evidence regarding minimally invasive techniques for spinal disorders.
- ◆ Incorporate the latest evidence from the literature into their management of degenerative cervical and lumbar spinal disorders.

PC09 **1:00 – 5:00 PM** **\$450**

Masters of Cranial Neuroendoscopy

COURSE DIRECTORS: Alan R. Cohen, James M. Drake
FACULTY: Johnathan A. Engh, Andre Grotenhuis, Carl B. Heilman, John A. Jane, Jr., David F. Jimenez, Henry W.S. Schroeder, Theodore H. Schwartz, Mark M. Souweidane, John C. Wellons, III

COURSE DESCRIPTION: This course will cover the management of pituitary adenomas, meningiomas, craniopharyngiomas, chordomas, hydrocephalus, intraventricular tumors and cysts and other skull base tumors.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Compose management practices for skull base tumors.
- ◆ Strategize the use of endoscopy for intracranial applications including endonasal and intraventricular approaches.

PC10 **1:00 – 5:00 PM** **\$450**

Open Aneurysm Surgery: A 3-D Practical Course

COURSE DIRECTORS: Michael T. Lawton, Byron Gregory Thompson, Jr.

FACULTY: Fady T. Charbel, Ali F. Krisht, Jacques J. Morcos, Howard A. Riina, Michael Tymianski

COURSE DESCRIPTION: This course will discuss optimal approaches for management of intracranial aneurysms.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze case presentations of patients presenting with intracranial aneurysms to select the optimal (endovascular or microsurgical) approach.
- ◆ Interpret advanced preoperative imaging evaluation to maximize effectiveness of preoperative surgical planning.
- ◆ Plan for skull base approaches for anterior and posterior circulation aneurysm surgery in order to optimize exposure for complex aneurysms.
- ◆ Initiate adjunctive intraoperative imaging techniques to optimize obliteration of cerebral aneurysms with preservation of parent and branch vasculature.

PC11 **1:00 – 5:00 PM** **\$450**

Trauma Update Part II: Spinal Cord and Spinal Column Injury

COURSE DIRECTOR: Michael G. Fehlings

FACULTY: Bizhan Aarabi, Steven Casha, Richard G. Ellenbogen, James S. Harrop, Christopher I. Shaffrey

COURSE DESCRIPTION: This course will discuss classification of spinal trauma and principles of management and treatment of spinal cord injury.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the classification of spinal trauma, principles of management of spinal cord injury (SCI).
- ◆ Implement the appropriate use of steroids and the timing of surgery and the principles of managing cervical, thoracic and thoracolumbar spine injuries into treatment plans.
- ◆ Recognize emerging clinical trials in acute SCI and issues of pediatric spine trauma.

PC12 **1:00 – 5:00 PM** **\$450**

Neurosurgery Board Review

COURSE DIRECTOR: Allan D. Levi

FACULTY: James S. Harrop, Thomas J. Leipzig, Allen K. Sills, Jr., Robert J. Spinner

COURSE DESCRIPTION: This course will provide an in-depth review of likely oral board questions and topics.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss strategies for studying and mastering a wide range of typical exam-style questions.
- ◆ Plan a timeline for case collection, submission, studying and practice sessions.
- ◆ Focus on high-yield clinical scenarios very likely to appear on the exam.

PC13 **1:00 – 5:00 PM** **\$450**

Epilepsy: Patient Selection, Operative Approaches and Complication Avoidance

COURSE DIRECTOR: Gordon H. Baltuch

FACULTY: Warren W. Boling, Timothy H. Lucas II, David W. Roberts, Robert E. Wharen, Kareem A. Zaghoul

COURSE DESCRIPTION: This course will cover the current thinking of the indications, various options and surgical management of medically intractable epilepsy patients.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the indications of epilepsy surgery.
- ◆ Plan surgical techniques.
- ◆ Analyze results and complications of epilepsy surgery.

PC14 **1:00 – 5:00 PM** **Complimentary**

RRC Next Accreditation System, Milestones, and the Neurosurgery Matrix

COURSE DIRECTOR: Nathan R. Selden

FACULTY: H. Hunt Batjer, Pamela L. Derstine, Alexander Arash Khalessi, Rebecca S. Miller, Ingrid Philibert

COURSE DESCRIPTION: This course will be particularly useful for Residency Program Directors, Associate Program Directors, Program Coordinators, Department Chairs, and other faculty and educational leaders in academic neurosurgery centers.

The course will cover the dynamic changes now occurring in the RRC Common Program Requirements and Neurosurgery Residency Program Requirements, the RRC Milestones Curriculum initiative, and the Neurosurgery Matrix Curricular initiative, due to roll out in all ACGME accredited program in July, 2013, will be reviewed by members of the Neurosurgery RRC, the ACGME, and the Society of Neurological Surgeons Committee on Resident Education (CoRE). Best practices and compliance with the latest resident duty hour regulations will also be covered. Time for questions and interactive discussion with panel members will be provided.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the principal new requirements for ACGME accredited neurological surgery residencies.
- ◆ Describe the principal components of the ACGME Milestones teaching and assessment system.
- ◆ Identify curricular resources being provided by the Society of Neurological Surgeons Matrix Curriculum.
- ◆ Design strategies for programs at their institution to keep up with changing curricular requirements and best practices.

6:00 - 8:00 PM

DINNER SEMINAR 1

Treatment of Brain Metastases

MODERATOR: Steven N. Kalkanis

FACULTY: David W. Andrews, Mark E. Linskey, Timothy C. Ryken

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Adopt a better understanding of the most current guidelines for the treatment of brain metastases.
- ◆ Outline the best clinical scenarios for choosing radiosurgery vs. surgical resection for brain metastases.
- ◆ Identify areas of research needed to fill existing knowledge gaps in brain metastases treatment, with a particular focus on the emerging role of radiosurgery for single, multiple and recurrent lesions.

6:00 - 6:15 PM

Introduction

Steven N. Kalkanis

6:15 - 6:35 PM

Brain Mets Should Come Out!

Timothy C. Ryken

6:35 - 6:45 PM

Discussion

6:45 - 7:05 PM

Brain Mets Should Be Treated with Radiosurgery Only

David W. Andrews

7:05 - 7:15 PM

Discussion

7:15 - 7:35 PM

Newer Treatments for Brain Mets

Mark E. Linskey

7:35 - 7:45 PM

Discussion

7:45 - 8:00 PM

Wrap-up

Steven N. Kalkanis

MK Restaurant

MK is a smart, contemporary space that beautifully showcases Chef and Owner Michael Kornick's playful and confident New American cooking.

Dinner Seminar includes a three-course plated dinner and wine service. Transportation will be provided.

Food & Wine Magazine raves, "Windy City diners are being blown away by mk, a showcase for Michael Kornick!"

Join us for the 6th Annual ANSPA CME Meeting!

Sheraton Chicago Hotel and Towers
Chicago, Illinois
Saturday, October 6
7:00 AM - 5:30 PM

ANSPA will be holding its Fall Meeting in conjunction with the CNS Annual Meeting in Chicago, IL! ANSPA plans to offer a day of neurosurgical lectures from top experts in the field. Always an attendee favorite, this agenda will again feature a panel discussion on the Role of Physician Assistants in a Multiple Practice Setting. Breakfast and lunch are included with the registration fee. Come to Chicago to join your fellow PAs for a day of continuing education, networking, and fun!

Program details and registration information will be available at www.ANSPA.org

For more information, please contact:
Erin McClure
ANSPA CME Manager
cme@anspa.org



PC15 **8:00 AM – 4:00 PM** **\$250**

Simulation Based Neurosurgical Training

COURSE DIRECTORS: James S. Harrop, Darlene Angela Lobel, Ali R. Rezai

FACULTY: Bernard R. Bendok, Peter Campbell, Rohan Chitale, Aaron S. Dumont, Aruna Ganju, Daniel J. Hoh, Pascal Jabbour, Thomas Kerwin, J D. Mocco, Daniel M. Prevedello, Andrew J. Ringer, Adnan Hussain Siddiqui, Don Stredney, Erol Vezendaroglu

COURSE DESCRIPTION: This course will demonstrate techniques for craniotomy for trauma, placement of an external ventricular drain; cervical spine decompression and lumbar pedicle screw placement; repair of CSF leak; performance of cerebral angiogram; and performance of retrosigmoid craniotomy.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Demonstrate proficiency using procedure-based simulators for craniotomy for trauma, placement of an external ventricular drain; cervical spine decompression and lumbar pedicle screw placement; repair of CSF leak; performance of cerebral angiogram; and performance of retrosigmoid craniotomy.
- ◆ Interpret indications for and basic concepts and techniques in management of traumatic brain injury, degenerative spine disease, cerebrovascular disease, and skull base tumors.

This course requires a \$250 registration fee in order to guarantee you a seat in the course. Upon completion of the course, the \$250 registration fee will be refunded in its entirety. This course is for PGY3, PGY4 and PGY5 residents.

PC16 **8:00 AM – 4:00 PM** **\$550**

Brain Tumor Update

COURSE DIRECTORS: Andrew T. Parsa, Jason P. Sheehan

FACULTY: Manish Kumar Aghi, Frederick George Barker, John A. Boockvar, Jeffrey N. Bruce, Johnny B. Delashaw, Franco DeMonte, Michael Lim, Russell R. Lonser, Mark Edwin Shaffrey, Michael Edward Sughrue, Charles Teo, Philip V. Theodosopoulos, Isaac Yang

COURSE DESCRIPTION: This course will include current research topics but emphasizes practical management issues. It will provide an up-to-date overview of current management strategies for major types of glial tumors including astrocytomas, oligodendrogliomas and others. Treatment strategies for major types of benign and malignant brain tumors of non-glial origin will be also be discussed.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Formulate treatment plans based on the state of the art management of benign and malignant brain tumors including meningiomas, acoustic neuromas, skull base tumors, pediatric tumors and metastases.
- ◆ Incorporate current concepts in glioma management including surgical techniques, adjuvant treatments, tumor biology and clinical management decisions into their treatment plans.

PC17 **8:00 – 11:30 AM** **\$450**

2012 CPT Coding Update

COURSE DIRECTORS: Joseph S. Cheng, Mina Foroohar
FACULTY: Peter D. Angevine, Kim Pollock, John K. Ratliff, G. Edward Vates

COURSE DESCRIPTION: This course summarizes the anticipated CPT 2013 coding changes and also reviews the 2012 coding changes that affect neurosurgeons.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Apply new and revised CPT coding concepts to key neurosurgical and reporting services with CPT codes and modifiers in order to effectively protect surgical and evaluation/management reimbursement.
- ◆ Strategize how to avoid compliance issues with regard to new regulations.

PC18 **8:00 – 11:30 AM** **\$450**

Practical Spine Biomechanics for Clinical Practice

COURSE DIRECTORS: Edward C. Benzel, Tyler R. Koski

FACULTY: Zoher Ghogawala, Langston T. Holly, John H. Shin

COURSE DESCRIPTION: This course will present the physical principles and biomechanical foundations of spinal surgery and stabilization via a didactic and interactive case discussion format.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Integrate biomechanical principles and strategies into their surgical planning.
- ◆ Strategize to avoid and manage complications.

PC19 **8:00 – 11:30 AM** **\$450**

Deep Brain Stimulation: Indications and Emerging Applications

COURSE DIRECTOR: Robert E. Gross

FACULTY: Jaimie M. Henderson, Kathryn L. Holloway, Brian H. Kopell, Kendall H. Lee, Guy M. McKhann, II

COURSE DESCRIPTION: This course will discuss the implications of clinical trials of deep brain stimulation for Parkinson's disease, essential tremor and dystonia.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze the approved indications, the rationale for the various approved brain targets, and the outcomes from clinical trials of deep brain stimulation for Parkinson's disease, essential tremor and dystonia.
- ◆ Identify the rationale for non-approved targets being investigated for Parkinson's disease, essential tremor, and dystonia.
- ◆ Consider the possible advantages over approved targets, and analyze preliminary outcomes from clinical trials of these targets.
- ◆ Recognize possible non-approved indications for deep brain stimulation currently under investigation, including

the epilepsies, psychiatric disorders, and Tourette syndrome; the rationale for the various targets being investigated; and preliminary outcomes from clinical trials.

PC20 **8:00 – 11:30 AM** **\$450**

3-D Anatomy (Infratentorial)

COURSE DIRECTOR: Albert L. Rhoton, Jr.

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

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe the anatomy of the temporal bone; cerebellum and fourth ventricle; far lateral and transcondylar approaches; approaches to the cerebellopontine angle; and the anatomy and approaches to the jugular foramen.
- ◆ Discuss the three-dimensional neurovascular relationships of each region.

PC21 **8:00 – 11:30 AM** **\$450**

Surgical Management of Tumors in Eloquent Regions

COURSE DIRECTOR: Linda M. Liau

FACULTY: Mitchel S. Berger, Alexandra J. Golby, Frederick F. Lang, John K. Park, Joseph M. Piepmeier, Nader Pouratian

COURSE DESCRIPTION: This course will present surgical management of tumors within eloquent areas of the brain, including brain mapping, planning and avoidance of technical errors.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the indications for surgical management of tumors within eloquent areas of the brain.
- ◆ Integrate current technologies for pre-operative and intra-operative brain mapping for tumors in eloquent cortex and fiber tracts into surgical planning by recognizing how they can enhance the safety of surgery, while considering their limitations.
- ◆ Strategize how to avoid common technical errors in brain mapping techniques.

PC22 **12:30 – 4:00 PM** **\$450**

Should You Retire or Not?

COURSE DIRECTORS: Ronald I. Apfelbaum, James I. Ausman, Ivan S. Ciric, David G. Kline

FACULTY: Melvin Cheatham, Carolyn Dohn, Donald F. Dohn, Christopher Dwyer, William Hayes, Joseph C. Maroon, Sara Yoge

COURSE DESCRIPTION: The Key question is “What will you do with the rest of your life?” The answers to this question are important to young and older neurosurgeons as life expectancy now is 20-40 years longer than our parents. Life expectancy in the 21st century should reach 140 years. This course will cover the history of retirement as it affects today's society and its decisions about maturing citizens, and the many options neurosurgeons are taking as they consider what to do with the rest of their lives. A large panel of people from practice and academic neurosurgery, financial planners, lawyers with experience in estate planning and aging will be in the faculty. Subjects including should you retire or not, how can you continue to work, exercise and proper nutritional supplements of value to promote longevity, advice from many about what to do, dealing with the psychological aspects of changing life style for husband and wife, illness, loss of a spouse, elder abuse, caregiving for parents, do you have enough money for the future?, what to do with children who have problems, and many more questions will be answered. There will be generous time allotted for discussion. Audience participation will be encouraged!

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Assess whether or not you should retire.
- ◆ Examine options for what you should do with the rest of your life.
- ◆ Describe financial planning, estate planning and the challenges faced with extended lives.
- ◆ Better understand what retirement is like and if it is for you.

Register your spouse/guest to attend this session with you for only \$250. Call 877.585.6001 to register!

PC23 **12:30 – 4:00 PM** **\$500**

My Worst Spinal Complication: What I Learned

COURSE DIRECTOR: Charles Kuntz, IV

FACULTY: Robert Bohinski, Joseph S. Cheng, Michael W. Groff, Regis W. Haid, Jr., Praveen V. Mummaneni, Laurence D. Rhines, Christopher I. Shaffrey, Michael P. Steinmetz

COURSE DESCRIPTION: This course will present and review the avoidance, evaluation, pathophysiology, and treatment of surgical complications. Contemporary avoidance, evaluation, and management of surgical complications remain controversial. Despite significant medical advances, surgical complications can result in poor clinical outcomes and increased medical costs. There is a need for a better understanding of these surgical complications.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Integrate contemporary evaluation and pathophysiology recognition of spinal complications.
- ◆ Develop complication avoidance and management strategies for their current treatment plans.

PRACTICAL COURSES

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PC24 **12:30 – 4:00 PM** **\$450**

Neurocritical Care and Neurosurgical Emergencies Update

COURSE DIRECTOR: Jack Jallo

FACULTY: Pascal Jabbour, Douglas Laske, Christopher J. Madden, John K. Ratliff, Matthew Vibbert

COURSE DESCRIPTION: This course will promote rapid identification and a better understanding of the management of neurosurgical emergencies.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Design key management strategies for emergencies involving the brain, spine and peripheral nerves.
- ◆ Evaluate the current evidence for patient specific therapies.
- ◆ Apply the latest modalities in the management and understanding of neurosurgical emergencies.
- ◆ Identify controversies in management of these emergencies, considering the role of the surgeon in emergency neurosurgery.
- ◆ Understand the physiology of a variety of neurosurgical emergencies.

PC25 **12:30 – 4:00 PM** **\$450**

Neurosurgical Approaches to the Pain Patient: Patient Selection, Techniques, and Complication Avoidance

COURSE DIRECTORS: Julie G. Pilitsis, Joshua M. Rosenow

FACULTY: Ken Lofland, Andre Machado, Jeffrey W. Miller, Parag G. Patil, Erika A. Petersen

COURSE DESCRIPTION: This course will discuss pain management techniques.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Illustrate the physiology and operative techniques of recent advances in neurosurgical pain management.
- ◆ Determine patient selection for and the current role of ablative and neuromodulatory neurosurgical procedures for pain.
- ◆ Determine how to efficiently and effectively perform pain procedures in a busy neurosurgical practice.

PC26 **12:30 – 4:00 PM** **\$450**

Innovation and Intellectual Property Development: From Concept to Company

COURSE DIRECTORS: Richard G. Fessler, Elad I. Levy, Erol Veznedaroglu

FACULTY: John M. Abrahams, Kingsley Chin, L. Nelson Hopkins, III, Reginald Q. Knight, Stephen R. Ramee

COURSE DESCRIPTION: This course will review approaches to intellectual property development.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate methods to transform intellectual property into viable products.
- ◆ Determine the value of developing intellectual property to the neurosurgeon and to neurosurgery as a specialty.

PC27 **12:30 – 4:00 PM** **\$450**

Cranial Neurosurgery: Complication Avoidance and Management

COURSE DIRECTOR: William T. Couldwell

FACULTY: Mitchel S. Berger, Allan H. Friedman, Raj K. Narayan, Robert H. Rosenwasser

COURSE DESCRIPTION: This course will use case presentations, didactic lectures and interaction with faculty, to provide clinical scenarios that may result in complications.

Appropriate management will be reviewed. Will discuss strategies designed to anticipate complications so that they may be avoided.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify common complications associated with a variety of cranial procedures.
- ◆ Plan strategies to avoid and manage them.

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Available in the Apple App Store for iPad and iPhone users Android, smartphone and web-users can access online at <http://m.cns.org>



3:00 – 4:30 PM

MULTIDISCIPLINARY ORAL PRESENTATIONS I

MODERATOR: Brian Lim Hoh

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Inspect the findings of novel neurosurgical studies, critique the design and methodology of these studies.
- ◆ List important areas for further knowledge development and research.
- ◆ Identify the most important ongoing clinical trials.

3:00 – 3:03 PM

Introduction

3:03 – 3:10 PM

100**Immediate Procedural Outcomes in 35 Consecutive Pipeline Embolization Cases: A Single-Center, Single-User Experience**

Geoffrey P. Colby, Li-Mei Lin, Juan F. Gomez, Alexandra Paul, Judy Huang, Rafael J. Tamargo, Alexander Lewis Coon

3:10 – 3:17 PM

101**The Sodium Channel/Glutamate Blocker Riluzole is Complementary to Decompression in a Preclinical Experimental Model of Cervical Spondylotic Myelopathy (CSM): Implications for Translational Clinical Application**

Spyridon Karadimas, Eun Su Moon, Michael G. Fehlings

3:17 – 3:24 PM

102**The Incidence of Arachnoid Web Formation in Patients with Chiari I Malformation and Syringomyelia**

Robert Austin Miller, Yuefang Chang, Matthew Tormenti, Stephanie Greene

3:24 – 3:31 PM

103**Unilateral Transnasal Endoscopic Extradural Optic Nerve Decompression for Idiopathic Intracranial Hypertension: A Small Clinical Series of Eight Patients**

Altay Sencer, Ismet Arslan, Fahir Sencan, Banu Satana, Osman Akcakaya, Ali Guven Yorukoglu, Bora Basaran, Yavuz Aras, Aydin Aydoseli, Faruk Unal, Ali Tuncay Canbolat

3:31 – 3:38 PM

104**Multipotent Adult Progenitor Cell Therapy for Traumatic Brain Injury: Systemic Modulation of Microglia**

Supinder Singh Bedi, Peter Walker, Shinil Shah, Fernando Jimenez, Chelsea Thomas, Philippa Smith, Robert Hetz, Jason Hamilton, Robert W. Mays, Charles S. Cox, Jr.

3:38 – 3:45 PM

105**Pseudomeningocele Formation Following Chiari Decompression: Nineteen Year Retrospective Chart Review of Predisposing and Prognostic Factors**

Richard Menger, David E. Connor, Anil Nanda

3:45 – 3:52 PM

106**Variability in Outcomes After Surgery for Spinal Stenosis and Degenerative Spondylolisthesis**

Atman Desai, Kimon Bekelis, Perry Ball, Jon Lurie, Sohail Mirza, Tor D. Tosteson, James N. Weinstein

3:52 – 3:59 PM

107**Gamma Knife Radiosurgery for Patients with Unruptured Arteriovenous Malformations**

Dale Ding, Chun-Po Yen, Zhiyuan Xu, Robert M. Starke, Jason P. Sheehan

3:59 – 4:06 PM

108**Stereotactic Radiosurgery or Radiotherapy for Spinal Metastases, with or without Initial Open Surgical Decompression and Stabilization**

Berkeley Graham Bate, Brent Young Kimball, Kyle Gabrick, Jason Andrew Weaver

4:06 – 4:13 PM

109**Radiographic and Clinical Follow-up of Syringomyelia in Patients Treated for Tethered Cord Syndrome without Other Radiographic Abnormalities**

Charles Glen Kulwin, Neal Balvant Patel, Joel C. Boaz, Daniel H. Fulkerson

4:13 – 4:20 PM

110**Modulation of the Inflammatory Response: A Potential Novel Use for Vagus Nerve Stimulation**

Sudhakar Vadivelu, Megan McCarty, Sangeeta Chavan, Sara Stream, Kevin J. Tracey, Ashesh Mehta

4:20 – 4:27 PM

111**Magnetic Resonance Spectroscopic Imaging Measurement of Early Response to Vorinostat Treatment in Recurrent Glioblastoma**

Jeffrey J. Olson, Alfredo Voloschin, Li Wei, Andrew Miller, Daniel Brat, Chad Holder, Hui-Kuo Shu, Xioaping Hu, Hyunsuk Shim

4:27 – 4:30 PM

Discussion**DON'T MISS
THE ORIGINAL SCIENCE PROGRAM!**

Featuring more than seven hours of groundbreaking clinical research, the Original Science Program offers more oral presentations than ever before beginning on Sunday, October 7 at 3:30 PM!

FIND
the **Latest Advances**
and **Technology**



GET Hands-on
Demonstrations



MEET
your **Corporate**
Contacts



IN THE EXHIBIT HALL!

The 2012 CNS Annual Meeting Exhibit Hall provides you with the opportunity to meet and connect with hundreds of your exhibitor contacts in Chicago. Look for these activities during your stay and take advantage of the time to learn more about the newest products and services in the field of neurosurgery!

- ◆ Product and Technology Showcase
- ◆ In-Booth Demonstrations
- ◆ Tuesday afternoon Snack Break with Exhibitors
- ◆ Daily Beverage Breaks
- ◆ Digital Poster Center
- ◆ CNS Member Services Booth

GENERAL SCIENTIFIC SESSION I

4:30 – 6:00 PM McCormick Place Lakeside Center

PRESIDING OFFICER: Russell R. Lonser

MODERATORS: Steven N. Kalkanis, Ganesh Rao

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the latest knowledge in neuroanatomy, neuroimaging, microsurgery, and neuro-oncology into current treatment plans. Identify trends in neuroanatomy, neuroimaging, microsurgery and neuro-oncology.

4:30 – 4:33 PM

Introduction / Disclosures

Ganesh Rao

4:33 – 4:55 PM

Under the Radar: Human Glioma Dissemination through Stem Cell Corridors

Nader Sanai

4:55 – 4:57 PM

Introduction to Albert L. Rhoton, Jr.

Steven N. Kalkanis

4:57 – 5:25 PM

Navigating in the Final Frontier

Albert L. Rhoton, Jr.

5:25 – 5:28 PM

Introduction to John Thompson History of Medicine Lecture

Russell R. Lonser



5:28 – 6:00 PM

JOHN THOMPSON HISTORY OF MEDICINE LECTURE

The New Brain Tumors: What Can Your Neuroradiologist Really Tell You From Preoperative Imaging Studies?

Anne G. Osborn



6:00 – 6:30 PM

Book Signing with Anne G. Osborn

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6:00 – 8:00 PM

CNS OPENING RECEPTION

Enjoy an evening in *Sweet Home Chicago* with Jake and Elwood Blues and your friends and colleagues from the CNS! With a sumptuous variety of food, beverages and entertainment you won't soon forget, the CNS Opening Reception brings the best of the city to the McCormick Place!

Each registered attendee will receive one complimentary ticket.



OUR
FUTURE
IS NOW!

MONDAY, OCTOBER 8 ♦ PROGRAM HIGHLIGHTS

- 7:39 – 7:56 AM** ♦ **The Future of Minimally Invasive Spine Surgery**
John O’Toole
- 8:15 – 8:35 AM** ♦ **Merging Mind and Machine to Restore Movement**
John Donoghue
- 8:40 – 9:00 AM** ♦ HONORED GUEST LECTURE
Patterns of Occurrence and Surgical Solutions Across the Spectrum of Saccular and Fusiform Middle Cerebral Artery Aneurysms
Ralph G. Dacey, Jr.
- 10:30 – 10:50 AM** ♦ **Presidential Address**
Christopher E. Wolfla
- 10:55 – 11:30 AM** ♦ **The Acceleration of Technology in the 21st Century: The Impact on Medicine, Health and Society**
Raymond Kurzweil
- 11:30 AM** ♦ **Book Signing with Raymond Kurzweil**
- 2:00 – 5:00 PM** ♦ **Original Science Program**
- 3:30 – 5:00 PM** ♦ **3-D Operative Session – The Art of Microsurgery: Lessons Learned**
- 5:00 – 6:30 PM** ♦ **International Reception**

GENERAL SCIENTIFIC SESSION II

7:00 – 11:30 AM McCormick Place Lakeside Center

PRESIDING OFFICER: Ali R. Rezai

MODERATORS: Alan M. Scarrow, Ashwini D. Sharan

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate the latest innovations in stroke management, stereotactic radiosurgery, and minimally invasive spine surgery.
- ◆ Implement the surgical management of intracranial aneurysms, randomized controlled trials in severe closed head injury, and ideas for bringing innovation into their clinics and operating rooms.

7:00 – 7:05 AM

Introduction and Disclosures

Ali R. Rezai

7:05 – 7:22 AM

Stroke Intervention: Evolution of Implementation of Cutting-Edge Technologies

L. Nelson Hopkins, III

7:22 – 7:39 AM

Expanding Indications for Stereotactic Radiosurgery in the Treatment of Brain Metastases

William A. Friedman

7:39 – 7:56 AM

The Future of Minimally Invasive Spine Surgery

John O'Toole

7:56 – 8:11 AM

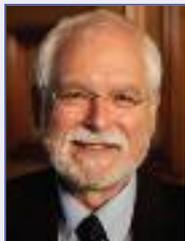
Editor's Update: *Neurosurgery*[®]

Nelson M. Oyesiku

8:11 – 8:15 AM

Introduction of Special Lecturer

Ali R. Rezai



8:15 – 8:35 AM

SPECIAL LECTURE

Merging Mind and Machine to Restore Movement

John Donoghue

8:35 – 8:40 AM

Introduction of Honored Guest

Daniel L. Barrow



8:40 – 9:00 AM

HONORED GUEST LECTURE

Patterns of Occurrence and Surgical Solutions Across the Spectrum of Saccular and Fusiform Middle Cerebral Artery Aneurysms

Ralph G. Dacey, Jr.

9:00 – 10:00 AM

Beverage Break with Exhibitors

10:00 – 10:10 AM

The Role of the Neurosurgeon in the Community, with a Specific Eye Towards Injury Prevention and ThinkFirst

Daniel B. Michael

10:10 – 10:25 AM

Does Monitoring ICP Improve Outcome from TBI? Results from an NIH Randomized Controlled Trial

Randall M. Chesnut

10:25 – 10:30 AM

Introduction of CNS President



10:30 – 10:50 AM

Presidential Address

Christopher E. Wolfla

10:50 – 10:55 AM

Introduction of Walter E. Dandy Orator

Ashwini Dayal Sharan



10:55 – 11:30 AM

WALTER E. DANDY ORATION

The Acceleration of Technology in the 21st Century: The Impact on Medicine, Health and Society

Raymond Kurzweil

11:30 AM – 12:00 PM

Break with Exhibitors



11:30 AM

Book Signing with Raymond Kurzweil

MONDAY
OCTOBER
8

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

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M01 Honored Guest Luncheon

MODERATOR: Odette Harris

FACULTY: Ralph G. Dacey, Jr.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Recognize the importance of leadership principles at various stages in a neurosurgeon's career.
- ◆ Understand the principles of developing a rewarding career as a neurosurgeon in academic or community practice.
- ◆ Explain how to develop an effective mentor/mentee relationship in the early phase of establishing their practice.

M02 Cervical and Lumbar Arthroplasty: Evolution of Techniques and Management Paradigms

MODERATOR: Regis W. Haid, Jr.

FACULTY: Peter D. Angevine, Wayne Gluf, Michael K. Rosner

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze the state-of-the-art cervical and lumbar disc arthroplasty technology.
- ◆ Determine its indications for use.

M03 Incorporating Psychosurgery into Your Neurosurgical Practice

MODERATOR: Kathryn Holloway

FACULTY: Emad N. Eskandar, Kelly D. Foote, Robert E. Gross, Brian H. Kopell

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the latest developments in the neurosurgical treatment of psychiatric disorders.
- ◆ Identify the indications for surgical treatment of these disorders and common psychiatric disorders amenable to surgical intervention into practice plans.

M04 Improving Outcomes in Patients with Vestibular Schwannomas

MODERATOR: Douglas Kondziolka

FACULTY: Johnny B. Delashaw, William A. Friedman, Stephen J. Haines, Andrew T. Parsa, Martin Sames

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Update management strategies by identifying the surgical and

radiosurgical indications for managing vestibular schwannomas.

- ◆ Recognize anatomic considerations during surgery.
- ◆ Investigate the advantages and limitations of various treatments.

M05 Innovations in the Management of Intracerebral Hemorrhage

MODERATOR: Issam A. Awad

FACULTY: E. Sander Connolly, Jr., Pavel Haninec, Alan S. Hoffer, Neil A. Martin, Mario Zuccarello

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss natural history of intracerebral hemorrhage.
- ◆ Identify traditional surgical and new minimally invasive options for management of intracerebral hemorrhage.
- ◆ Interpret indications, outcomes, and complications from these approaches.

M06 Managing Long-term Complications of Cervical and Lumbar Spine Surgery

MODERATOR: William Charles Welch

FACULTY: Robert F. Heary, Michael G. Kaiser, Praveen V. Mummaneni, Gregory R. Trost

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Consider the causes of long-term post-operative spinal surgery complications.
- ◆ Discuss various treatment strategies available for the correction of long-term spinal surgery complications.

M07 Controversies in Craniosynostosis: Endoscopic vs. Open Surgery for Craniosynostosis and Helmet Therapy

MODERATOR: David F. Jimenez

FACULTY: James T. Goodrich, John A. Jane, Sr., Todd A. Maugans

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss various forms of syndromic and non-syndromic cranial synostosis.
- ◆ Integrate various techniques available for repair of craniosynostosis into their management strategies.

M08 Guidelines for the Management of Severe Traumatic Brain Injury in Pediatric Patients

MODERATOR: Anne-Christine Duhaime

FACULTY: Gerald A. Grant, Ann Marie Ritter, Nathan R. Selden, Ashutosh Singhal

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the latest advancements in pediatric neurotrauma research.
- ◆ Describe emerging technologies being developed for managing pediatric brain injury.
- ◆ Integrate latest surgical techniques available for treating pediatric brain injury into their management strategies.

M09 Peripheral Nerve Board Review

MODERATOR: Lynda Jun-San Yang

FACULTY: Allan J. Belzberg, Allen H. Maniker, Rajiv Midha, Robert J. Spinner

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Address the important peripheral nerve injuries frequently presented on board examinations.
- ◆ Demonstrate comprehension of the peripheral nerve physical examination.
- ◆ Explain how to manage peripheral nerve injury/disease surgically and non-surgically.

M10 Strategies To Reduce Risk in Surgical Management of Tumors in Eloquent Regions

MODERATOR: Frederick F. Lang

FACULTY: Mitchel S. Berger, Linda M. Liau, Miroslav Galanda, Guy H. McKhann, II, Michael Schuller

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the unique anatomic and functional considerations required for surgical resection of tumors in eloquent cortex.
- ◆ Describe the utility of adjunctive tools in preparing for surgery in eloquent cortex.
- ◆ Determine the indications for surgery for tumors in eloquent cortex.

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

M11 Hemorrhagic and Ischemic Stroke Update for Allied Health Professionals

MODERATOR: Erol Veznedaroglu

FACULTY: Ricardo A. Hanel, Brian Lim Hoh, Christopher S. Ogilvy, Adnan Hussain Siddiqui

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify surgical and interventional advances in the management of acute hemorrhagic and ischemic stroke.
- ◆ Update treatment plans with current treatment paradigms for acute hemorrhagic and ischemic stroke in patients.

Nursing contact hours may be provided through AANN. The American Association of Neuroscience Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. Physician assistants will receive credit for attendance. Each physician assistant will need to contact his or her individual membership association and certification board to determine the requirements for accepting credits. All attendees will receive a confirmation of attendance.

M12 Guidelines for Diagnosis and Treatment of Degenerative Lumbar Spinal Stenosis

MODERATOR: Charles L. Branch, Jr.

FACULTY: Joseph S. Cheng, Sanjay S. Dhall, Michael W. Groff, Eric J. Woodard

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Assess the current literature on surgical treatment of degenerative lumbar spine disease.
- ◆ Analyze the indications and expected outcomes for various lumbar spine surgical procedures to improve their treatment plans.

M13 Surgical Management of Meningiomas

MODERATOR: Philip H. Gutin

FACULTY: Ossama Al-Mefty, Franco DeMonte, Joung H. Lee, L. Dade Lunsford

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Understand the surgical decision-making, approaches to, and complications of meningiomas of the anterior cranial base, visual pathways and the posterior fossa.
- ◆ Describe the place of radiation therapy and radiosurgery in the treatment of meningiomas.

M14 Normal Pressure Hydrocephalus: Diagnosis, Management and Outcomes

MODERATOR: Daniele Rigamonti

FACULTY: Allan M. Burke, Petra Klinge, Mark G. Luciano, Harold L. Rekate

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Diagnose normal pressure hydrocephalus and pseudotumor cerebri.
- ◆ Manage the treatment of patients with hydrocephalus and pseudotumor cerebri.

M15 Transitioning to Hospital Based Practice: How To Negotiate a Fair Deal

MODERATOR: Alex B. Valadka

FACULTY: James I. Ausman, Deborah L. Benzil, Gary M. Bloomgarden, Edie E. Zusman

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the advantages and drawbacks of a hospital-based practice.
- ◆ Implement the negotiation process for hospital-based employment.
- ◆ List key elements of a fair negotiated contract.

M16 Multidisciplinary Management of Subarachnoid Hemorrhage and Vasospasm

MODERATOR: Robert H. Rosenwasser

FACULTY: Aaron S. Dumont, Murat Gunel, Michael T. Lawton, Charles J. Prestigiacomo

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Compare the current surgical, interventional and medical management of subarachnoid hemorrhage and vasospasm secondary to ruptured intracranial aneurysms and vascular malformations.

M17 Management of Complex and Refractory Chiari and Syringomyelia

MODERATOR: Richard G. Ellenbogen

FACULTY: Douglas L. Brockmeyer, John D. Heiss, Cormac O. Maher, Arnold H. Menezes

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Consider various medical and surgical treatment options in the management of Chiari I malformations, their controversies and the differences in management of pediatric versus adult Chiari I malformations.
- ◆ Incorporate new research relevant to the treatment of Chiari I malformations and syringomyelia into treatment plans.

M18 Evidence-Based Management of Brain Metastases

MODERATOR: Raymond Sawaya

FACULTY: David W. Andrews, Randy L. Jensen, Steven N. Kalkanis, Steven A. Toms

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze the current status of research pertaining to the treatment of brain metastases.
- ◆ Incorporate surgical and radiosurgical treatment options appropriate for treating intracranial metastases, their complications and results into current management strategies.

1:30 - 2:00 PM
Break with Exhibitors

2:00 - 3:30 PM

SPECIAL COURSE I

Robotics: The Future of Neurosurgery?

COURSE DIRECTOR: Michael P. Steinmetz

FACULTY: Akio Morita, Thomas Mroz, Cameron N. Riviere, Michael Wolf

COURSE DESCRIPTION: The stated goal of this course is to explore current advanced opportunities for robotics. Current common implementations of robotics WILL NOT be stressed in this course. Participants in this course will have the opportunity to learn about the potential applications and cross fertilization that can occur as the fields of advanced robotics and neurosurgery intersect.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the current state of the art regarding robotics and its implications in neurosurgery.
- ◆ Describe how robotics may be able to change the way we perform surgery.

2:00 - 2:05 PM

Introduction

Michael P. Steinmetz

2:05 - 2:25 PM

Robotics: The Future is Now

Cameron N. Riviere

2:25 - 2:45 PM

Development of a Robotic System Enabling Super-Microsurgery

Akio Morita

2:45 - 3:05 PM

Robotics in Spine Surgery: Not Just for Navigation

Thomas Mroz

3:05 - 3:25 PM

Robots in Your Brain, and Vice Versa

Michael Wolf

3:25 - 3:30 PM

Discussion

2:00 - 3:30 PM

CONSENSUS SESSION I

Treatment of Cervical Stenosis and Radiculopathy: Building Consensus From Controversy

MODERATOR: John A. Jane, Sr.

FACULTY: Anthony J. Caputy, Richard G. Fessler, Robert F. Heary, Beverly C. Walters

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Determine the diagnosis and treatment options for patients with a cervical radiculopathy.
- ◆ Describe the advantages and disadvantages of various surgical approaches.
- ◆ Review complications from each approach and management of various surgical approaches.
- ◆ Analyze the literature on the evidence based medicine approach and know what the literature supports.

2:00 - 2:20 PM

Anterior Approach

Anthony J. Caputy

2:20 - 2:40 PM

Posterior Approach without Fusion

Richard G. Fessler

2:40 - 3:00 PM

Posterior Approach with Fusion

Robert F. Heary

3:00 - 3:20 PM

Levels of Evidence for Each Approach

Beverly C. Walters

3:20 - 3:30 PM

Audience Polling and Discussion

Earn additional CME after the course by participating in a supplemental SANS exam!



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Available in the Apple App Store for iPad and iPhone users Android, smartphone and web-users can access online at <http://m.cns.org>

2:00 - 3:30 PM

ORAL PRESENTATIONS

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze the findings of novel neurosurgical studies, critique the design and methodology of these studies.
- ◆ List important areas for further knowledge development and research.
- ◆ Identify the most important ongoing clinical trials.

2:00 - 3:30 PM

COUNCIL OF STATE NEUROSURGICAL SOCIETIES

MODERATORS: J. Adair Prall, Gregory R. Trost

2:00 - 2:09 PM

SAM HASSENBUSCH YOUNG NEUROSURGEON AWARD 113**An Observational Study of Hospital Paging Practices and Workflow Interruption Among On-call Junior Neurosurgery Residents**

Kyle Michael Fargen, Tim O'Connor, Steven Raymond, Justin M. Sporrer, William A. Friedman

2:09 - 2:18 PM

114 The Relative Impact of Lumbar Spondylosis on Quality of Life in the United States: A Population Health Perspective

Scott L. Parker, Cyrus Chi-Ho Wong, Marcus J. Gates, Saniya S. Godil, Matthew McGirt

2:18 - 2:27 PM

JULIUS GOODMAN RESIDENT AWARD 115**Differences in Defensive Practices between Neurosurgeons in Malpractice Crisis versus Non-Crisis States**

Maya A. Babu, Brian V. Nahed, Timothy R. Smith, Robert F. Heary

2:27 - 2:36 PM

116 Improved Resource Utilization is Associated with High Volume Surgical Centers, Low Complication Rates, and Shorter Length of Stay in Patients Undergoing Transsphenoidal Surgery for Cushing's Disease

Andrew S. Little, Kristina Chapple

2:36 - 2:45 PM

117 Digital Subtraction Angiography in CT Angiography Negative Spontaneous Subarachnoid Hemorrhage: A Cost-Effectiveness Analysis

Pinakin Rameshchandra Jethwa, Vineet Punia, Tapan Patel, Chirag D. Gandhi, Charles J. Prestigiacomo

2:45 - 2:54 PM

118 Feasibility and Utilization of Tele-radiology in Neurosurgery

Martina Stippler, Howard Yonas, Anne Karlovitz

2:54 - 3:03 PM

119 Identification of Knowledge Gaps in Neurosurgery Through Analysis of Responses to the Self Assessment in Neurological Surgery (SANS)

Jason P. Sheehan, Robert M. Starke, Nader Pouratian, Zachary N. Litvack, Ashok Rajappa Asthagiri

3:03 - 3:12 PM

120 Defining the Relative Utility of Lumbar Spine Surgery: A Systematic Literature Review of Common Surgical Procedures and their Impact on Health States

Scott L. Parker, Saniya S. Godil, Marcus J. Gates, Matthew McGirt

3:12 - 3:21 PM

121 Characteristics of Neurosurgery's Most Successful Research Programs

Edie E. Zusman, Riti Mahadevia, Michael Fost, Robert M. Friedlander, Gregory J. Zipfel, David V. Laborde

3:21 - 3:30 PM

122 Residents as Teachers - Integration of a Formal Certificate in Education Program into Residency Training

Zachary N. Litvack, Larrie Greenberg, Benjamin Blatt, Nancy Gaba, Anthony J. Caputy

2:00 - 3:30 PM

SECTION ON CEREBROVASCULAR SURGERY

MODERATORS: Nichola C. Bambakidis, J D. Mocco

2:00 - 2:09 PM

123 Safety and Efficacy of Intra-Operative Angiography in Craniotomies for Cerebral Aneurysms and Arteriovenous Malformations: A Review of 1,089 Cases

Nohra Chalouhi, Thana Theofanis, Pascal Jabbour, Aaron S. Dumont, L. Fernando Gonzalez, Robert M. Starke, Robert H. Rosenwasser, Stavropoula I. Tjoumakaris

2:09 - 2:18 PM

124 In-Hospital Morbidity and Mortality After Treatment of Arteriovenous Malformations in the United States, 2000-2009: the Impact of Hospital and Surgeon Volume

Jason Davies, Vijay Yanamadala, William L. Young, Michael T. Lawton

2:18 - 2:27 PM

125 Final Results of the ELANA FDA-IDE Study on High Flow Cerebral Bypasses for Surgical Treatment of Anterior Circulation Aneurysms

David J. Langer, Peter Vajkoczy, Shamik Chakraborty, Michael Tymianski, Sepideh Amin-Hanjani, Fady T. Charbel, Babu Guai Welch, Duke S. Samson, Leena Kivipelto, Jacques J. Morcos, Ricardo A. Hanel, Michael Reinert, Ali F. Krisht, Luca Regli, Martin Lehecka, Ulf Schneider, Marcus Czabanka, Lars Kihlstrom, Tristan Van Doornaal, Cornelius Tulleken, Bart Van der Zwan

2:27 - 2:36 PM

126**Histopathological Assessment of Delayed Ipsilateral Parenchymal Hemorrhages After the Treatment of Paraclinoid Aneurysms with the Pipeline Embolization Device**

Vivek Deshmukh, Yin C. Hu, Cameron G. McDougall, Stanley L. Barnwell, Felipe Albuquerque, David Fiorella

2:36 - 2:45 PM

127**Intra-arterial Chemotherapy for Retinoblastoma: Pearls and Pitfalls.**

Nohra Chalouhi, Stavropoula I. Tjoumakaris, L. Fernando Gonzalez, Aaron S. Dumont, Rohan Chitale, Robert H. Rosenwasser, Carlos Biancotto, Carol Shields, Pascal Jabbour

2:45 - 2:54 PM

GALBRAITH AWARD

128**Subarachnoid Hemorrhage Patients: To Transfer or not to Transfer?**

Miriam Nuno, Chirag G. Patil, Patrick Lyden, Doniel Drazin

2:54 - 3:03 PM

SYNTHES CEREBROVASCULAR AWARD

129**Ruptured Basilar Apex Aneurysms: Current Outcomes at a Tertiary High Volume Center**

Ryan Morton, Louis J. Kim, Basavaraj Ghodke, Farzana Tariq, Laligam N. Sekhar

3:03 - 3:12 PM

130**Evidence for an Ischemic Preconditioning Effect on Cerebral Vasospasm in Patients with Aneurysmal Subarachnoid Hemorrhage**

Young Woo Kim, Christopher S. Ogilvy, Katie Pricola, John F. Reavey-Cantwell, Craig R. Kelman, Gregory J. Zipfel, Chad Washington, Felipe Albuquerque, M. Yashar S. Kalani, Brian Lim Hoh

3:12 - 3:21 PM

131**Threshold for Packing Density in Stent-Assisted Coiling of Intracranial Aneurysms**

Nohra Chalouhi, Aaron S. Dumont, Stavropoula I. Tjoumakaris, Fernando Gonzalez, Robert M. Starke, Richard Dalyai, Sedeek El Moursi, Robert H. Rosenwasser, David M. Hasan, Pascal Jabbour

3:21 - 3:30 PM

132**Urgent EC-IC Bypass for Symptomatic Atherosclerotic Ischemic Stroke**

Tetsuyoshi Horiuchi, Kazuhiro Hongo, Junpei Nitta

2:00 - 3:30 PM

SECTION ON STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

MODERATORS: Ali R. Rezaei, Konstantin V. Slavin

2:00 - 2:08 PM

173**Long Term Follow-up After Multiple Hippocampal Transection (MHT)**

Arun-Angelo Patil, Richard V. Andrews

2:08 - 2:16 PM

174**Convection-Enhanced Delivery of Muscimol to the Epileptic Focus: Preclinical and Clinical Research**

John D. Heiss, Stuart Walbridge, Rene' Smith, Susumu Sato, Edward H. Oldfield, Russell R. Lonser

2:16 - 2:24 PM

175**Language Reorganization in Temporal Lobe Epilepsy: A Cortico-cortical Evoked Potential Study**

Rei Enatsu, Yuichi Kubota, Yosuke Kakisaka, Juan Bulacio, Zhe Piao, Timothy O'Connor, Karl Horning, John Mosher, Richard Burgess, William E. Bingaman, Dileep Nair

2:24 - 2:32 PM

176**Functional Mapping Using Infra-slow Gamma Band Fluctuations in Spontaneous Electrographic Activity**

Andrew Lin Ko, Jeffrey G. Ojemann

2:32 - 2:40 PM

177**Pre-clinical Validation of Superparamagnetic Iron Oxide Nanoparticle-Labeled Neural Stem Cells for In Vivo Tracking and Post-Mortem Identification in the Spinal Cord**

Jason J. Lamanna, Eleanor M. Donnelly, John N. Oshinski, Nicholas M. Boulis, Thais Federici

2:40 - 2:48 PM

178**Utility of 7T Imaging for Deep Brain Stimulation Surgery**

Aviva Abosch, Noam Harel, Guillermo Sapiro, Yuval Duchin, Essa Yacoub

2:48 - 2:56 PM

179**Periaqueductal Gray Matter Stimulation Inhibits the Sensory Thalamus in Modulation of Pain Perception**

Dali Wu, Alexander L. Green, Shouyan Wang, John F. Stein, Tipu Z. Aziz

2:56 - 3:04 PM

180**SEEG After Subdural Grid Placement for Difficult to Localize Epilepsy**

Sumeet Vadera, Jeffrey Paul Mullin, William E. Bingaman, Jorge Alvaro Gonzalez-Martinez

3:04 - 3:12 PM

181**In-Vivo Segmentation of the Human Nucleus Accumbens Using Diffusion Tensor Imaging and Probabilistic Tractography**

Ausaf A. Bari, Zhong Zheng, Antonio DeSalles, Nader Pouratian

3:12 - 3:20 PM

182**Deep Brain Stimulation (DBS) Surgery for Treatment-resistant Hypertension: A Promising Solution to a Silent Killer**

Shazia Javed, Fiona McBryde, Sadaquate Khan, Julian Paton, Nikunj K. Patel

3:20 – 3:28 PM

183
The Risk of Vertebral Compression Fracture (VCF) Post-spine Stereotactic Body Radiotherapy (SBRT) and Evaluation of the Spinal Instability Neoplastic Score (SINS)

Marcelo Cunha, Ameen Al-Omair, Eshetu Atenafu, Daniel Letourneau, Renee Korol, Eugene Yu, Laura Masucci, Leodante B. Da Costa, Michael G. Fehlings, Arjun Sahgal

2:00 – 3:30 PM

SECTION ON TUMORS

MODERATORS: Frederick F. Lang, Dimitris G. Placantonakis, Viviane S. Tabar

2:00 – 2:09 PM

INTEGRA FOUNDATION AWARD
184

Cranial Nerve Function Before and After Stereotactic Radiosurgery for Cavernous Sinus Meningiomas: A Twenty-three Year Assessment

Hideyuki Kano, Kyung-Jae Park, Aditya K. Iyer, Ajay Niranjana, John Flickinger, Douglas Kondziolka, L. Dade Lunsford

2:09 – 2:18 PM

NATIONAL BRAIN TUMOR SOCIETY MAHALEY CLINICAL RESEARCH AWARD
185

Peptide Vaccine Therapy for Childhood Gliomas: Interim Results of a Pilot Study

Ian F. Pollack, Regina Jakacki, Lisa H. Butterfield, Hideho Okada

2:18 – 2:27 PM

STRYKER NEURO-ONCOLOGY AWARD
186

Quantitative Volumetric Response After Gamma Knife Radiosurgery For Meningiomas

Gillian Harrison, Hideyuki Kano, L. Dade Lunsford, John Flickinger, Douglas Kondziolka

2:27 – 2:36 PM

SYNTHE SKULL BASE SURGERY AWARD
187

Stereotactic Radiotherapy (SRT) is Associated with Improved Rates of Hearing Preservation for Patients with Vestibular Schwannoma

Isaac Yang, Marko Spasic, Patrick Pezeshkian, Brendan Manuel Fong, Winward Choy, Alessandra A. Gorgulho, Michael T. Selch, Antonio DeSalles

2:36 – 2:45 PM

JOURNAL OF NEURO-ONCOLOGY AWARD
188

Radiogenomic Mapping of MRI-FLAIR-Phenotypes Identifies a Novel Gene-microRNA Regulatory Axis to Target Glioblastoma Invasion

Pascal O. Zinn, Pratheesh Sathyan, Bethany Veo, Frederick F. Lang, Raymond Sawaya, Rivka R. Colen, Sadhan Majumder

2:45 – 2:54 PM

AMERICAN BRAIN TUMOR ASSOCIATION YOUNG INVESTIGATOR AWARD
189

Establishing a Link Between Genomic Patterns of Radiation-Induced DNA Damage Repair in Human Astrocytes and Somatic Mutations in Gliomas

Raymund L.M. Yong, Chunzhang Yang, Russell R. Lonser, Zhengping Zhuang

2:54 – 3:03 PM

190
Glioblastoma Derived Exosomes Induce Apoptosis in Cytotoxic T cells Through a Fas Ligand Mediated Mechanism

Keith Z. Sabin, Richard A. Rovin, Johnathan E. Lawrence, Robert J. Belton, Jr., Robert J. Winn

3:03 – 3:12 PM

191
Subcortical Mapping: Correlation Between Stimulation Intensity and Distance to the Corticospinal Tract

Ehab Shiban, Sandro M. Krieg, Niels Buchmann, Bernhard Meyer, Florian Ringel

3:12 – 3:21 PM

192
Epidermal Growth Factor Receptor Antibody-Conjugated Iron-Oxide Nanoparticles: Therapeutic Targeting and Radiosensitivity Enhancement of Glioblastoma

Alexandros Bouras, Milota Kaluzova, Costas George Hadjipanayis

3:21 – 3:30 PM

PREUSS AWARD
193

Development of Pediatric Glioma Models for BRAF-targeted Therapy

Shih-Shan Lang, Angela J. Sievert, Katie L. Boucher, Peter J. Madsen, Erin Slaunwhite, Danielle Brewington, Phillip B. Storm, Adam C. Resnick

3:30 – 5:00 PM

CNS NEUROSURGICAL FORUM

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the findings of novel neurosurgical studies.
- ◆ Critique the design and methodology of these studies.
- ◆ List important areas for further knowledge development and research.
- ◆ Identify the most important ongoing clinical trials.

3:30 – 5:00 PM

COUNCIL OF STATE NEUROSURGICAL SOCIETIES

MODERATORS: J. Adair Prall, Gregory R. Trost

3:30 – 5:00 PM

SECTION ON CEREBROVASCULAR SURGERY

MODERATORS: Rose Du, J D. Mocco, Amir R. Dehdashti

3:30 – 5:00 PM

SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES

MODERATORS: Zoher Ghogawala, Justin S. Smith

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3:30 - 5:00 PM

SECTION ON NEUROTRAUMA AND CRITICAL CARE

MODERATORS: Jack Jallo, Christopher Madden, Joseph Christopher Zacko

3:30 - 5:00 PM

SECTION ON PAIN

MODERATORS: Andre Machado, Christopher J. Winfree

3:30 - 5:00 PM

SECTION ON PEDIATRIC NEUROLOGICAL SURGERY

MODERATORS: Paul Klimo, Jr., Cormac O. Maher

3:30 - 5:00 PM

SECTION ON STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

MODERATORS: Aviva Abosch, Emad N. Eskandar, Michael Gordon Kaplitt, Peter Konrad

3:30 - 5:00 PM

SECTION ON TUMORS

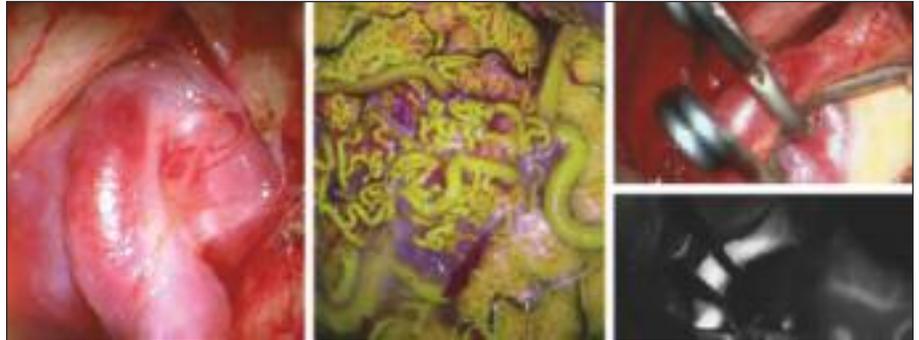
MODERATORS: Frederick George Barker, Frederick F. Lang, Viviane S. Tabar



3:30 - 5:00 PM

3-D OPERATIVE SESSION

The Art of Microsurgery: Lessons Learned



MODERATOR: Aaron A. Cohen-Gadol, Aaron S. Dumont

FACULTY: William T. Couldwell, Robert F. Spetzler

COURSE DESCRIPTION: This course will review the important technical nuances for the successful management of complex cranial cases. Information will be delivered through 3D high definition surgical videos and step-by-step discussion by experienced experts in the field. Topics to be reviewed include surgery for vascular and neoplastic lesions.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the management of complex cranial cases.
- ◆ Incorporate new techniques into their surgical practice.

JOIN your colleagues from across the globe for the **International Reception**. Taking place on Monday, October 8 at the Sheraton Hotel from 5:00 - 6:30 PM, enjoy cocktails, hors d'oeuvres and camaraderie with your CNS colleagues.

All international attendees are invited to attend.

6:30 - 8:30 PM

DINNER SEMINAR 2

Harnessing Social Media and the Web to Enhance Your Practice

MODERATOR: Chaim B. Colen

FACULTY: J. Brad Bellotte, Jonathan E. Hodes, Ann R. Stroink

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Employ methods to obtain a higher search ranking for your neurosurgery practice.
- ◆ Discuss, in small groups, how your online ranking could increase patient referrals.
- ◆ Identify an effective formula to improve your online ranking using back-linking, social media and other simple strategies.

6:30 - 6:40 PM

Introduction: eMedicine The Big Picture

Chaim B. Colen

6:40 - 7:10 PM

Using Online Patient Outcomes Data to Your Advantage

Ann R. Stroink

7:10 - 7:45 PM

The ABCs for Online Marketing of Your Neurosurgery Practice

J. Brad Bellotte

7:45 - 8:15 PM

The Pearls and Pitfalls of Social Media: Gaining a Clean Presence

Chaim B. Colen

8:15 - 8:30 PM

Panel Discussion - Questions

Sepia

This contemporary American eatery in the West Loop, offers a product-driven menu that showcases the quality and the purity of the ingredients, letting both the ingredients and Chef Andrew Zimmerman's passion for what he does shine through.

Dinner Seminar includes a three-course plated dinner and wine service. Transportation will be provided.

Listed as "one of the best restaurants" in *Food & Wine Magazine*.



6:30 - 8:30 PM

DINNER SEMINAR 3

Extra. Incidental Finding – What Next?

MODERATOR: Edward R. Smith

FACULTY: Sepideh Amin-Hanjani, Frederick George Barker, Paul Klimo, Jr., Cormac O. Maher, Charles J. Prestigiacomo

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate recent, relevant literature summarizing the current state of knowledge on incidentally found neurosurgical lesions in the central nervous system.
- ◆ Indicate the need for surgical intervention for specific incidental findings including selected congenital lesions, brain tumors, vascular, and spinal lesions.
- ◆ Formulate a plan for non-surgical management of incidentally found lesions of the CNS that do not require urgent surgery.

6:30 - 6:40 PM

Introduction

Edward R. Smith

6:40 - 6:55 PM

Tumor

Frederick George Barker

6:55 - 7:10 PM

Spine

Paul Klimo, Jr.

7:10 - 7:25 PM

Intracranial Vascular

Sepideh Amin-Hanjani

7:25 - 7:40 PM

Carotid Disease

Charles J. Prestigiacomo

7:40 - 7:55 PM

Congenital Cranial

Cormac O. Maher

7:55 - 8:00 PM

Panel Discussion with Case Examples

N9NE Steakhouse

N9NE Steakhouse, a sizzling contemporary steakhouse, offers a compelling menu of Chicago-style prime-aged steaks for the true steak lover, alongside the finest of seafood mixed with a diverse array of menu offerings.

Dinner Seminar includes a three-course plated dinner and wine service. Transportation will be provided.

Conde Nast Traveler praised that N9NE is "One of the hottest and best places to eat in the entire world."

2012 and 2011 Michelin Recommended



OUR
FUTURE
IS NOW!

TUESDAY, OCTOBER 9 ♦ PROGRAM HIGHLIGHTS

- | | |
|------------------|------------------------------------------------------------------------------------------------------------------------------|
| 7:35 – 7:55 AM | ♦ HONORED GUEST LECTURE
External Challenges to Neurosurgical Professionalism in 2012
<i>Ralph G. Dacey, Jr.</i> |
| 8:14 – 8:31 AM | ♦ Technology Growth and Cost Growth in Healthcare
<i>Jonathan Skinner, PhD</i> |
| 10:00 – 10:40 AM | ♦ Live Aneurysm Reconstruction with Flow Diversion
<i>Elad I. Levy and the University at Buffalo Neurosurgery</i> |
| 11:05 – 11:30 AM | ♦ Special Lecture: Talent is Overrated
<i>Geoff Colvin</i> |
| 11:30 AM | ♦ Book Signing with Geoff Colvin |
| 2:00 – 3:30 PM | ♦ Original Science Program |
| 3:30 – 4:30 PM | ♦ Annual Business Meeting |
| 3:30 – 5:00 PM | ♦ Operative Neurosurgery: Management of Desperate Intraoperative Moments
♦ Snack Break with the Exhibitors |
| 5:00 – 6:00 PM | ♦ CNS Resident SANS Challenge Championship Round |
| 6:00 – 7:00 PM | ♦ CNS Resident Recruitment Social |

GENERAL SCIENTIFIC SESSION III

7:00 – 11:30 AM

McCormick Place Lakeside Center

PRESIDING OFFICER: Nathan R. Selden

MODERATORS: Richard W. Byrne, Ashok Asthagiri

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate results of a randomized controlled trial for intrauterine myelomeningocele closures and how the results may affect their practice.
- ◆ Apply the latest techniques in brain mapping, genetic classification of medulloblastomas, aneurysm coiling.
- ◆ Describe how changes in health care economics will affect the practice of neurosurgery.

7:00 – 7:03 AM

Introduction, Disclosures and Introduction of Leslie Sutton

Nathan R. Selden

7:03 – 7:18 AM

The Fetal Myelomeningocele Story: From the Animal Lab to the MOMS Trial and Beyond

Leslie N. Sutton

7:18 – 7:20 AM

Introduction of Japanese CNS President

Christopher E. Wolfla

7:20 – 7:35 AM

Japanese CNS Presidential Lecture – Simulation of CVD Surgery with 3D Fusion Images

Nobuhito Saito



7:35 – 7:55 AM

HONORED GUEST LECTURE

External Challenges to Neurosurgical Professionalism in 2012

Ralph G. Dacey, Jr.

7:55 – 8:12 AM

The Future of the Utilization of Spine Surgery

Joseph S. Cheng

8:12 – 8:14 AM

Introduction to Special Lecturer

Alan M. Scarrow



8:14 – 8:31 AM

SPECIAL LECTURE

Technology Growth and Cost Growth in Healthcare

Jonathan Skinner

8:31 – 8:33 AM

Introduction of CENS President

Anil Nanda

8:33 – 8:48 AM

CENS President Lecture

Eduard Zverina

President of the Central European Neurosurgical Society



8:48 – 8:50 AM

Neurosurgical Forum Winners

Alan M. Scarrow

8:50 – 8:55 AM

Distinguished Service Award Winner

Gerald E. Rodts, Jr.

8:55 – 9:00 AM

Presentation of CNS Founders' Laurel

Gerald E. Rodts, Jr.

9:00 – 10:00 AM

Beverage Break with Exhibitors

10:00 – 10:40 AM

Live Surgery via Telemedicine Technology: Live Aneurysm Reconstruction with Flow Diversion

Elad I. Levy and University at Buffalo Neurosurgery

10:40 – 11:00 AM

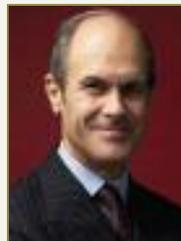
One of These Things is Not Like the Others: Inter and Intratumoral Heterogeneity as Barriers to Effective Therapy in Medulloblastoma

Michael D. Taylor

11:00 – 11:05 AM

Introduction of Special Lecturer

Russell R. Lonser



11:05 – 11:30 AM

SPECIAL LECTURE

Talent is Overrated

Geoff Colvin

11:30 AM – 12:00 PM

Break with Exhibitors



11:30 AM

Book Signing with Geoff Colvin

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9

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

T19 Guidelines for the Surgical Management of Cervical Degenerative Disease

MODERATOR: Joseph S. Cheng

FACULTY: Michael W. Groff, Michael G. Kaiser, Frank LaMarca, Daniel K. Resnick

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Assess the current literature on surgical treatment of degenerative lumbar spine disease.
- ◆ Analyze the indications and expected outcomes for various lumbar spine surgical procedures to improve their treatment plans.

T20 Skull Base Endoscopy: Utility and Limitations

MODERATORS: Paul N. Gardner, Charles Teo

FACULTY: Roman Bosnjak, Juan Carlos Fernandez-Miranda, Fred Gentili, John A. Jane, Jr., Radim Lipina, Theodore H. Schwartz

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Plan various approaches for intraventricular and skull base surgery.
- ◆ Identify current indications and risks of endoscopy for intraventricular and skull base surgery.

T21 Multimodal Management of Intracranial Arteriovenous Malformations

MODERATOR: Bernard R. Bendok

FACULTY: Douglas Kondziolka, Jacques J. Morcos, Howard A. Riina, Robert F. Spetzler

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Account for the natural history of arteriovenous malformations of the brain.
- ◆ Assess the relative merits and limitations of radiosurgery, microsurgery and embolization for treatment of this disease when planning treatment strategies.

T22 The Role of Surgical Ablation, Radiosurgery, and Neuromodulation in the Treatment of Epilepsy

MODERATOR: Nicholas M. Barbaro

FACULTY: Warren W. Boling, Mojgan Hodaie, Jean M. Regis, Daniel Yoshor

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the clinical features of seizure disorders.
- ◆ Incorporate various techniques in the preoperative, intraoperative and postoperative management of patients with epilepsy into their treatment plans.

T23 The Aging Spine: Considerations in Surgical Management

MODERATOR: Christopher P. Ames

FACULTY: Dean Chou, Verdat Deviren, Daniel Robert Fassett

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Assess the characteristics of spinal disorders unique to elderly patients.
- ◆ Identify surgical considerations for treating spinal disorders in the aging population.

T24 Guidelines for the Management of Acute Cervical Spine and Spinal Cord Injuries

MODERATOR: Michael G. Fehlings

FACULTY: Daryl R. Fourney, James S. Harrop, Jack Jallo, Curtis Rozzelle

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify advances in the medical treatment of traumatic spinal cord injury.
- ◆ Determine state-of-the-art surgical management of cervical spine trauma and spinal cord injury.
- ◆ Write protocols for identifying and assessing cervical spine injury in the comatose patient.

T25 Pituitary Adenomas: Operative Nuances and Management Considerations

MODERATOR: Edward H. Oldfield

FACULTY: William T. Couldwell, Sandeep Kunwar, Edward R. Laws, Russell R. Lonser

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Explain the roles of medical, radiation and surgical treatment for secretory and non-secretory pituitary adenomas.
- ◆ Describe the medical, imaging and laboratory evaluation for various pituitary adenomas.
- ◆ Identify the surgical nuances of pituitary adenoma resection.

T26 Advances in the Management of Trigeminal Neuralgia and Facial Pain

MODERATOR: Kim J. Burchiel

FACULTY: Kendall H. Lee, Robert M. Levy, Konstantin V. Slavin

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate surgical, percutaneous, radiosurgical and neuromodulation options for trigeminal neuralgia and facial pain syndromes into practice.
- ◆ Recognize the complications and outcomes with these approaches.

T27 Multidisciplinary Management Strategies for Unruptured Aneurysms

MODERATOR: Robert A. Solomon

FACULTY: C. Michael Cawley, Ralph G. Dacey, Jr., Aaron S. Dumont, Robert M. Friedlander

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the epidemiology and natural history of unruptured intracranial aneurysms.
- ◆ Construct appropriate treatment algorithms for these lesions.

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

T28 Anterior and Posterior Fusion Strategies in Pediatric Spine

MODERATOR: Dachling Pang

FACULTY: Richard C.E. Anderson, Douglas L. Brockmeyer, Paul Klimo, Jr., Arnold H. Menezes

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the biomechanics of the juvenile spine.
- ◆ Determine the indications for fusion.
- ◆ Review the latest techniques in surgical fusion and post-operative immobilization, especially pertaining to instrumentation in the young.

T29 Managing Difficult Surgical Scenarios in Spinal Surgery

MODERATOR: Edward C. Benzel

FACULTY: J. Patrick Johnson, Michele Marie Johnson, Michael P. Steinmetz, Gregory R. Trost

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify operative events dictating the need for intraoperative salvage techniques in spinal surgery.
- ◆ Plan for the specific techniques necessary to rectify intraoperative difficulties.

T30 Implementing an Electronic Medical Record (EMR) and Information Technology (IT) in Your Neurosurgical Practice

MODERATOR: Brian T. Ragel

FACULTY: Chaim B. Colen, Zoher Ghogawala, John K. Ratliff, Edie Zusman

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify advantages to using an Electronic Medical Record (EMR).
- ◆ List patient care functions that can be performed by EMR system software.
- ◆ Understand the importance of maintaining EMR security.

T31 The Case for Open versus Endovascular Management of Cerebral Aneurysms

MODERATOR: Christopher S. Ogilvy

FACULTY: Sepideh Amin-Hanjani, Cameron G. McDougall, Martin Smrcka, John Allen Wilson

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss emerging technologies and innovations in open vascular neurosurgery.
- ◆ List emerging technologies and innovations in endovascular neurosurgery.
- ◆ Strategize how to apply these technologies to managing patients with neurovascular diseases.

T32 Guidelines for Neurocritical Care Management for Patients with Severe Traumatic Brain Injury

MODERATOR: Shelly D. Timmons

FACULTY: Rocco Armonda, Odette Harris, Raj K. Narayan, Alex B. Valadka

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Review their strategies for managing traumatic brain injury.
- ◆ Assess current practice standards, practical issues surrounding management.
- ◆ Identify the unique challenges facing patients with traumatic brain injury.

T33 Controversies in Management of Low Grade Gliomas

MODERATOR: Mitchel S. Berger

FACULTY: Susan Chang, Hugues Duffau, Frederick F. Lang, John H. Sampson

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Compare various surgical and medical modalities appropriate for the treatment of low grade gliomas.
- ◆ Discuss current research pertaining to the management of these tumors and their treatment strategies.

T34 Complication Avoidance and Advanced MIS Applications

MODERATOR: Richard G. Fessler

FACULTY: Faheem A. Sandhu, Michael Y. Wang, Jean-Paul Wolinsky

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the current indications for minimally invasive spinal surgery.
- ◆ Plan techniques appropriate for minimally invasive spinal surgery.
- ◆ Determine the expected outcomes and complications associated with these techniques.

T35 Acute and Long-term Management of Peripheral Nerve Trauma

MODERATOR: Eric L. Zager

FACULTY: Line Jacques, Rajiv Midha, Christopher J. Winfree

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe basic nerve injury types and their medical and surgical management.
- ◆ Identify indications and techniques for peripheral nerve surgery.
- ◆ Incorporate strategies for augmenting peripheral nerve surgery in their practice.

1:30 - 2:00 PM
Break with Exhibitors

2:00 - 3:30 PM

ORAL PRESENTATIONS

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ✦ Discuss the findings of novel neurosurgical studies and critique the design and methodology of these studies.
- ✦ List important areas for further knowledge development and research and identify the most important ongoing clinical trials.

2:00 - 3:30 PM

SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES

MODERATORS: D. Kojo Hamilton, Charles A. Sansur

2:00 - 2:09 PM

133
International Variations in the Clinical Presentation and Management of Cervical Spondylotic Myelopathy: One Year Outcomes of the AOSpine Multicenter Prospective CSM-I Study

Michael G. Fehlings, Branko Kopjar, Shashank Sharad Kale, Helton Defino, Guiseppe Barbagallo, Ronald H.M.A. Bartels, Qiang Zhou, Paul M. Arnold, Mehmet Zileli, Gamaliel Tan, Osmar Moraes, Yasutsugu Yukawa, Manuel Alvarado, Massimo Scerrati, Tomoaki Toyone, Masato Tanaka, Ciaran Bolger

2:09 - 2:18 PM

134
BMP and Cancer Risk: Results of a Large, Propensity Matched Study

Shivanand P. Lad, Jacob H. Bagley, Beatrice Ugiliweneza, Ranjith Babu, Isaac Karikari, Chirag G. Patil, Maxwell Boakye

2:18 - 2:27 PM

135
Comprehensive Medical Management of Lumbar Stenosis and Spondylolisthesis is not Effective in Real-world Care: A Value Analysis of Cost, Pain, Disability and Quality of Life

Scott L. Parker, Scott Zuckerman, David Chau, Stephen Mendenhall, Saniya S. Godil, Matthew McGirt

2:27 - 2:36 PM

136
Diffusion Tensor Imaging for the Assessment of Cord Compression in Degenerative Cervical Stenosis

Zafer Orkun Toktas, Bahattin Tanrikulu, Gulden Demirci, Deniz Konya

2:36 - 2:45 PM

137
Comparison Between Patient and Surgeon Perception of Outcomes of Operations for Degenerative Spine Disease: A Prospective Blinded Database Study

Bart Thaci, Ben Z. Roitberg, Sandi Karen Lam, Frederick D. Brown, Jingjing Shen

2:45 - 2:54 PM

138
The Schwab-SRS Adult Spinal Deformity Classification: Assessment and Clinical Correlations Based On a Prospective Operative and Non-Operative Cohort

Frank Schwab, Virginie Lafage, Christopher I. Shaffrey, Justin S. Smith, Bertrand Moal, Christopher P. Ames, Kai-Ming G. Fu, Praveen V. Mummaneni, Douglas C. Burton, Munish Gupta, Vedat Deviren, Gregory Mundis, Robert Hart, Shay Bess, International Spine Study Group

2:54 - 3:03 PM

139
Prevalence and Risk Factors for Proximal Junctional Kyphosis (PJK) Following Realignment Surgery by Pedicle Subtraction Osteotomy: A Multicenter Review

Gregory Mundis, Virginie Lafage, Frank Schwab, Christopher P. Ames, Bertrand Moal, Richard A. Hostin, Praveen V. Mummaneni, Khaled Kebaish, Justin S. Smith, Vedat Deviren, Christopher I. Shaffrey, Eric Klineberg, Shay Bess, International Spine Study Group

3:03 - 3:12 PM

140
Does Recombinant Human Bone Morphogenetic Protein-2 (BMP) Use in Adult Spinal Deformity (ASD) Increase Complications and Are Complications Dose Related? A Prospective, Multicenter Study of 257 Consecutive Patients

Shay Bess, Breton G. Line, Oheneba Boachie-Adjei, Robert Hart, Virginie Lafage, Frank Schwab, Behrooz A. Akbarnia, Christopher P. Ames, Douglas C. Burton, Richard A. Hostin, Eric Klineberg, Gregory Mundis, Christopher I. Shaffrey, Justin S. Smith, International Spine Study Group

3:12 - 3:21 PM

141
Local Disease Control for Spinal Metastases Following Separation Surgery and Adjuvant Hypofractionated or High-Dose Single-Fraction Stereotactic Radiation Therapy: Outcomes Analysis in 186 patients

Ilya Laufer, Bryan Iorgulescu, Talia Chapman, Eric Lis, Weiji Shi, Zhigang Zhang, Brett Cox, Mark H. Bilsky, Yoshiya Josh Yamada

3:21 - 3:30 PM

142
Intradiscal Injection of Simvastatin Results in Radiologic, Histologic, and Genetic Evidence of Disc Regeneration in a Rat Model of Degenerative Disc Disease

Khoi Duc Than, Shayan Rahman, Lin Wang, Adam Khan, Kwaku A. Kyere, Frank LaMarca, Huina Zhang, Paul Park, Chia-Ying Lin

2:00 - 3:30 PM

SECTION ON NEUROTRAUMA AND CRITICAL CAREMODERATORS: Jason H. Huang,
Jamie Sue Ullman

2:00 - 2:09 PM

SYNTHESES AWARD FOR RESIDENT
RESEARCH ON BRAIN AND
CRANIOFACIAL INJURY**143****Diffusion Tensor and Susceptibility-weighted Imaging in Concussion Assessment of National Football League Players**Neal Luther, Sumit Niogi, Kenneth Kutner,
Scott Rodeo, Teena Shetty, Russell Warren,
Leigh Weiss, Ronnie Barnes,
Robert Zimmerman, Apostolos Tsiouris,
Roger Hartl

2:09 - 2:18 PM

SYNTHESES AWARD FOR RESIDENT
RESEARCH ON SPINAL CORD AND
SPINAL COLUMN INJURY**144****Visualizing Plasticity and Altered Neuronal Signaling in the Injured Human Spinal Cord with fMRI**David W. Cadotte, Patrick Stroman,
Rachael Bosma, David J. Mikulis,
Natalia Nugaeva, Michael G. Fehlings

2:18 - 2:27 PM

Sport-Related Concussion and Age: Number of Days to Neurocognitive BaselineScott L. Zuckerman, Mitchell Odom,
Young M. Lee, Jonathan Forbes,
Allen K. Sills, Jr., Gary Solomon

2:27 - 2:36 PM

146**Modeling and Machine Learning of Cerebrovascular Dynamics: A Framework for Monitoring Unmeasurable Patient Variables**Ahilan Sivaganesan, Yusuf Erol,
Geoffrey T. Manley, Stuart Russell

2:36 - 2:45 PM

147**Correlation Between the Thoracolumbar Injury Classification and Severity Score (TLICS) and Delayed Surgery for Acute Thoracolumbar Compression and Burst Fractures in Patients without Neurologic Injury**Christopher Michael Bonfield,
Matthew B. Maserati, David O. Okonkwo,
Adam S. Kanter

2:45 - 2:54 PM

148**Preinjury Antithrombotic Therapy and the Elderly TBI Patient**Ramesh Grandhi, Gillian Harrison,
Joshua S. Bauer, Zoya Voronovich,
Phillip Parry, Dederia H. Nicholas,
Gary Marshall, Louis H. Alarcon,
David O. Okonkwo

2:54 - 3:03 PM

149**Nanoprodrug Accumulates in Experimental Traumatic Brain Injury**John S. Yu, Bong-Seop Lee, Morgan Clond,
Eric Ley

3:03 - 3:12 PM

150**Rethinking Autoregulation in Traumatic Brain Injury: A Majority of Patients with Disruptive Dynamic Autoregulation Do Not Respond to an Elevated Cerebral Perfusion Pressure**Eric C. Peterson, Kathleen Tozer,
Wendy Cohen, Arthur M. Lam,
Randall Matthew Chesnut

3:12 - 3:21 PM

151**Retrospective Review of Fresh Frozen Plasma Dosing To Correct Elevated INR Due To Warfarin: Development of a Dose Response Curve**David Stockwell, Travis Michael Dumont,
Bruce I. Tranmer, Paul Jarvis

3:21 - 3:30 PM

152**The Value of Scheduled Repeat Cranial Computed Tomography Following Mild Head Injury: Single Center Experience and Meta-Analysis**Saleh A. Almenawer, Julia Bogza,
Blake Yarascavitch, Niv Sne,
Forough Farrokhyar, Naresh Murty,
Kesava Reddy

2:00 - 3:30 PM

SECTION ON PAIN

MODERATOR: Christopher J. Winfree

2:00 - 2:09 PM

RONALD TASKER AWARD

153**Accurately Measuring Outcomes After Surgery for Adult Chiari I Malformation: Determining the Most Valid and Responsive Instruments**Saniya S. Godil, Scott L. Parker,
Scott Zuckerman, Stephen Mendenhall,
Matthew McGirt

2:09 - 2:18 PM

154**Determination of Minimum Clinically Important Difference (MCID) in Pain After Percutaneous Stereotactic Rhizotomy (PSR) for Trigeminal Neuralgia (TN)**Vishruth K. Reddy, Scott L. Parker,
Samit A. Patrawala, Dennis T. Lockney,
Pei-Fang Su, Robert A. Mericle

2:18 - 2:27 PM

155**Percutaneous Balloon Compression versus Percutaneous Retrogasserian Glycerol Rhizotomy for the Treatment of Trigeminal Neuralgia**Pär Asplund, Patric Blomstedt,
Tommy A. Bergenheim

2:27 - 2:36 PM

156**Neuroimaging Biomarkers of Chronic Neuropathic Pain and its Modulation: Resting State fMRI Signals during Spinal Cord Stimulation**Chima Oluigbo, Amir Abduljalil,
Xiangyu Yang, Andrew Kalnin,
Michael V. Knopp, Ali R. Rezaei

2:36 - 2:45 PM

**157
Utilization of Spinal Cord Stimulation
in Patients with Failed Back Surgery
Syndrome***Jonathan Choi, Ranjith Babu,
Jacob H. Bagley, Vijay Agarwal,
Mary I. Huang, Beatrice Ugiliweneza,
Chirag G. Patil, Maxwell Boakye,
Shivanand P. Lad*

2:45 - 2:54 PM

**158
Experience with Fifteen Years of
Dorsal Root Entry Zone (DREZ)
Lesioning at a Single Institution***Jonathan Forbes, Walter Jermakowicz,
Luke Tomycz, Peter Konrad*

2:54 - 3:03 PM

**159
Microsurgical Descending
Tractotomy in Cases of Intractable
Trigeminal Pain Syndromes***John A. Braca, Nikhil Kanti Patel,
Douglas E. Anderson*

3:03 - 3:12 PM

**160
Surgical Outcomes of Trigeminal
Neuralgia in Patients with Multiple
Sclerosis***Alireza Mohammad Mohammadi,
Joung H. Lee, Gene H. Barnett*

3:12 - 3:21 PM

**161
Intraoperative Magnetic Resonance
Imaging as a Guide to Patient
Selection for Duraplasty After Bony
Decompression for Adult Chiari 1
Malformation: A Preliminary
Experience***S. Kathleen Bandt, Spiros L. Blackburn,
Chris Lim, John Evans, Michael R. Chicoine*

3:21 - 3:30 PM

**162
The Value of Endoscopy in
Microvascular Decompression
Procedures***Morgan Broggi, Paolo Ferroli,
Francesco Acerbi, Giovanni Tringali,
Angelo Franzini, Giovanni Broggi*

2:00 - 3:30 PM

**SECTION ON PEDIATRIC
NEUROLOGICAL SURGERY****MODERATORS:** *Philipp R. Aldana,
Vivek Mehta*

2:00 - 2:09 PM

**SHERRY APPLE RESIDENT TRAVEL
SCHOLARSHIP
163****Beneficial Functional Outcomes of
Selective Dorsal Rhizotomy (SDR)
Are Long Lasting and Alter the
Natural History of Motor
Development in Spastic Cerebral
Palsy***Roy W.R. Dudley, Michele Parolin,
Bruno Gagnon, Rajeet Singh Saluja,
Rita Yap, Kathleen Monpetit, Joanne Ruck,
Chantal Poulin, Marie-Andree Cantin,
Thierry Benaroch, Jean-Pierre Farmer*

2:09 - 2:18 PM

**164
LICAM as a Marker of an Aggressive
Tumor Phenotype in Children with
Juvenile Pilocytic Astrocytoma***Dawn Kernagis, Michael Datto,
Roger McLendon, Gerald A. Grant*

2:18 - 2:27 PM

**165
Multiplexed Urinary Biomarkers
Identify the Presence of Pediatric
Medulloblastoma***Xuezhe Han, Brendan McNeish,
Edward R. Smith*

2:27 - 2:36 PM

**166
An Analysis of Factors Determining
the Need for CSF Diversion
Procedures After Posterior Fossa
Tumor Surgery in Children***Gopalakrishnan Chittur Viswanathan,
Girish Ramachandran Menon, Suresh Nair,
Amit Dhakoji*

2:36 - 2:45 PM

**167
Isolated Fourth Ventricle: To Shunt or
Stent?***Aaron Mohanty, Satyanarayana Satish,
Kim H. Manwaring*

2:45 - 2:54 PM

**168
Moyamoya Syndrome Associated
with Neurofibromatosis Type 1 in
Children: Perioperative and Long-
Term Outcome After Pial Synangiosis***Nicole J. Ullrich, McKenzie Koss,
R. Michael Scott, Edward R. Smith*

2:54 - 3:03 PM

**169
Efficacy and Safety of Endoscopic
Transventricular Lamina Terminalis
Fenestration for Hydrocephalus***Jaime G. Torres-Corzo,
Leonardo Rangel-Castilla, Andrew Jea,
Steven Wei-Hung Hwang*

3:03 - 3:12 PM

**170
Cognitive Changes Following
Disconnective Surgery for Intractable
Hemispheric/Sub-hemispheric
Pediatric Epilepsy***Roy Thomas Daniel, Ari G. Chacko,
Santhosh George Thomas*

3:12 - 3:21 PM

**171
Computed Tomography Based
Anatomical Study to Assess
Feasibility of Pedicle Screw
Placement in the Lumbar and Lower
Thoracic Pediatric Spine***Kashif Ajaz Shaikh, Garrett Bennett,
Ian Kainoa White, Carli Bullis,
Daniel H. Fulkerson*

3:21 - 3:30 PM

**172
Rate of Pediatric Ventriculo-
peritoneal Shunt Infection After
Prophylactic Administration of
Intrathecal Vancomycin***Nathan Christopher Rowland,
Sue Ditmeyer, Peter P. Sun*

3:30 - 5:00 PM

Exhibit Hall

**SNACK BREAK
WITH EXHIBITORS**

Enjoy Chicago's famous Garrett's popcorn and other treats as you connect with your corporate contacts during the Snack Break with the Exhibitors. This informal networking event provides an outstanding opportunity to meet with your corporate partners to hear about their latest products and services!



2:00 - 3:30 PM

COUNCIL OF STATE NEUROSURGICAL SOCIETIES Managing the Financial Challenges of Neurosurgical Practice in 2012

MODERATORS: J. Brad Bellotte, Ann R. Stroink

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify and navigate the key changes that will occur in the conversion from ICD-9 to ICD-10.
- ◆ Identify the role of a mid-level practitioner in the neurosurgical healthcare team.
- ◆ Outline the advantages and disadvantages of mid-level practitioners to the private and hospital-employed neurosurgery practice as well as the potential influence on neurosurgical residency training.
- ◆ Implement value-based purchasing and delineate the various CME payment plans.
- ◆ Define the term Accountable Care Organization (ACO) and explain how ACOs may affect neurosurgery.

2:00 - 2:30 PM

ICD 10 Changes and What They Might Mean to Your Practice

Joseph S. Cheng

2:30 - 3:00 PM

Advantages and Disadvantages of Mid-level Practitioners

Scott Butler

3:00 - 3:30 PM

Value Based Purchasing and CMS Payment Plans

Derek J. Robinson

2:00 - 3:30 PM

SECTION ON CEREBROVASCULAR SURGERY

The Future is Now...

MODERATORS: Nicholas C. Bambakidis, J D. Mocco

COURSE DESCRIPTION: Updates of treatment methods for ruptured and unruptured aneurysms will be detailed. New technological advances in the field will also be presented to attendees.

LEARNING OBJECTIVES: Upon completion of

this course, participants should be able to:

- ◆ Discuss the roles of simulators in training for cerebrovascular surgery.
- ◆ Identify the advantages and disadvantages of various treatment methods.

2:00 - 2:05 PM

Introduction of Drake Lecturer

Sepideh Amin-Hanjani

2:05 - 2:30 PM

Drake Lecturer Treatment of Cerebrovascular Disorders: If and Why, Not How

M. Christopher Wallace

2:30 - 2:35 PM

Presentation of 2012 Massimo Collice Prize

Joshua Bederson

2:35 - 2:45 PM

Presentation of CNS CV Section Fellowship

Sepideh Amin-Hanjani

2:45 - 3:00 PM

Simulators and their Potential Role in Cerebrovascular Training

Bernard R. Bendok

3:00 - 3:15 PM

Aneurysm Treatment: The New Generation of Tools and How They're Changing the Game

Giuseppe Lanzino

3:15 - 3:30 PM

The Cerebrovascular Surgeon of the Future - Is Neurosurgery Leading the Way or Have We Lost Our Way?

David J. Langer

2:00 - 3:30 PM

SECTION ON STEREOTACTIC AND FUNCTIONAL NEUROSURGERY

Update on Neurosurgery for Cognitive and Behavioral Disorders

MODERATORS: Aviva Abosch, Konstantin V. Slavin

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify existing neuromodulatory therapies for the neuropsychiatric disorders—their indications, likely outcomes, and risks.
- ◆ Describe therapies currently under investigation.

2:00 - 2:17 PM

Review of the Neural Circuitry of Behavioral Disorders

Aviva Abosch

2:17 - 2:35 PM

Neuromodulation for Alzheimer's Disease and Dementias

Andres M. Lozano

2:35 - 2:53 PM

Neuromodulation for Depression

Robert E. Gross

2:53 - 3:11 PM

Surgery for Tourette Syndrome

Veerle Visser-Vandewalle

3:11 - 3:30 PM

OCD and Cognitive Neuromodulation

Emad N. Eskandar

2:00 - 3:30 PM

SECTION ON TUMORS

Primary Spinal Neoplasms: Treatment and Science Updates

MODERATORS: Frederick F. Lang, Viviane S. Tabar

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Review current strategies in the management of intramedullary tumors, intradural extramedullary tumors, and primary tumors of the spinal column with an emphasis on ependymomas, schwannomas, and chordomas.
- ◆ Provide an update on scientific developments pertaining to the biology of intramedullary tumors, intradural extramedullary tumors, and primary tumors of the spinal column.
- ◆ A special lecture will present an overview of proton beam radiation and its indications, with a focus on tumors of the spine.

2:00 - 2:05 PM

Introduction

2:05 - 2:20 PM

Intramedullary Spinal Cord Tumors: Resection Techniques and Modern Biology

George I. Jallo

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2:20 - 2:35 PM
Intradural Extramedullary Spinal Neoplasms: Focus on Schwannomas and Neurofibromatosis
 Paul C. McCormick

2:35 - 2:50 PM
Primary Spinal Column Neoplasms: Lessons Learned from Chordomas
 Laurence D. Rhines

2:50 - 3:20 PM
Panel Discussion

3:00 - 3:20 PM
Proton Beam Therapy: Biology and Applications
 Jay Loeffler

3:20 - 3:30 PM
Discussion

2:00 - 3:30 PM
SPECIAL COURSE II
Functional Neuroimaging: Where Do We Go from Here?

COURSE DIRECTORS: Charles L. Rosen, Michael P. Steinmetz
FACULTY: Peter A. Bandettini, Michael V. Knopp, Wade M. Mueller, Walter Schneider

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe the current state of the art regarding functional imaging and its implications in neurosurgery.
- ◆ Understand how imaging may be able to assess brain function and connectivity, moving from static imaging to functional imaging.
- ◆ List where we are going to functional imaging, specifically, what we will be utilizing in the next 20 years.

2:00 - 2:05 PM
Introduction
 Charles L. Rosen

2:05 - 2:25 PM
State-of-the-Art: Maximizing Tumor Resection - Use of Functional Imaging to Guide Resection
 Wade M. Mueller

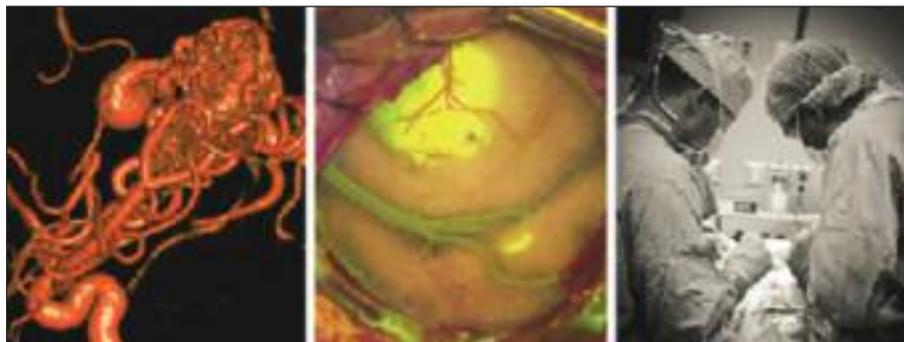
2:25 - 2:45 PM
Beyond Functional MRI: Studies of Brain Function and Connectivity
 Walter Schneider

2:45 - 3:05 PM
Advancing fMRI Technology, Methodology, Interpretation, and Applications in the Next 20 Years
 Peter A. Bandettini

3:05 - 3:25 PM
Neuroimaging: High/Ultra High Field MR Imaging
 Michael V. Knopp

3:25 - 3:30 PM
Discussion

3:30 - 5:00 PM
OPERATIVE NEUROSURGERY
Management of Desperate Intraoperative Moments



MODERATORS: Aaron A. Cohen-Gadol, Aaron S. Dumont, Nelson M. Oyesiku
FACULTY: Daniel L. Barrow, Michael William McDermott, Daniel K. Resnick, Robert F. Spetzler
COURSE DESCRIPTION: This session will discuss specific strategies for the management of intraoperative complications. Information will be delivered through operative examples/intraoperative videos with discussion and guidance provided by experts.
LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe specific strategies for the management of intraoperative complications.

3:30 - 4:30 PM
Annual Business Meeting

5:00 - 6:00 PM
CNS Resident SANS Challenge Championship Round

6:00 - 7:00 PM
Resident Recruitment Social

WINS Symposium/Reception

Tuesday, October 9, 6:00 PM
 Sheraton Chicago Hotel and Towers,
 Chicago Ballroom VI

Challenges in Neurosurgery: Lessons Learned from Around the World

The symposium/reception will include esteemed neurosurgeons from around the world and from all levels of training to discuss challenges in neurosurgery and how Women in Neurosurgery can work to overcome these challenges to improve patient care and the neurosurgical community.



6:30 - 8:30 PM

DINNER SEMINAR 4

CSM – Front versus Back

MODERATORS: *Zoher Ghogawala, Paul C. McCormick*

FACULTY: *Michael G. Fehlings, Paul K. Maurer*

LEARNING OBJECTIVES: *Upon completion of this course, participants should be able to:*

- ◆ Compare different surgical strategies for treating cervicovestibular myelopathy (CSM) using validated outcomes measures.
- ◆ Review how to interpret economic evaluations of surgical procedures for CSM.
- ◆ Describe how comparative effectiveness research might guide practice for spinal disorders.

6:30 - 6:40 PM

Introduction – Case Presentation

Zoher Ghogawala

6:40 - 7:00 PM

Introduction – What is the Science of Practice?

Paul C. McCormick

7:00 - 7:20 PM

Comparative Effectiveness – CSM Surgery

Zoher Ghogawala

7:20 - 7:30 PM

Discussion

7:30 - 7:50 PM

Anterior versus Posterior Surgery for CSM

Michael G. Fehlings

7:50 - 8:00 PM

Discussion

8:00 - 8:20 PM

Practical Decision-making for CSM

Paul K. Maurer

8:20 - 8:30 PM

Discussion

Chicago Cut Steakhouse

Chicago Cut is dedicated to putting culinary flair back into Chicago's upscale restaurant scene. That requires a unique menu, an unmatched wine list, and a modern twist on the traditional steakhouse setting.

Dinner Seminar includes a three-course plated dinner and wine service. Transportation will be provided.

USA Today named Chicago Cut Steakhouse as one of the top 10 Steakhouses in the nation this year!

6:30 - 8:30 PM

DINNER SEMINAR 5

Aneurysm: Clip and/or Coil?

MODERATOR: *Sepideh Amin-Hanjani*

FACULTY: *Felipe Albuquerque, Bernard R. Bendok, Carlos A. David*

LEARNING OBJECTIVES: *Upon completion of this course, participants should be able to:*

- ◆ To review the current literature regarding clinical decision-making for aneurysm treatment modality.
- ◆ Describe recent advances in endovascular therapy for aneurysms.
- ◆ Discuss surgical management of intracranial aneurysms.

6:30 - 6:40 PM

Introduction – Case Presentation

Sepideh Amin-Hanjani

6:40 - 7:00 PM

Decision-making in Aneurysm Surgery

Bernard R. Bendok

7:00 - 7:10 PM

Discussion

7:10 - 7:20 PM

Latest Endovascular Techniques

Felipe Albuquerque

7:20 - 7:30 PM

Discussion

7:30 - 7:50 PM:

Surgical Approaches to Aneurysm Treatment

Carlos A. David

7:50 - 8:00 PM

Discussion

8:00 - 8:30 PM

Panel Discussion – Case Examples

Naha

Naha offers a seasonal American menu with influences of the Mediterranean, and effortlessly blends the culinary, design and management talents of the cousins Carrie and Michael Nahabedian.

Dinner Seminar includes a three-course plated dinner and wine service. Transportation will be provided.

Chef Carrie Nahabedian has been nominated for three consecutive James Beard Foundation Awards as well as Best Chef Midwest and Best Chef Great Lakes for the past three years.



OUR FUTURE IS NOW!

WEDNESDAY, OCTOBER 10 † PROGRAM HIGHLIGHTS

- 10:16 – 10:38 AM † **Future of Healthcare Delivery from Corporate America**
Michael McMillan
- 10:38 – 10:58 AM † HONORED GUEST LECTURE
The Impact of High Field Strength Intraoperative MRI on Brain Tumor Management
Ralph G. Dacey, Jr.
- 11:03 – 11:30 AM † **Too Big to Know: Rethinking Knowledge Now That the Facts Aren't the Facts, Experts Are Everywhere, and the Smartest Person in the Room Is the Room**
David Weinberger
- 2:00 – 3:30 PM † **Multidisciplinary Oral Presentations II**
- 2:00 – 3:30 PM † **CONSENSUS SESSION II: Treatment of Acoustic Neuromas: Building Consensus From Controversy**

GENERAL SCIENTIFIC SESSION IV

7:00 – 11:30 AM McCormick Place Lakeside Center

PRESIDING OFFICER: Daniel K. Resnick

MODERATORS: Aviva Abosch, James S. Harrop

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate the latest knowledge in peripheral nerve repair, stereotactic radiosurgery and pain management to incorporate into their practice.
- ◆ Develop a personalized approach to brain tumor therapy and determine how that may affect future treatment of their patients.

7:00 – 7:05 AM

Introduction and Disclosures

Daniel K. Resnick

7:05 – 7:27 AM

Listening to the Brain – New Techniques in Intraoperative Functional Mapping

Eric C. Leuthardt

7:27 – 7:47 AM

The Future of Peripheral Nerve Repair

Allan J. Belzberg

7:47 – 8:07 AM

The Future of Stereotactic and Functional Neurosurgery

Roy A.E. Bakay

8:07 – 8:27 AM

The Future of Pain Neurosurgery

Christopher J. Winfree

8:27 – 8:47 AM

The Future of Personalized Brain Tumor Treatment

Cameron Brennan

8:47 – 8:52 AM

Fellowship Award Winners

Steven N. Kalkanis

8:52 – 9:00 AM

Guidelines Updates on Spine Trauma

Timothy C. Ryken

9:00 – 10:00 AM

Beverage Break with Exhibitors

10:00 – 10:15 AM

CNS RESIDENT AWARD

Kristopher Thomas Kahle

112

Genome-wide shRNA Screening Defines the SUMO-activating Enzyme (SAE1/2) as a Novel Therapeutic Target for Tumors Driven by c-Myc Oncogenesis

J.D. Kessler, Kristopher Thomas Kahle, T. Sun, K.L. Meerbrey, M.R. Schlabach, E.M. Schmitt, S.O. Skinner, Q. Xu, M.Z. Li, Z.C. Hartman, M. Rao, P. Yu, R. Dominguez-Vidana, A.C. Liang, N.L. Solimini, R.J. Bernardi, J. Yu, T. Hsu, I. Golding, J. Luo, C.K. Osborne, C.J. Creighton, S.G. Hilsenbeck, R. Schiff, C.A. Shaw, S.J. Elledge, Thomas Westbrook

10:15 – 10:16 AM

Introduction of Special Lecturer

Alan M. Scarrow



10:16 – 10:38 AM

SPECIAL LECTURE

Future of Healthcare Delivery from Corporate America

Michael McMillan



10:38 – 10:58 AM

HONORED GUEST LECTURE

The Impact of High Field Strength Intraoperative MRI on Brain Tumor Management

Ralph G. Dacey, Jr.

10:58 – 11:03 AM

Introduction to David Weinberger

Ganesh Rao



11:03 – 11:30 AM

SPECIAL LECTURE

Too Big to Know: Rethinking Knowledge Now That the Facts Aren't the Facts, Experts Are Everywhere, and the Smartest Person in the Room Is the Room

David Weinberger

11:30 AM – 12:00 PM

Break with Exhibitors



11:30 AM

Book Signing with David Weinberger

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All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

W36 Recurrent, Thoracic and Far Lateral Lumbar Disc Herniations

MODERATOR: J. Patrick Johnson

FACULTY: Richard G. Fessler, Patrick W. Hitchon, John J. Knightly

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Analyze their current treatment strategy for Cervical Radiculopathy.
- ◆ Identify the advantages and disadvantages of the various surgical approaches for the management of cervical disc herniation with radiculopathy, including the anterior foraminotomy approach, as well as more traditional approaches.

W37 Complication Avoidance and Management in Skull Base Surgery

MODERATOR: Albert L. Rhoton, Jr.

FACULTY: Ossama Al-Mefty, Bharat Guthikonda, Jacques J. Morcos, Chandra N. Sen

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe the common complications occurring in skull base surgery.
- ◆ Identify various techniques available for managing complications during skull base surgery.
- ◆ Identify the role of adjunctive technologies in managing complications during and after skull base surgery.

W38 An Update on Movement Disorders: Novel Targets, Indications, and Approaches

MODERATOR: Robert E. Gross

FACULTY: Kelly D. Foote, Peter Konrad, Paul S. Larson, Julie G. Pilitsis

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the indications for deep brain stimulation for movement disorder.
- ◆ Determine outcomes and risks related to deep brain stimulation when assessing their management strategies for the treatment of movement disorders.

W39 Malignant Glioma: Where Are We Now?

MODERATOR: Andrew T. Parsa

FACULTY: E. Antonio Chiocca, Linda Liau, John H. Sampson, Mark Edwin Shaffrey

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify current and emerging techniques for treating patients with malignant gliomas.
- ◆ Determine the impact on treatment strategies for these patients.

W40 Lessons Learned: Avoidance and Management of Complications of Aneurysm Surgery

MODERATOR: Giuseppe Lanzino

FACULTY: Carlos A. David, Ali F. Krisht, Andreas Raabe, Byron Gregory Thompson, Jr.

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the common complications in aneurysm surgery.
- ◆ Describe management of complications occurring during aneurysm surgery.
- ◆ List the different techniques available to manage complications with adjunctive technologies.

W41 Approaches to Managing Pineal Region Tumors in Children

MODERATOR: Frederick A. Boop

FACULTY: Alan R. Cohen, Daniel James Guillaume, Mark Krieger, Mark M. Souweidane

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the presenting signs and symptoms of pineal region tumors and the differential diagnosis based upon current radiological findings.
- ◆ Describe the various surgical approaches to these tumors including stereotactic biopsy, endoscopic biopsy and third ventriculostomy, and various craniotomies.
- ◆ Review the peri-operative work-up, clinical staging and indications for adjuvant therapy for pineal region tumors.
- ◆ List common pitfalls, complications and how to avoid them in managing these neoplasms.

W42 Sagittal Balance in Spine Surgery

MODERATOR: Regis W. Haid, Jr.

FACULTY: Edward C. Benzel, Robert F. Heary, Frank LaMarca, Justin Smith

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the appropriate clinical and radiographic evaluation for the patient who might have sagittal misalignment.
- ◆ Detail techniques to reduce the risk of improper sagittal alignment following even limited fusion procedures.
- ◆ Describe the interaction of the spinal parameters and pelvic parameters in the patient with sagittal misalignment.
- ◆ Apply operative pearls for the management of sagittal plane deformity such as iatrogenic flat back deformity.
- ◆ Appraise new techniques in spinal osteotomy surgery to improve outcomes and reduce complications.

W43 Strategies for Maximizing Compensation for Your Neurosurgical Practice

MODERATOR: Donald M. Whiting

FACULTY: James I. Ausman, Gary M. Bloomgarden, Joseph S. Cheng, Fernando G. Diaz

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate the pressures in the current economic environment affecting medical reimbursement.
- ◆ Design strategies for maximizing reimbursement in the existing economic environment.
- ◆ Identify approaching challenges in medical reimbursement.

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fees are \$75.00 each (\$60.00 for Residents/Fellows/Medical Students/Nurses/Physician Extenders)

W44 Indications for Radiosurgery in Your Neurosurgical Oncology Practice

MODERATOR: Michael William McDermott
FACULTY: Steven D. Chang, William A. Friedman, John G. Golfinos, Michael A. Vogelbaum

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Compare their current treatment plans to evidence in the medical literature.
- ◆ Evaluate the use of radiosurgery for neurosurgical disorders including tumors of the brain and spine.

W45 Sports-related Head, Neck and Peripheral Nerve Injuries

MODERATOR: Douglas L. Brockmeyer
FACULTY: Richard G. Ellenbogen, Langston T. Holly, Christopher J. Winfree

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the unique spine injuries associated with various sporting activities.
- ◆ Describe surgical and non-surgical management of sports related spinal injuries.
- ◆ Identify the variability in sports related spine and spinal cord injuries across different age groups.

W46 Hematology and Coagulation for Neurosurgeons: Dangers and Solutions

MODERATOR: Issam A. Awad
FACULTY: Joseph E. Beshay, Michael T. Lawton, Maciej S. Lesniak, Alex B. Valadka

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Understand that neurosurgeons commonly face acute peri- and intraoperative decisions regarding the diagnosis and management of coagulopathy that are crucial to patient safety and excellent outcomes.
- ◆ Review important coagulation mechanisms, parameters, indications and clinical pearls to their current strategy.
- ◆ List important screening guidelines and define the key points of emergency and intraoperative coagulation management.

W47 Managing Metastasis to the Spine

MODERATOR: Laurence D. Rhines
FACULTY: Ziya L. Gokaslan, Daniel M. Sciubba, Meic H. Schmidt, Narayan Sundaresan

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Incorporate current diagnostic and treatment strategies for metastatic tumors of the spine into their treatment plans.
- ◆ Conceptualize a framework for decision making about surgery, conventional radiation, radiosurgery, and vertebral augmentation for these disorders.

W48 Evaluating Outcomes in Pediatric Neurological Surgery

MODERATOR: Stephen J. Haines
FACULTY: Patricia Aronin, Timothy M. George, Liliana Goumernova, David F. Jimenez

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Determine the various outcome measures utilized in evaluating pediatric neurosurgery patients.
- ◆ Identify the differences between pediatric and adult outcome measures.
- ◆ Assess which outcome measure may be best suited for a variety of pediatric surgical patient and/or surgery.

W49 Open Skull Base Surgery: When Is the Traditional Approach Necessary?

MODERATOR: William T. Couldwell
FACULTY: James K. Liu, Jeffrey J. Olson, Theodore H. Schwartz, Laligam N. Sekhar

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the common pathologies affecting the skull base.
- ◆ Describe the various surgical approaches available for treating skull base lesions.
- ◆ Identify the available surgical adjuncts in managing patients with skull base lesions.

W50 Image Guidance in Spinal Surgery

MODERATOR: Iain H. Kalfas
FACULTY: H. Dennis Mollman, Kai Michael Scheufler, James M. Schuster, Jean-Paul Wolinsky

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Identify the indications and various options for image guidance in spinal surgery.
- ◆ Describe the technique and accuracy of the various options for image guidance in spinal surgery.
- ◆ Assess the advantages and drawbacks to the use of image guidance in spinal surgery.

1:30 - 2:00 PM
Break with Exhibitors

2:00 - 3:30 PM

MULTIDISCIPLINARY ORAL PRESENTATIONS IIMODERATOR: *Costas George Hadjipanayis*LEARNING OBJECTIVES: *Upon completion of this course, participants should be able to:*

- ◆ Evaluate the findings of novel neurosurgical studies.
- ◆ Critique the design and methodology of these studies.
- ◆ List important areas for further knowledge development and research.
- ◆ Identify the most important ongoing clinical trials.

2:00 - 2:03 PM

Introduction

2:03 - 2:10 PM

194**Recombinant High-mobility Group Box 1 Protein (HMGB-1) Promotes Myeloid Differentiation Primary Upregulation in Mouse Primary Cortical Neurons***Wei Li, Haiping Ling, Wanchun You, Chunhua C.H. Hang*

2:10 - 2:17 PM

195**Improving Benchmarking in Spine Surgery: Suggested Modifications of the UHC Algorithm for Calculating Readmission Rates Following Spine Surgery***Beejal Y. Amin, William Schairer, Tsung-Hsi Tu, Christopher P. Ames, Sigurd Berven, Dean Chou, Vedat Deviren, Steven Takemoto, Praveen V. Mummaneni*

2:17 - 2:24 PM

196**Intrathecal Infusion of Decorin to Sub-acute Contusion Spinal Cord Injury Promotes Robust Functional Recovery***Kenneth Minor, Kyle Jasper, Jeannette E. Davies, Stephen Davies*

2:24 - 2:31 PM

197**Career Satisfaction and Burnout Among U.S. Neurosurgeons: A Feasibility and Pilot Study***Paul Klimo, Jr., Michael G. DeCuypere, Brian T. Ragel, Shirley McCartney, William T. Couldwell, Frederick A. Boop*

2:31 - 2:38 PM

198**An Antigen Vault Nanoparticle Vaccine Can Effectively Stimulate Dendritic Cells and Activate a Specific T cell Immune Response***Isaac Yang, Yang Jian, Heather Garcia, Winward Choy, Daniel Tetsuji Nagasawa, Marko Spasic, Andy Trang, Horacio Soto, Kate Ericsson, Dominique Lisiero, Michelle Hickey, Carol Kruse, Robert M. Prins, Leonard Rome, Linda M. Liau*

2:38 - 2:45 PM

199**Outcomes After Microvascular Decompression for Patients with Trigeminal Neuralgia and Suspected Multiple Sclerosis***Bruce E. Pollock, Kathy J. Stein*

2:45 - 2:52 PM

200**Continued Concern of Parent Vessel Steno-Occlusive Progression with Onyx HD-500 and the Utility of Quantitative MRI in Serial Assessment***Andrew P. Carlson, Ali Alaraj, Sepideh Amin-Hanjani, Fady T. Charbel, Victor Aletich*

2:52 - 2:59 PM

201**Comparative Evaluation of Percutaneous Radiofrequency Rhizotomy, Stereotactic Radiosurgery and Microvascular Decompression in the Management of Refractory Trigeminal Neuralgia***Patrick W. Hitchon, Shafik N. Wassef, Ed Pennigton, Jennifer Noeller, Voncille Johnson*

2:59 - 3:06 PM

202**Diffusion Tensor Imaging Changes with Decompression of Chiari I Malformation***Sergey Abeshaus, Seth Friedman, Sandy Poliachik, Andrew Poliakov, Dennis Shaw, Jeffrey G. Ojemann, Richard G. Ellenbogen*

3:06 - 3:13 PM

203**Cross-frequency Coupling in the Human Hippocampus During Item Retrieval in Episodic Memory***Bradley Lega, John Burke, Joshua J. Jacobs, Ashwini Dayal Sharan, Gordon H. Baltuch, Michael J. Kahana*

3:13 - 3:20 PM

204**Determining The Quality and Effectiveness of Spine Surgery: Is Patient Satisfaction a Valid Proxy?***Saniya S. Godil, Scott L. Parker, Scott Zuckerman, Stephen Mendenhall, Matthew McGirt*

3:20 - 3:27 PM

BRAINLAB COMMUNITY
NEUROSURGERY AWARD**205****Surgical Management of Adult Intrinsic Brainstem Tumors***Charles Teo*

3:27 - 3:30 PM

Discussion

2:00 - 3:30 PM

SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES

Communicating the Value of Spine Surgery

MODERATOR: Joseph S. Cheng, Frank LaMarca

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Evaluate the metrics in measuring quality in spinal surgery.
- ◆ Review the economic impact affecting decisions in spinal surgery.
- ◆ Discuss the value of spine surgery to our patients and referring providers.

2:00 - 2:15 PM

The Science of Proving Quality in Spine Surgery

Matthew McGirt

2:15 - 2:30 PM

The Economic Impact of Spinal Surgery

Peter D. Angevine

2:30 - 2:45 PM

Communicating the Value of Spine Surgery to Patients and Providers

Richard Roski

2:45 - 3:00 PM

Demonstrating the Value of Spine Surgery to Payers

Charles A. Sansur

3:00 - 3:15 PM

Do Physician Owned Models Add Value?

Gregory B. Lanford

3:15 - 3:30 PM

How Will Value in Spine Surgery Be Determined in the Future?

Gregory J. Przybylski

2:00 - 3:30 PM

SECTION ON NEUROTRAUMA AND CRITICAL CARE

The Future is Now: Prevention, Brain Injury Treatment and Spinal Cord Injury Treatment

MODERATORS: Craig H. Rabb, Shirley I. Stiver

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the novel aspects of neurotrauma prevention/brain injury treatment/spinal cord injury treatment that are currently being practiced and that may be practiced in the future.
- ◆ Determine how to get involved in advancing neurotrauma prevention/brain injury treatment/spinal cord injury treatment towards these future goals.

2:00 - 2:30 PM

Current and Future Novel Aspects of Injury Prevention

Daniel B. Michael

2:30 - 3:00 PM

Current and Future Novel Aspects of Brain Injury Treatment

3:00 - 3:30 PM

Current and Future Novel Aspects of Spinal Cord Injury

Eve C. Tsai

2:00 - 3:30 PM

SECTION ON PAIN

Emerging Indications for Neurostimulation

MODERATORS: Christopher J. Winfree, Julie G. Piltis

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe the use of neurostimulation, including spinal cord stimulation, spinal nerve root stimulation, peripheral nerve stimulation, and brain stimulation, in the treatment of the less typical chronic pain disorders.
- ◆ Identify the emerging indications for neurostimulation, and the available evidence supporting neurostimulation for the treatment of these pain problems.

2:00 - 2:15 PM

Neurostimulation for the Treatment of Headache Disorders

Alon Y. Mogilner

2:15 - 2:30 PM

Neurostimulation for the Treatment of Axial Spinal Pain

Julie G. Piltis

2:30 - 2:45 PM

Neurostimulation for the Treatment of Limb Ischemia

Joshua M. Rosenow

2:45 - 3:00 PM

Neurostimulation for the Treatment of Chronic Unstable Angina

Jason M. Schwalb

3:00 - 3:15 PM

Neurostimulation for the Treatment of Abdominal Pain

Andre Machado

3:15 - 3:30 PM

Neurostimulation for the Treatment of Trunk Neuralgias

Erika A. Petersen

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2:00 - 3:30 PM

SECTION ON PEDIATRIC NEUROLOGICAL SURGERY

International Volunteer Opportunities in Pediatric Neurosurgery

MODERATORS: Greg Olavarria, David I. Sandberg

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Discuss the experiences of pediatric neurosurgeons who have volunteered abroad in developing countries.
- ◆ Determine how to get involved in volunteer efforts in developing countries.

2:00 - 2:15 PM

International Volunteer Opportunities in Pediatric Neurosurgery: Introduction and My Perspective

David I. Sandberg

2:15 - 2:35 PM

Volunteer Opportunities Through FIENS (Foundation for International Education in Neurological Surgery)

Gail Linskey Rousseau

2:35 - 2:55 PM

Volunteer Opportunities for Pediatric Neurosurgeons in Haiti

John Ragheb

2:55 - 3:15 PM

Volunteer Opportunities for Pediatric Neurosurgeons in Africa: My Experiences and How I Apply Them to My Current Practice

Benjamin C. Warf

3:15 - 3:30 PM

Discussion with all Panelists

2:00 - 3:30 PM

CONSENSUS SESSION II: Treatment of Acoustic Neuromas: Building Consensus From Controversy

MODERATOR: John G. Golfinos

FACULTY: David W. Andrews, Frederick George Barker, William A. Friedman, Carl B. Heilman, Jon H. Robertson

LEARNING OBJECTIVES: Upon completion of this course, participants should be able to:

- ◆ Describe the diagnosis and treatment options for patients with an acoustic neuroma.
- ◆ Compare the advantages and disadvantages of various treatment approaches including microsurgery, radiosurgery, and radiotherapy.
- ◆ Review complications from each approach and management of the same.
- ◆ Assess the literature using an evidence based medicine approach and know what the literature supports.

2:00 - 2:15 PM

Translab Approach

Jon H. Robertson

2:15 - 2:30 PM

Retrosigmoid Approach

Carl B. Heilman

2:30 - 2:45 PM

Stereotactic Radiosurgery

William A. Friedman

2:45 - 3:00 PM

Stereotactic Radiotherapy

David W. Andrews

3:00 - 3:15 PM

What the Evidence Supports

Frederick George Barker

3:15 - 3:30 PM

Audience Polling and Discussion



Earn additional CME after the course by participating in a supplemental SANS exam!

THANK YOU

to the following companies for supporting the 2012 CNS Annual Meeting through an educational grant:



As of June 14, 2012

Dear Auxiliary Member:

The Second City. The Windy City. The City of Big Shoulders. Known by many names, there is truly no other locale like Chicago. Offering dozens of cultural institutions, historical sites and museums, more than 200 theaters, nearly 200 art galleries and over 7,300 restaurants, we invite you to join us in this extraordinary city for the 2012 CNS Annual Meeting, October 6-10.

This year's Annual Meeting offers outstanding social events, "can't miss" speakers with multiple book signings, as well as numerous tours designed for you to maximize your enjoyment during your stay. From opening night at the famed Lyric Opera to a trip through suburban Oak Park where Frank Lloyd Wright's legend began, the Auxiliary Tour program provides you with opportunities to explore the best of Chicago, including:

- ◆ Sunday, October 7, 6:00 - 8:00 PM
CNS Opening Reception
Enjoy food, beverages and entertainment while catching up with your closest CNS colleagues.
- ◆ Monday, October 8, 12:00 - 3:30 PM
CNS Auxiliary Luncheon at the Chopping Block with Alpana Singh
Meet Alpana Singh, master sommelier and host of Emmy Award-winning TV show, *Check, Please!*, while learning cooking techniques during a hands-on demonstration from talented chefs.
- ◆ Tuesday, October 9, 3:30 - 5:00 PM
Snack Break with the Exhibitors
Tuesday afternoon's snack break allows you to mingle on the exhibit floor while enjoying some of Chicago's favorite snacks.
- ◆ Monday - Wednesday, 8:00 - 10:30 AM
Spouse Hospitality Suite
Before you set out to explore Chicago, stop by and enjoy a continental breakfast and ask a local Chicago expert any questions you may have.

Make your plans today and join us for this all-around exciting program in Chicago, Illinois!

Sincerely,



Catherine Wolfla



Lorelei Rao

AUXILIARY TOUR PROGRAM

SATURDAY, OCTOBER 6

AT01	4:45 - 9:30 PM	Opening Night at the Lyric Opera: Elektra	\$138.00
AT02	7:00 - 10:30 PM	I Love Lucy® Live on Stage	\$145.00

SUNDAY, OCTOBER 7

AT03	9:00 - 9:30 AM	Welcome to Chicago	Complimentary
AT04	9:30 AM - 1:30 PM	Chicago from a Different Perspective: John Hancock Observatory and Architectural River Cruise	\$85.00

MONDAY, OCTOBER 8

AT05	12:00 - 3:30 PM	CNS Auxiliary Luncheon: The Chopping Block with Alpana Singh (Hosted in part by the CNS)	\$50.00
AT06	1:00 - 5:00 PM	Chicago Highlights & Willis Tower Skydeck	\$65.00
AT07	5:00 - 11:00 PM	Best of Second City and Chicago Pizza	\$110.00
AT08	5:00 - 10:00 PM	Progressive Dine-Around Through Chicago's Neighborhoods	\$100.00

TUESDAY, OCTOBER 9

AT09	8:30 AM - 4:00 PM	Frank Lloyd Wright Experience with Lunch	\$120.00
AT10	4:00 - 8:30 PM	Jazz, Blues, and Beyond with a Soulful Dinner	\$165.00
AT11	6:30 - 10:30 PM	Shakespeare Theater: The Strange Undoing of Prudencia Hart	\$122.00

WEDNESDAY, OCTOBER 10

AT12	10:00 AM - 2:30 PM	Chicago Sweets Tour	\$95.00
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AUXILIARY TOUR PROGRAM

SATURDAY, OCTOBER 6

AT01

Opening Night at the Lyric Opera: Elektra

Saturday, October 6
4:45 - 9:30 PM
\$138



Cocktail reception from 5:30 – 6:30PM; Showtime at 6:30PM
It's the opening night for the 2012-2013 Lyric Opera Season and you're invited! Come celebrate the season's opening night with Chicago Socialites at the opening reception. There will be a cash bar with passed hors d'oeuvres as the excitement of the new season opener is shared throughout the room. Elektra—a poisoned, shattered soul—witnessed the murder of her father King Agamemnon when she was just a child. And the killers? Elektra's very own mother, Queen Clytemnestra, and her lover Aegisthus. Isolated and maltreated, Elektra now lives for just one thing—death for her mother at the hands of her brother Orestes. But when she's told that he's been killed, Elektra cracks—vowing to enact her own terrible revenge.

AT02

I Love Lucy® Live on Stage

Saturday, October 6
7:00 - 10:30 PM
\$145
Showtime at 8:00PM



I Love Lucy® Live on Stage, the brand new hit musical stage show adapted from the longest-running and most beloved television program in history, starring Lucy, Ricky, Fred and Ethel: America's favorite foursome, is coming to Chicago for the very first time! Imagine stepping back in time and into the Desilu Playhouse soundstage! It's 1952 and you are a member of the studio audience awaiting the filming of two

hilarious and oh so familiar "I Love Lucy" episodes. A charming host entertains and enlightens you to the behind-the-scenes filming process, the 1950's hi-fidelity technology, and this brand new thing called 'television'. The episodes begin and you witness, firsthand, the side-splitting antics of that crazy redhead in the Ricardo's New York apartment and thrill to the Cuban sounds of "The Ricky Ricardo Orchestra" at the famed Tropicana Nightclub. In between scenes? The Crystalltone Singers perform live advertising jingles of the show's newest sponsors in perfect 50's style harmony.

SUNDAY, OCTOBER 7

AT03

Welcome to Chicago

Sunday, October 7
9:00 - 9:30 AM
Complimentary

A brief summary of the best, most popular and most loved places to see and things to do in Chicago, followed by a 10 minute question and answer.

AT04

Chicago from a Different Perspective: John Hancock Observatory and Architectural River Cruise

Sunday, October 7
9:30 AM - 1:30 PM
\$85



See Chicago from a whole new vantage point. Start your day aboard a Chicago River Cruise! CNS guests receive priority boarding and seating. You will see the city's magnificent skyscrapers, and learn about the architecture that has made Chicago famous as you cruise coolly along the river. Stories and anecdotes about the city's history will entertain and astonish. You will even discover why the Chicago River flows backwards! Then see the city from a different angle, with a visit to the John Hancock Observatory, one of the highest sites in the city, for a "view from the top." CNS guests will receive priority access through the line to the observatory to look down on the buildings and Lake Michigan and enjoy panoramic views of the Windy City and several states! You can also step out onto the skywalk, follow the history wall, listen to the Sound scope to hear sounds of the city, and take a peek inside many of the city's attractions.

AUXILIARY TOUR PROGRAM

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MONDAY, OCTOBER 8

AT05

CNS Auxiliary Luncheon: The Chopping Block with Alpana Singh

Monday, October 8

12:00 - 3:30 PM

\$50 (Hosted in part by the CNS)



ENJOY a hands-on cooking demonstration learning cooking techniques all while having fun. During the event the talented chefs will guide the group along the way to create a multi course meal that you will be able to enjoy towards the end of the event. Alpana Singh will be with the group throughout the luncheon telling her story and explaining her wine recommendations. Alpana Singh is a master sommelier and served as the Director of Wine and Spirits for Lettuce Entertain You up until 2011. For the past nine seasons, Alpana has served as the host of the Emmy Award-winning restaurant review television show, Check, Please!, which airs weekly in Chicago. She also appears frequently on the station's nightly news program, Chicago Tonight where she answers viewer questions regarding wine and spirits in her segment, Ask Alpana. Nationally, Alpana has appeared on The Today Show and Food Network's Iron Chef America as well as numerous publications including Newsweek, Food & Wine, Wine Spectator, Bon Appetit and The New York Times.

AT06

Chicago Highlights & Willis Tower Skydeck

Monday, October 8

1:00 - 5:00 PM

\$65



Chicago is a city of surprises, from the glimmering lakefront to its outdoor museum of architecture. Sample the strength and beauty of this great city. An expert guide will point out the towering buildings of downtown and the upscale residences of the Gold Coast. Step out of the bus to take a photo at the museum campus, home to the Shedd Aquarium, Adler Planetarium, and Field Museum. This stop is truly one of the most beautiful portraits of the lakefront. Cruise down Michigan Avenue, "The Magnificent Mile," home



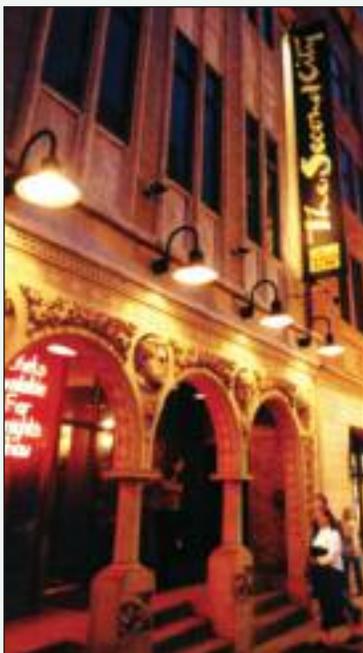
to countless renowned designers and shops and step out and take a picture with "The Bean". Glimpse at the Merchandise Mart and other architectural marvels, a unique collection that rivals any city in the country. Marvel at the wealth of public art ranging from Picasso to Chagall. Visit the site where the Great Chicago Fire started and hear how this sparked a great urban growth spurt. Guests will also be treated with a stop at the Willis Tower Skydeck where you will receive priority access to the best view in Chicago! On a clear day you can see up to 40-50 miles away. Imagine seeing Wisconsin, Michigan, Illinois and Indiana, all while walking around the Skydeck. There is no finer view of the architecture than from atop this amazing structure!

AUXILIARY TOUR PROGRAM

AT07

Best of Second City and Chicago Pizza

Monday, October 8
5:00 - 11:00 PM
\$110



Are you ready for a night of laughter and food like no other? Start your evening with some famous deep dish pizza at one of Chicago's oldest and most famous pizzerias, Gino's East. You'll be treated to a wide variety of pizzas, beer, wine and soda and the cash bar will have cocktails on demand. After dinner it's time to laugh as you head to Second City to experience a comedic performance that will have your eyes watering and your stomach aching. This comedy club is a famous North American institution for stand-up

comedy. Legendary alumni who began their careers in Chicago at The Second City include Dan Aykroyd, John Belushi, Mike Myers, Steve Carrell, and Tina Fey. The main stage is the perfect spot for you to be entertained by some of the most talented improvisational actors around! This is a great casual evening for you to enjoy a Chicago icon. Be on the lookout, you may even see a performance from the next comedic legend to be!

AT08

Progressive Dine-Around Through Chicago's Neighborhoods

Monday, October 8
5:00 - 10:00 PM
\$100



Chicago is one of the most diverse cities in America. In fact, less than a century ago the city boasted that nearly three out of four residents were immigrants or first generation Americans, giving proof to the claim that the city is a great melting pot of nationalities! With a tour through Chicago's most diverse neighborhoods, discover for yourself the rich heritage and old world traditions of its residents. Kick off your excursion with a trip to Chicago's Little Italy district for some wine and pizza. Then it's off to Greektown where you will indulge in an entrée of regional delicacies that will have you shouting "Opa!" After a satisfying meal, indulge in German dessert at its finest as you reminisce about your tasting journey through Chicago's cultural neighborhoods.



AUXILIARY TOUR PROGRAM

TUESDAY, OCTOBER 9

AT09

Frank Lloyd Wright Experience with Lunch

Tuesday, October 9
8:30 AM - 4:00 PM
\$120



Take a journey to suburban neighborhood Oak Park, where Frank Lloyd Wright's legend began. During a 45-minute tour through his Home and Studio, an expert docent will recount the story of Wright's work and life in Oak Park, the location where he and his family spent the first 20 years of his career, from 1889-1909. You will have the chance to learn more about Wright's famous "Prairie style" architecture and the meaning behind it. After enjoying a casual lunch in Oak Park, travel to Hyde Park to visit the Robie House on the University of Chicago campus which is considered one of the most important buildings in American architecture. It was created



by Frank Lloyd Wright for his client Frederick C. Robie, a forward-thinking businessman. Designed in Wright's Oak Park studio in 1908 and completed in 1910, the building is both a masterpiece of the Prairie style and renowned as a forerunner of modernism in architecture. Tours of the site offer both a first-hand experience of its amazingly contemporary spaces and the current restoration work that is returning the house to its original appearance.

AT10

Jazz, Blues, and Beyond with a Soulful Dinner

Tuesday, October 9
4:00 - 8:30 PM
\$165



"Sweet Home Chicago!" is the land of jazz and blues and this journey promises to take you through the Swing Era, Great Migration, the Music Industry, Evolution of Music and the Electric Blues. With a backstage pass to a historic blues club and a live blues performance along the way, your feet are sure to be a tappin' a soulful tune. Explore jazz clubs, studios, and other historic sites of Chicago's rich musical past. Guests get to stop by a 1920s and '30s jazz club where Louis Armstrong and Earl Hines once played. Travel from

the north side to the south side, hearing stories of the Great Migration, the rift between jazz and blues communities, and the recording technique of the blues Mecca of Chess Records. A blues musician hops on board for some live music and a harmonica lesson, capping off this experiential tour. Stop for dinner at Buddy Guy's Legends. Buddy Guy's Legends has been a Chicago landmark for over 20 years and is owned by the five-time Grammy Award-winning and Rock and Roll Hall of Fame Bluesman himself.



AUXILIARY TOUR PROGRAM

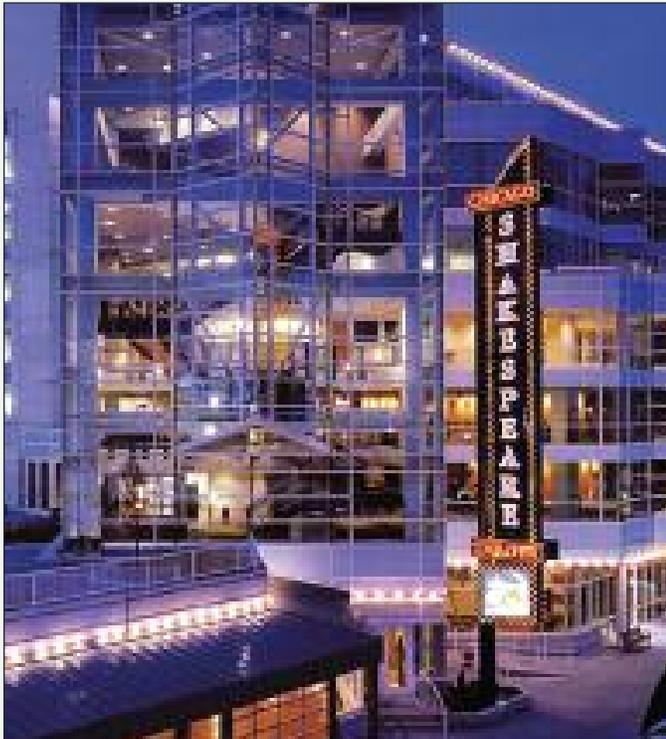
AT11

Shakespeare Theater: The Strange Undoing of Prudencia Hart

Tuesday, October 9

6:30 - 10:30 PM

\$122



Located on Navy Pier, the Chicago Shakespeare Theater is a unique theater in the round! In its 25th season, this Chicago theater company's version of *The Strange Undoing of Prudencia Hart* will prove entertaining. Uptight academic Prudencia's dream-like journey of self-discovery is a Faustian tale, that unfolds among and around the audience.

WEDNESDAY, OCTOBER 10

AT12

Chicago Sweets Tour

Wednesday, October 10

10:00 AM - 2:30 PM

\$95



Do you have a sweet tooth? If the answer is yes, get ready to join us for the sweet tastes, sights and smells of local Chicago sweet spots. We will take a trip down Chicago's sugary super-highway to see just what makes it the candy capital of America. And yes, you can taste your way along the route. Warm up with a delicious cup of hot chocolate from a chocolate café, learn some sugary secrets while sampling and peeking at extraordinary recipes from Chicago candy factories. Stop at a local spice shop to find tasty information about chocolate and other sweet treats. This tour wouldn't be complete without a stop to indulge in Chicago's best cupcakes. Leave your guilt on the bus, this is just a snapshot into this sugary tour that is sure to satisfy all of your cravings. By exploring these diverse neighborhoods, you will witness the sweet Chicago that exists beyond Michigan Avenue! Experience the customs that have shaped Chicago into the culturally rich city that it is today! Includes stops at Hershey's, Ghirardelli, Bobtail Ice Cream and Soda Fountain, More Cupcakes, The Spice House, and The Fudge Pot. Stops are subject to change.

AHEAD.

Science moves forward. Fields evolve. And careers are not static. If you're interested in putting your leadership skills to work, the Congress of Neurological Surgeons is interested in you. The CNS offers the insight, innovation and information that pave the way to your future. hone your leadership skills, advance your education and further your career by joining the one organization focused on fresh ideas and the future of neurosurgery.

Think ahead. We are.

For more information about member benefits or to apply today, visit w3.cns.org/apply.



CNS

Phone: 847-240-2500
Toll Free: 1-877-637-6115
membership@cns.org
www.cns.org

REGISTRATION INFORMATION

REGISTRATION METHODS

For your convenience, you can register and reserve your hotel room via these four methods:

ONLINE:

www.cns.org

PHONE*:

877.585.6001 US & Canada
703.449.6418 International
8:30 AM – 5:00 PM ET
(Not available for ticketed events)

FAX*:

703.502.0257

MAIL*:

CNS Registration and Housing Center
11208 Waples Mill Road
Suite 112
Fairfax, VA 22030

*Allow five business days for Registration and Housing Confirmation. The CNS Registration and Housing Center is not responsible for faxes not received due to mechanical failure or circumstances beyond our control.

CREDIT CARD PAYMENTS

US dollars and drawn on a US bank

- ◆ Visa
- ◆ MasterCard
- ◆ American Express

MATERIALS PICK UP

All materials should be picked up on site at the McCormick Place Lakeside Center.

REGISTRATION RATES	ADVANCE On or before September 6, 2012	After September 6, 2012
CNS Active Member (Active, International, Transitional, Vista)	\$650	\$750
Non-Member (Neurosurgeons, Physicians [MDs, DO, etc.], Non-Physicians [†])	\$875	\$975
Non-Member Neurosurgeon Faculty	\$650	\$750
Member of Armed Forces	\$475	\$575
CNS Senior Member	\$285	\$385
CNS Resident Member*	\$150	\$250
Non-Member Resident*	\$285	\$385
CNS Fellow Member**	\$200	\$300
Non-Member Fellow**	\$300	\$400
CNS Medical Student Member	\$0	\$0
Non-Member Medical Student	\$250	\$350
Allied Health Member	\$400	\$500
Non-Member Allied Health	\$500	\$600
Physician Assistant/Physician Extender Member	\$400	\$500
Non-Member Physician Assistant/Physician Extender	\$500	\$600
Nurse/Nurse Practitioner Member	\$400	\$500
Non-Member Nurse/ Nurse Practitioner Member	\$500	\$600
Spouse/Guest/Child (13 and Over)	\$125	\$125
Resident/Fellow Spouse	\$75	\$75
Child (12 and Under)	\$0	\$0

Non-Member registration categories are open to domestic and international registrants.

[†] Non-Member/Non-Physician category is limited to scientists, engineers, etc. involved in neurosurgical research and/or product development not affiliated with a non-exhibiting company.

* All international Residents must have their Program Director sign the registration form. If registering online, a letter from your Program Director certifying that you are a Resident in a neurosurgical training program accredited by the ACGME and the residency Review Committee for Neurosurgery must be faxed to 703.502.0257 or e-mailed to cns@jspargo.com within one week of completing registration.

** All international Fellows must attach letter from Program Coordinator verifying Fellow status within one week of completing registration.

IMPORTANT DATES TO REMEMBER

September 6

- ◆ Advance Registration Discount and Housing Deadline

September 13 - Cancellation Deadline

All refund requests must be received in writing by 5:00 PM ET on September 13, 2012.

- ◆ \$100 Processing fee will be charged for written cancellation requests prior to the deadline, regardless of cause
- ◆ Course, event and tour tickets will be refunded in full until this deadline
- ◆ **Absolutely, no refunds given after this deadline, regardless of cause**

Cancellation requests accepted via:

E-mail: cns@jspargo.com
Fax: 703.502.0257
Mail: CNS Annual Meeting
CNS Registration and Housing Center
11208 Waples Mill Road, Suite 112
Fairfax, VA 22030

September 17

Any changes to hotel reservations must be made directly with hotel from this date on.

HOTEL INFORMATION

Contact the official CNS Registration and Housing Center to reserve your guest rooms. Hotels will not accept reservations from CNS meeting attendees directly.

Reservations can be made online or via fax, phone or mail. Visit www.cns.org to make your reservation today!

Be sure to complete the entire housing section of the registration form which can be found online at www.cns.org.

HOTEL RESERVATION INFORMATION AND DEADLINES

Hotel reservations are only available to registered CNS attendees. You must first register for the CNS Annual Meeting before making your hotel arrangements – see page TBD. Rooms are subject to availability. Reserve your room by September 6, 2012.

DEPOSITS

A deposit of one night's room and tax is due at the time your hotel reservation is made. This payment must be submitted with your registration fees. Credit cards will be charged in early September. Please make checks payable to applicable hotel and send to CNS Registration and Housing Center at 11208 Waples Mill Road, Suite 112 Fairfax, Virginia 22030. All rooms are subject to applicable state and local taxes. A small portion of your room rate will be used to help defray the cost of registration and housing services. Hotel reservations requested without deposit will not be processed.

HOTEL CONFIRMATIONS, CANCELLATIONS OR CHANGES

Through September 13, 2012

- ◆ All changes and cancellations must be made in writing through the CNS Registration and Housing Center. Please contact cns@jspargo.com
- ◆ Rooms are not transferable.
- ◆ Refunds for deposits will be issued by the CNS Registration and Housing Center if reservation is cancelled.

Beginning September 17, 2012

- ◆ All changes and cancellations must be made directly with the hotel.
- ◆ If cancellation notice is not received according to the hotel policy, the deposit may be forfeited.
- ◆ Check your hotel confirmation and contact the hotel directly for information.

COMPLIMENTARY HOUSING FOR CNS RESIDENT MEMBER ATTENDEES

Complimentary housing at the CNS Annual Meeting is available to a limited number of CNS Resident Members on a first-come, first-served basis.

To be considered for this program, CNS Resident Members must:

- ◆ Register for the CNS Annual Meeting by August 24.
- ◆ Complete a separate CNS Resident Housing Form by August 24. (Included with Resident Member registration materials and can also be found at www.cns.org). This form is to be sent directly to CNS via e-mail to info@1cns.org, fax to 847.240.0804 or mail to 10 North Martingale Road, Suite 190, Schaumburg, IL 60173-2294.
- ◆ All residents enrolled in ACGME approved programs have been automatically given complimentary CNS Resident Membership.
- ◆ If you are not a CNS Resident Member, complete your application by July 27.

Residents who choose to reserve a room through the CNS Registration and Housing Center and are later accepted into the CNS Resident Housing Program are responsible for cancelling their original reservation.

HOTEL ROOM RATES: (Rate includes tax)

	SINGLE	DOUBLE
Sheraton Chicago Hotel & Towers	\$348.01	\$359.65
Fairmont Chicago, Millennium Park	\$324.73	\$324.73
Four Seasons Hotel Chicago - King:	\$436.46	\$436.46
Four Seasons Hotel Chicago - Executive King:	\$494.66	\$494.66
Hyatt Regency McCormick Place	\$359.65	\$359.65
InterContinental Chicago Magnificent Mile	\$324.73	\$324.73
The Peninsula Chicago	\$436.46	\$436.46
The Ritz-Carlton Chicago	\$424.82	\$424.82
Westin Chicago River North	\$336.37	\$336.37

A small portion of your room rate will be used to help defray the cost of housing and registration services.

HOTEL INFORMATION



- 1** Sheraton Chicago Hotel & Towers (Headquarter Hotel)
301 East North Water Street, Chicago, IL 60611
- 2** Fairmont Chicago, Millennium Park
200 North Columbus Drive, Chicago, IL 60601
- 3** Four Seasons Hotel Chicago
120 East Delaware Street, Chicago, IL 60611
- 4** Hyatt Regency McCormick Place
2233 South Martin L. King Drive, Chicago, IL 60616
- 5** InterContinental Chicago Magnificent Mile
505 North Michigan Avenue, Chicago IL 60611
- 6** The Peninsula Chicago
108 East Superior Street, Chicago, IL 60611
- 7** The Ritz-Carlton Chicago
160 East Person Street, Chicago, IL 60611
- 8** Westin Chicago River North
320 North Dearborn Street, Chicago, IL 60654



Fairmont Chicago, Millennium Park
200 North Columbus Drive
Chicago, IL 60601

3 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Restaurants (3)

Concierge: 312.565.6651
Timothy.samples@fairmont.com



Four Seasons Hotel Chicago
120 East Delaware Street
Chicago, IL 60611

4 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor pool and hot tub
- ◆ Restaurant

Concierge: 312.649.2337
Cfs.concierge@fourseasons.com



Sheraton Chicago Hotel & Towers
Headquarter Hotel

301 East North Water Street
Chicago, IL 60611

3 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor pool
- ◆ Restaurants (3)

Concierge: 312.329.6930
Paula.fortney@sheraton.com

HOTEL INFORMATION



Hyatt Regency McCormick Place
2233 South Martin Luther King Drive
Chicago, IL 60616

Adjacent to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor lap pool
- ◆ Restaurants (3)
- ◆ Room service

Concierge: 312.528.6511
Ed.caraway@hyatt.com



The Peninsula Chicago
108 East Superior Street
Chicago, IL 60611

4 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor pool
- ◆ Restaurant (3)
- ◆ Room service

Concierge: 312.573.6530
conciergepch@peninsula.com



Westin Chicago River North
320 North Dearborn Street
Chicago, IL 60654

3 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Restaurant
- ◆ Room service

Concierge: 312.321.7126



InterContinental Chicago
Magnificent Mile
505 North Michigan Avenue
Chicago IL 60611

3.5 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor pool
- ◆ Restaurant
- ◆ Room service

Concierge: 312.944.4100 X8335
concierge.icchicago@ihg.com



The Ritz-Carlton Chicago
160 East Person Street
Chicago, IL 60611

4 miles to McCormick Place Lakeside Center

Amenities Include:

- ◆ High Speed Internet (complimentary to CNS guests)
- ◆ Fitness center (complimentary to CNS guests)
- ◆ Business center
- ◆ Concierge services
- ◆ Indoor pool
- ◆ Restaurant
- ◆ Room service

Concierge: 312.573.5111
Concierge.rcchicago@fourseasons.com

THANK YOU FOR YOUR CONTINUED SUPPORT OF THE CNS!

The CNS thanks you for your support in reserving your guest room through the official CNS Housing and Registration Center. The CNS, in negotiating contracts with convention centers and hotels, must commit to a minimum number of guest rooms. This commitment helps guarantee the availability of meeting space and helps control the cost of the meeting. A history of high utilization of our room block enables the CNS to negotiate better room rates for future meetings.

Race to Chicago!



The 2012 Chicago Marathon lands on the same weekend as the 2012 CNS Annual Meeting. Make your travel arrangements today for the best choice of flights, hotels and premier educational opportunities. Get to Chicago early to participate in numerous Practical Courses on Saturday and Sunday, Saturday evening's Dinner Seminar , as well as Sunday's Multidisciplinary Session, General Scientific Session and Opening Reception!

Catch Some of the Excitement of the Marathon - Register Today!

GENERAL INFORMATION

AIRLINES

The CNS Annual Meeting hotels and the McCormick Place Lakeside Center are located approximately 20 miles from O'Hare International Airport (ORD) and 10 miles from Midway International Airport (MDW).

Taxis are readily available outside of baggage claim at O'Hare International Airport and Midway International Airport.

AMERICANS WITH DISABILITIES ACT

Wheelchairs, scooters, information booths, designated parking, TDD telephones and other services are available for visitors with disabilities. For wheelchair/electric scooter rental, please contact ScootAround, Inc. at 888.441.7575 or by visiting their website at www.scootaround.com/rentals/m/mccormickplace to reserve in advance.

Please let us know if, under the ADA, you require special accommodations or services in order to attend the 2012 CNS Annual Meeting. We want to ensure that no individual with a disability is excluded because of the absence of auxiliary aids and services. Your requirements should be sent directly to the CNS Housing and Registration Center at: cns@jspargo.com or call 877.585.6001. Please provide any requests at least 30 days prior to the Annual Meeting to guarantee accommodation.

ATTIRE

Professional attire is appropriate at the Annual Meeting and the Exhibit Hall. Some Chicago restaurants require coats and ties for gentlemen. Please check each restaurant's policy when making reservations.

AUXILIARY TOURS, OPTIONAL EVENING EVENTS AND CNS SOCIAL ACTIVITIES

Auxiliary Tours provide spouses and guests with an opportunity to explore the "best of the best" attractions in the Chicago area.

All tours will depart from the Sheraton Chicago Hotel and Towers. Please arrive 15 minutes prior to the scheduled departure time.

All registered CNS Annual Meeting spouses and guests are invited to visit the Spouse Hospitality Suite, Monday through Wednesday for continental breakfast from 8:00 – 10:30 AM. (Please note that admittance to the Spouse Hospitality Suite is by Spouse/Guest badge only.) The Spouse Hospitality Suite is located in Parlor C at the Sheraton Chicago Hotel and Towers.

Optional Evening Events are available to all registered attendees and our corporate supporters. We encourage you to share this information with your spouse or guest for their convenience when registering.

CHILDREN

Children over the age of 12 may register as a guest at the Guest Registration fee. This will allow full participation in Auxiliary Program activities. (Please note that children under the age of 18 are not allowed in the Exhibit Hall.)

Should you require babysitting services, please contact the concierge desk at your hotel. The CNS has no control over and assumes no responsibility for the care that is provided through hotels for these services. This information is provided solely to assist participants in identifying possible sources for childcare.

CLIMATE

Chicago is a beautiful city in the fall. October temperatures average a high of 63 degrees and a low of 46 degrees.

COURSE AGENDAS AND FACULTY

Agendas are occasionally subject to change. As we continue to strive to improve the quality of your educational experience, the CNS may substitute faculty with comparable expertise when necessary.

DIGITAL POSTERS

Digital Posters will be displayed electronically, Monday – Wednesday in the Exhibit Hall, and can be searched by author, topic or keyword.

DISCLAIMER

The material presented at the 2012 Annual Meeting has been made available by the Congress of Neurological Surgeons 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 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 materials exhibited by the CNS or by its Committees or Affiliates.

The CNS disclaims any and all liability for injury or other damages resulting 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.

No reproductions of any kind, including audiotapes and videotape, may be made of the presentations at the CNS Annual Meeting. The CNS reserves all of its rights to such material, and commercial reproduction is specifically prohibited.

EXHIBIT HALL

- Monday, October 8**
9:00 AM – 3:30 PM
- Tuesday, October 9**
9:00 AM – 5:00 PM
- Wednesday, October 10**
9:00 AM – 2:00 PM

Admittance to the Exhibit Hall is by the CNS name badge only. Children under the age of 18 are not allowed in the CNS Exhibit Hall.

FUTURE MEETINGS

- 2013: San Francisco, California**
October 19-23
- 2014: Boston, Massachusetts**
October 18-22
- 2015: New Orleans, Louisiana**
September 26-30

HOUSING INFORMATION

See pages 62–64.

ITEMS INCLUDED IN REGISTRATION FEE

- ◆ General Scientific Sessions
- ◆ Original Science Program
- ◆ Special Courses
- ◆ Consensus Sessions
- ◆ Section Sessions
- ◆ Exhibit Hall and Beverage Breaks

One Ticket to:

- ◆ Opening Reception on Sunday, October 7
- ◆ Snack Break with Exhibitors in Exhibit Hall on Tuesday, October 9

(Note: Children under the age of 18 are not allowed in the Exhibit Hall.)

MEMBER SERVICES BOOTH

The CNS Member Services Booth is located in the Exhibit Hall. Staff members will be available to assist you and answer any questions you may have about the CNS or your CNS Membership and its member services.

PRESS REGISTRATION

Credentialed members of the media may register to attend the conference and are required to provide CNS staff with a copy of their press credentials and letters of assignment. Qualified media outlets must be represented by editorial staff, not publishers or advertising or marketing staff. Media interested in attending should contact the CNS Marketing Communications staff at 847-240-2500 for instructions on registering. Only two registrations are allowed per media outlet.

REGISTRATION INFORMATION

- Saturday, October 6**
7:00 AM – 5:30 PM
- Sunday, October 7**
7:00 AM – 7:00 PM
- Monday, October 8**
6:30 AM – 4:30 PM
- Tuesday, October 9**
6:30 AM – 4:30 PM
- Wednesday, October 10**
6:30 AM – 3:00 PM

RESTAURANT RESERVATIONS

Contact your hotel concierge in advance to secure popular restaurant reservations. (See hotel information for contact phone and e-mail information.)

SHUTTLE SERVICES

Shuttle service to McCormick Place Lakeside Center will be available from all official CNS hotels, with the exception of the Hyatt Regency, which is adjacent to McCormick Place. A shuttle schedule will be posted at the hotels and convention center.

SPEAKER READY ROOM

All speakers and abstract presenters should visit the Speaker Ready Room at the McCormick Place Lakeside Center prior to their presentations.

- Saturday, October 6**
7:00 AM – 5:30 PM
- Sunday, October 7**
7:00 AM – 6:00 PM
- Monday, October 8**
6:30 AM – 3:00 PM
- Tuesday, October 9**
6:30 AM – 3:00 PM
- Wednesday, October 10**
6:30 AM – 3:00 PM

VISA INFORMATION

The State Department of the United States encourages international participants to apply for their visas as early as possible – at least 3 months before the meeting. Some consulates may have backlogs in scheduling visa interviews so applicants should first contact the consulate to find out how long the wait is for an interview. Visa wait times are available at: http://travel.his.com/visa/temp/wait/wait_4638.html.

For information on the Visa process, please visit www.nationalacademies.org/visas. The U.S. State Department's visa site contains the official information on the visa application process: <http://travel.his.com/visa>.

2012 CNS ANNUAL MEETING EXHIBITORS

AANS/CNS Joint Sections
Accelitech
Ad-Tech Medical Instrument Corporation
Advanced Biologics
Allen Medical Systems
AlloSource
Alpha Omega
Amedica Corp.
American Association of Neurological Surgeons
American Surgical Company
Apex Medical, Inc.
Aspen Medical Products
ASSI-Accurate Surgical
Atlas Spine
Baxano, Inc.
Baxter Healthcare
Biomet Microfixation
Biomet Spine & Bone Healing Technologies
BK Medical Systems Inc.
Blue Chip Surgical Center Partners, LLC
Boss Instruments Ltd
Boston Scientific
Bradshaw Medical, Inc
Brainlab, Inc.
Buxton BioMedical
Cadwell Laboratories, Inc.
Carl Zeiss Meditec
Centers for Medicare and Medicaid Services
Centinel Spine, Inc.
CMF Medicon
Codman
Congress of Neurological Surgeons
ContainMed, Inc.
Cosman Medical
Covidien
DePuy Spine
Designs For Vision, Inc.
Domain Surgical
Dynamic Disc Designs Corp.
Eisai, Inc.
Elekta
Elliquence LLC
Elsevier Inc.
Esaote North America
Exactech, Inc.
Fehling Surgical Instruments, Inc.
Globus Medical
Harlequin Recruiting
Harvest Technologies Corp.
Hemedex, Inc.
Hitachi Aloka Medical
Hospital Corporation of America (HCA)

IMRIS
Industrial Pharmacy Management
Inion Inc.
Innerspace, Inc.
Innovasis, Inc.
inomed Medizintechnik GmbH
Integra
Journal of Neurosurgery
K2M, Inc.
Kaiser Permanente - SCPMG
Karl Storz Endoscopy-America, Inc.
Kelyniam Global, Inc.
Kilgore International INC
Kinamed, Inc.
Kirwan Surgical Products, LLC
KLS Martin Group
Kogent Surgical
Koros USA, Inc.
LDR
Leica Microsystems, Inc.
Life Instrument Corporation
Lippincott Williams and Wilkins - WKH
Market Access Partners
Mary Washington Healthcare
MASEP Infini Medical Science Technology Dev. Co. LTD
Mazur Marketing
Medtech
Medtronic
MEI Healthcare Group
MicroVention
minSURG Corporation
Mizuho America, Inc.
Monteris Medical, Inc.
MRI INTERVENTIONS INC.
Nadia International, Inc.
National Research Council Canada
NEOS Surgery, S.L.
Neuro Alert Monitoring Services
NeuroLogica
NeuroPoint Alliance (NPA)
New World Rarities, Ltd.
NICO Corporation
NIHON KOHDEN AMERICA
North American Neuromodulation Society
North American Spine Society
NovaBone Products LLC
NSI
NuTech Medical
Oncology Data Systems
Orthofix, Inc.
OsteoMed
OsteoSymbionics LLC
Paradigm Spine, LLC

Peachtree Financial Solutions
Penumbra, Inc.
PeriOptix, Inc.
Pfizer Injectables
Piezosurgery Incorporated
Pioneer Surgical
PMT Corporation
Pro Med Instruments
Pro-Dex, Inc.
ProNerve, LLC
Renishaw
Riverside Health System
Rose Micro Solutions
RosmanSearch, Inc.
RTI Biologics, Inc.
Scanlan International, Inc.
Sentio, LLC
SheerVision
SI-BONE, Inc.
Siemens Healthcare
Sonowand
Sophysa USA, Inc.
Spinal Elements, Inc.
SpinalMotion, Inc.
Spine Wave
SpineFrontier, Inc.
Spineology Inc.
SpineView, Inc.
St. Jude Medical
Steute Meditech Inc
Stryker
Surgical Acuity
Surgical Theater LLC
SurgiTel/General Scientific Corporation
Synthes
TeDan Surgical Innovations
The Brain Aneurysm Foundation
The New York Times
Thieme Medical Publishers
ThinkFirst National Injury Prevention Foundation
Thompson Surgical Instruments
Transonic
TrueVision Systems, Inc.
UFSK-International OSYS GmbH
Varian Medical Systems
VG Innovations, LLC
Visionsense Inc.
Vycor Medical, Inc.
Weatherby Healthcare
Wenzel Spine, Inc.
X-spine Systems, Inc.
Ziehm Imaging, Inc.
Zimmer Spine

as of 6/1/12