

News for members of the Western Neurosurgical Society

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The Western Neurosurgical Society

**Newsletter** 

Autumn 2014

## 2014 Annual Meeting in Sun Valley

The 60th annual meeting was marked by an excellent scientific program, fine food and a delightful venue. The meeting was attended by 63 neuro-surgeons plus other professional guests, many spouses and a clutch of youngsters.

The scientific program was informative and provocative and highlighted by the Ablin lecture by Jon Robertson from Memphis, the Cloward lecture by Andres Lozano from Toronto, the President's address by Rich Wohns (on Web site in President section)) and a well attended last day symposia on TBI and medico-legal issues.

Perfect weather accented an excellent opening reception with an extensive buffet dinner and exclusive seating for the ice skating show which capped the evening.

The local night was held at pleasant picnic grounds and marked by interesting interpretation of Western attire by the attendees and again an extensive BBQ buffet. It was a casual, congenial and collegiate evening.

The annual members business meeting resulted in the adoption of an extensive by-laws revision, the election of four new members (noted elsewhere in this newsletter) and the election of Linda Liau as President-Elect, Tom Scully as VP and Moose Abou-Samra as Historian.

The banquet featured super food and presentations of a brief run through the 60 year history of the Society, an excellent video by Marvin Bergsneider of an interview with Eugene Stern, the sole remaining WNS founder and a short history of the WNS gavel presented to the Society by Dwight Parkinson in 1979. The dance band was one of the best ever heard at our banquets and which was put to bed near eleven o'clock by a hardy crowd of 20 or so. For a registration fee of \$850 per couple, the food, fun and science was a steal.

The 60 year history of the WNS and the Stern video plus the gavel info are all on the WNS Web site (westnsurg.org) in the History section.



Fun at the BBQ. (Clockwise from L: President Rich Wohns, Don Olson, Marie Wohns, Sage Wohns, Guests Larry Levy and Diana Brambrinck, Glenna and Ben Blackett)

# Sponsors/Exhibitors at the 2014 meeting

The following companies chose to exhibit and the exhibitor fees they pay help support the meeting. Particular thanks to <u>Medtronic</u> for their support and for making available their on-site training module. For those who are arithmetically challenged, it is not possible to provide the scientific session and 3 breakfasts and 3 dinners and only charge \$425 per attendee without the support of these fine companies.

### 1. Medtronic—Platinum sponsor

- 2. Spine Wave—Gold sponsor
- 3. Nexstim—Gold sponsor
- 4. Mazor Robotics, Inc-Gold sponsor
- 5. Varian Medical—Silver sponsor
- 6. The Medicines Company—Silver sponsor
- 7. K2 Medical—Silver sponsor
- 8. Arbor Pharma—Silver sponsor
- 9. LDR—Silver sponsor
- 10. Amedica Corp—Silver sponsor
- 11. Biomet—Silver sponsor
- 12. Stryker—Silver sponsor
- 13. RosmanSearch
- 14. BrainLab
- 15. Imris
- 16. DePuy Synthes
- 17. Codman Neuro
- 18. Visualase Inc.
- 19. KLS Martin, LP
- 20. Globus Medical
- 21. NICO Corporation
- 22. OsteoMed
- 23. Bacterin
- 24. Monteris Medical

# Sun Valley Meeting photo album and program now on Web site

We have posted about 50 pictures from the 2014 WNS meeting in Sun Valley on our Web site <u>www.westnsurg.org</u>. Click on Albums and then on the 2014 link.

If you see a picture you would like to have a copy of, email <u>rws-avopro@sbcglobal.net</u> identifying the picture(s) and the jpeg files will be sent to you via email.

For those members who did not attend the meeting but would like to have access to the complete program booklet which includes the names, addresses, phone numbers and other info on all WNS members, the booklet is posted as a pdf file on the Web site in the Members Only section. The password to access the Members Only section is "Western" with the W capitalized.

# **IN MEMORIUM**



**Charles** 

Needham October 14, 1936-November 15, 2013

Charles W. Needham was born in Brooklyn, New York. He received his undergraduate degree from Wagner College in Staten Island, New York and his medical degree from Albany Medical College. Following medical school, Charlie completed his residency in neurosurgery under

### **ELDON FOLTZ**

March 28, 1919 - August 10, 2013



Eldon Leroy Foltz, was born in Fort Collins, CO, grew up in East Lansing, Michigan where his father was Professor of Electrical Engineering at Michigan State University. He graduated from Michigan State University in 1941 (B.S., Magna Cum Laude), and then the University of Michigan Medical School in 1943 (M.D.)



Michael Mason October 30, 1928-July 3, 2014

Michael Stanley Mason was born in Spokane, the second child of Croatian immigrants, Steve and Ana Murgic Masan. After his mother's death, Michael spent most of his youth in a Catholic orphanage in Spokane. While a student at North Central High School, he worked full-time at

Dr. Wilder Penfield at the Montreal Neurological Institute. Over a career spanning 50 years, Charlie practiced as a neurosurgeon in Montreal, Los Angeles, Tucson and Connecticut. He held academic positions at the David Geffen School of Medicine of UCLA, the Yale School of Medicine and the University of Arizona College of Medicine and taught medical students and residents throughout his career. He authored four medical textbooks and was extensively published in regional and national medical journals. He also invented a morphinebased analgesic paste to provide sustained relief from post-operative pain. Charlie is survived by his wife, Constance T. Needham; his children, Susan, Andrew, Jennifer, Sarah and Benjamin; his sister, Marion Krupp and brother-inlaw, Fred Krupp; his

on a combined scholar program with Michigan State. Eldon was then directly commissioned as Lieutenant into the U.S. Navy Corps in the south Pacific theater for 30 months on active duty, including lwo Jima and Okinawa. After one year of general surgery residency at the University of Michigan, neurosurgery residency at **Dartmouth Medical School** was followed by completion of the residency at the University of Louisville in 1950. Shortly thereafter he joined Art Ward's nascent Neurosurgery program at the University of Washington in Seattle. He became a full Professor in Neurological surgery at the University of Washington in 1965. Pediatric neurosurgery and hydrocephalus became an intense interest while in charge of the pediatric neurosurgical service at Children's Hospital, Seattle. **Controlled studies of shunting** early in its use for

Controlled studies of shunting early in its use for hydrocephalus were carried out with the Congenital Defects Clinic. Hydrocephalus ICP/ CSF pulse aberrations became the focus of the rest of his clinical research projects and career. While in Seattle he helped train dozens of neurosurgeons many of whom are WNS members. the railroad station in order to save money for college. Once enrolled at Washington State **College**, Michael earned tuition money by working on a road construction crew and as a hod carrier. He loved his time at Washington State, where he studied chemistry and, most importantly, met Cecilia "Mitzi" Moe, from Stanwood. Wash. Mike and Mitzi got married in 1949. They became the loving parents of three children, Stephanie, Michael and Gregory. After graduating from **Washington State** with a master's degree in chemistry, Michael attended the University of Oregon **Medical School in** Portland and did his neurosurgery training there. After service as a U.S. Army surgeon in Vietnam, Dr. Mason began practicing neurosurgery at **Good Samaritan** 

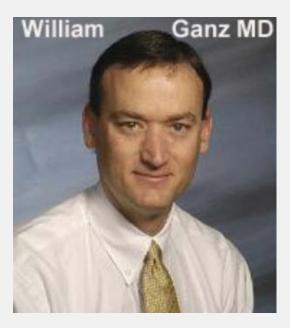
cousin, Michael Fallabala and his ten grandchildren, Hannah, Henri, Emma, Luc, Jack, Andrew, Zoe, Zackary, Amelia and Kai. Charlie loved philosophy, as well as history, teaching and writing. Charlie was a kind and generous man. He will be deeply missed by the many hundreds of people whose lives he touched, including his patients, colleagues, students, friends and family. Charlie joined the Western in 2005 and was an active member at the time of his death.

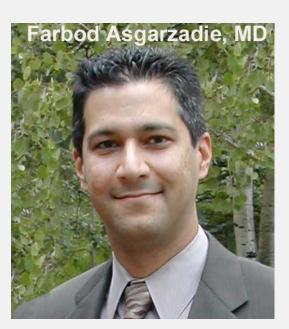
In 1969, he was appointed Chairman of Neurosurgery at the University of California at Irvine Medical School. In 1989, he became Emeritus Professor of Neurological Surgery. Eldon joined the Western **Neurosurgical Society in 1956** and served as its President in 1977. He and his wife Kay were near constant attendees at Western meetings and Eldon was a good tennis player competing in numerous tournaments at the annual meetings. One of Eldon's favorite pastimes was sailboat racing competing while a member of the Capistrano Bay Yacht Club out of Dana Point, CA where he acquired 99 trophies.

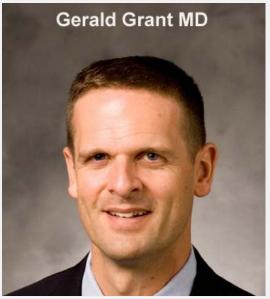
His infectious laugh, unique sense of humor and smile will be missed by any and all who knew him. **Hospital in Portland** in 1963. He remained at Good Samaritan for 50 years and treated over 20,000 patients. He retired from surgery two years ago, but he and Mitzi kept the office open and he kept seeing patients until the last day of his life. He took great pride in the accomplishments of his children and grandchildren, and loved to spend time with them working in the yard, golfing and helping them with their math homework. He had a lifelong passion for science, especially optics, and held a patent for a surgical microscope. He will be remembered for his tireless work ethic and brilliance, but more importantly for his love of family, generosity, dry sense of humor and compassion for the poor and vulnerable. Michael joined the Western in 1971 and remained an active

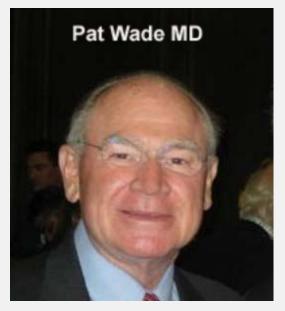
member until his death.

# **New Members for 2014**









### William Ganz, MD

William Ganz was born in Spokane, WA, the son of a family physician who provided him the inspiration to a career as a physician. He graduated from the University of Santa Clara with a BA in Biology, then went on to Creighton University School of Medicine to complete his MD in 1985. Dr. Ganz received his neurosurgical training under Drs. Shelly Chou and Roberto Heros at the University of Minnesota which was completed in 1991. He went on to a faculty position at Wayne State University where he also served as Chief of Trauma at Detroit Receiving Hospital. In 1993, he returned to his alma mater and served as Assistant Professor at the University of Minnesota, and Chief of Neurosurgery at St. Paul Ramsey

Medical Center. He moved to private practice in Coeur d'Alene, Idaho, in 2001 where he has maintained a private solo neurosurgical practice. He is currently the Chairman of Surgery at the Kootenai Medical Center, and also serves as its Director of Neurosciences. He recently initiated the radiosurgery and deep brain stimulation programs there.

Dr. Ganz has served on many committees including The American College of Surgeons Committee on Trauma as a permanent member, and the Executive Committee of the AANS/CNS Joint Section on Neurotrauma and Critical Care. In addition, he maintains an active interest in neurotrauma care, and has performed funded research in this area. He also is actively involved in the state of Idaho, serving on its Board of Medicine, and in developing a state-wide trauma system for its citizens.

Dr. Ganz is married to Luann and has four children. He enjoys mountain biking, hiking, and is an aficionado of ancient Greek and Roman history. He has also participated in medical mission trips to Ethiopia and the Dominican Republic.

#### Farbod Asgarzadie, MD

Farbod Asgarzadie was born and raised in Berlin, Germany, by Iranian immigrants. His family moved to California at age 10. He attended UC Berkeley for his undergraduate studies. Dr. Asgarzadie completed his medical training at the University of Chicago, Pritzker School of Medicine, in 1999. During medical school, he met his wife who was training in Radiology. He received his neurosurgical training at Loyola University Medical Center, and Complex Spine Fellowship training at UCLA, which was completed in 2007. He practiced in San Bernardino and Redlands, CA, before joining the medical staff at Jerry L. Pettis Memorial Veterans Hospital in Loma Linda, CA. Since 2007, Dr. Asgarzadie has been on the faculty at Loma Linda University, first as Assistant Professor, then as Associate Professor in 2012, and currently serves as the Interim Chairman of Neurosurgery.

His clinical, academic, and research interests remain in the world of spine surgery, and he has been a contributor to research in minimally invasive techniques, nucleus replacement, artificial discs, spinal cord injury, and surgical site infections. He is a peer reviewer for the International Journal of Spine Surgery and the Congress of Neurological Surgery: Neurosurgery Watch Panel. In addition to his membership in the AANS, CNS, NASS, and Society of Minimally Invasive Spine Surgery, he is a Regional Director for the California Association of Neurological Surgeons.

Dr. Asgarzadie is fluent in English, German, and Persian. He and his wife, Allie, practice at Loma Linda University Medical Center, and are the parents to Roxana and Yasmin, ages 4 and 6 respectively.

#### **Gerald Grant, MD**

Gerald Arthur Grant is a native of Rockaway, New Jersey. He graduated magna cum laude with a Bachelor of Arts degree from Duke University in 1989 and then completed his medical education at Stanford University School of Medicine in 1994. He was a neurosurgery intern and resident at the University of Washington with Dr. Richard Winn from 1994-2001. During his dedicated research time, he was awarded an American Heart Association Postdoctoral fellowship as well as an Individual National Research Service Award from the NIH. Following his chief residency, he completed his Pediatric Neurosurgery Fellowship at Children's Hospital in Seattle from 2001-2002.

In 2002, Dr. Grant fulfilled his commitment with the United States Air Force as part of a Health Professions Scholarship Program. He was Chief of Neurosurgery at Wilford Hall Medical Center, Lackland Air Force Base Texas. He was the USAF neurosurgical Consultant for Aerospace medicine from 2003-2006. Dr. Grant deployed to Landstuhl Regional Medical Center, Germany and Balad Air Base, Iraq, as Chief of Neurosurgery, in support of Operation Iraqi Freedom. Dr. Grant attained the rank of Lieutenant Colonel and was awarded a Meritorious Service Medal prior to his separation. He was then appointed as Associate Professor of Neurosurgery and Pediatrics with tenure at Duke University.

He is a Diplomat of the American Board of Neurological Surgery and is also board certified in Pediatric Neurosurgery by the American Board of Pediatric Neurological Surgery. He has a specialized clinical interest in pediatric brain tumors, epilepsy, and trauma. His laboratory efforts focus on molecular characterization of the blood-tumor barrier previously funded by the AANS (NREF grant) as well as a Career Development Award from the NCI (Spore-Duke).

Dr. Grant moved to Stanford in August 2013 and was recently appointed as Division Chief of Pediatric Neurosurgery at Stanford University on September 1, 2014. He is married to Nicole and has 3 children, Colin (14), Rachel (12), and Elliot (10). His outside interests include tennis and Duke Basketball.

#### Patrick J. Wade, MD

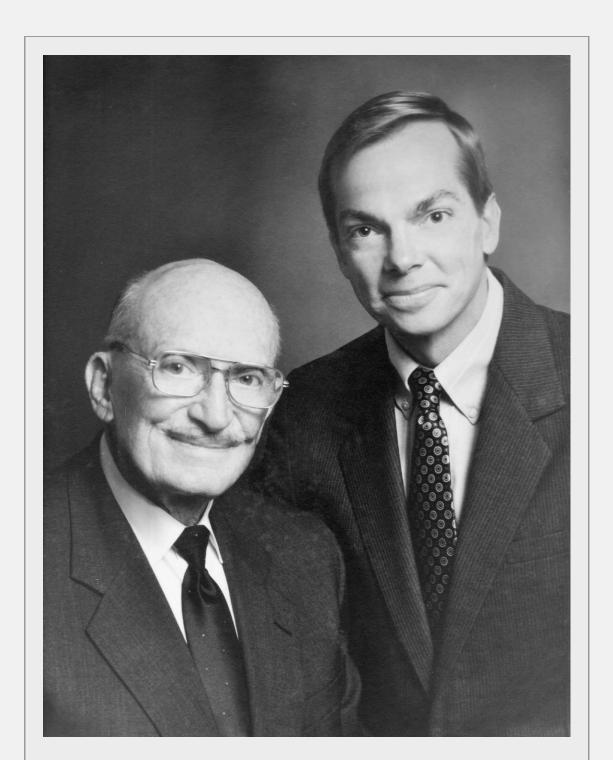
Pat Wade seems to like Glendale, California. He was born there in 1941 and has been there ever since save for a tour of duty with the USN on the USS *Niagara Falls* in 1969. He got his BS from Loyola in LA, his MD from USC, did his internship at LA-USC Medical Center and did his residency at USC graduating in 1975 and has been in private practice in Glendale to this day. He is married to Christina lo these 48 years and they have produced two sons, Matthew and Thomas and a daughter Theresa.

To say that Pat has been involved in his community, both geographical and vocational, is a severe understatement. He has been a CMA delegate for 18 years and is a Board member of the CMA PAC and

serves on the CMA Professional Liability Committee and is Vice-Chairman of the Los Angeles County Medical Association PAC. He has served as President of LACMA, the LA Academy of Medicine, the Glendale Symphony Association, the Cooperative of American Physicians Federal PAC and the California Association of Neurological Surgeons.

He enjoys Gourmet wining and dining, a lot of reading and spending time at his Condo in Maui, where not surprisingly he has served as President of the Condo Owners Association.

Most new members of the Western are young or mid-age turks. It is a nice departure to bring on board a very seasoned senior neurosurgeon who should have become a Western member long ago.



# Kerry Bingham Cloward

Kerry Cloward died at home in Honolulu on July 21, 2014 at age 69 after a brave battle with a metastatic renal cell carcinoma. We remember Kerry Cloward fondly not only because of Ralph but also because of Kerry.

Cloward is a household name for us all. Not much can be said about Ralph Cloward and his genius that has not been already said. Each of us however has a treasured memory. This writer recalls Ralph dancing the night away with many of the ladies of the Western. After his beloved Flossie died, he was never short of dance partners: the ladies of the Western lined up to dance with him. And as he did everything in his life, he danced very well: he was in fact an amazing dancer.

Kerry was born in Honolulu on March 27, 1945 to Florence Emma and Dr. Ralph Bingham Cloward. Kerry was an accomplished individual. He graduated from the University of Utah in 1967 with a B.S. in Management. He attended Officers Candidate School in Newport, Rhode Island and served as a Lieutenant in the U.S. Navy during the Vietnam War. He became a Certified Public Accountant in 1977 and earned an MBA at the University of Hawaii in 1980.

Kerry was a dedicated family man who was enormously proud of his wife Linda, his sons Christopher and Geoffrey, his daughters Kimberly and Kelly and three grand daughters. He was a kind man with an uplifting humor. He also was a loyal friend and a generous man. He considered members of the Western Neurosurgical Society as close friends, and attended many of our meetings, not only as an exhibitor. Many of our members considered him a personal friend. He provided the initial endowment for the Cloward Medal, established in 2001 in honor of his late and inimitable father. And he continued to support this endowment for as long as he could.

After his diagnosis with cancer he continued to lead an active life and to enjoy every minute: playing golf, kayaking, working in the yard, running his businesses. He was thrilled to celebrate the return of daughter Kelly from her Mormon mission in Geneva, Switzerland, the birth of two granddaughters, and the marriages of son Chris in November 2011 and daughter Kimberly in August 2012. His immediate family and his two sisters Kathleen Sattler and Karen McGregor survive Kerry. A grandson, Logan, was born to daughter Kimberly and husband Jeff Drown a month after Kerry's death.

Kerry and Ralph were very close: they did everything together, including playing golf, jogging, and attending church services. It is obvious that Kerry learned from Ralph his love of teaching other surgeons and his dedication to the Western Neurosurgical Society. Together, Ralph and Kerry founded Cloward Instrument Corporation and Surgical Equipment International, companies that brought to the global market, and all of us, the beautifully designed and innovative spinal instruments conceived by Ralph Cloward to facilitate doing his groundbreaking operations that changed the practice of neurosurgery as we know it. Kerry viewed the success of these companies as a tangible validation of Ralph's genius. Linda will continue to manage the companies and carry out the Cloward tradition.

We will miss Kerry and his family, but we will never forget them.



Dwight Parkinson, MD 1916-2005

#### THE DWIGHT PARKINSON GAVEL OF THE WESTERN NEUROSURGICAL SOCIETY

Donald J. Prolo, MD

Professional societies, like families, often have traditions and transferable legacies over time among its leaders. For example the American Association of Neurological Surgeons, originally named The Harvey Cushing Society by its founders, annually transferred the Cushing Cigarette Box to its current president. In Scottsdale, Arizona in September 1979, the honored guest of the Western Neurosurgical Society was Dwight Parkinson, MD, Head, Department of Neurosurgery, The University of Manitoba Faculty of Medicine, Winnipeg, Manitoba.

Doctor Parkinson on that occasion presented then WNS President Donald B. Freshwater MD with a gavel and base plate he carved on a lathe from oak wood rescued from the Royal College of Surgeons Building in Ottawa, the capital of Canada. This Parkinson Gavel was subsequently transferred to thirty incoming Presidents of the WNS annually at the Formal Banquet over the years 1979-2010. Because of usage and wear the gavel required total refinishing in 2001. In 2010 our highly respected WNS President and friend, Doctor L. Philip Carter, succumbed midyear from malignancy, and the Parkinson Gavel was lost before passing to his successor.

Doctor Parkinson was the original skull base neurosurgeon. After meticulous anatomical studies he performed direct closure of carotid-cavernous fistulas under circulatory bypass and hypothermia through the eponymous Parkinson triangle at the base of the brain. This triangular area of approach is formed above by cranial nerves 3 and 4, below by cranial nerves 5 (ophthalmic division) and 6, posteriorly by the edge of the tentorium. At the 1979 Western Annual Meeting he delivered papers on *Intraoperative Serial Angiography, Medical Contributions of a Non-Medical Genius and Concussion*. In the latter paper he demonstrated that despite multiple severe concussions well documented on movies he projected, famous heavyweight fighters subsequently enjoyed notable carriers in business pursuits, in distinct contrast with contemporary understanding of the damaging effects of multiple concussions and post-traumatic encephalopathy.

That 1979 Western Annual Meeting in Scottsdale had another exceptional memory. In the room adjacent to the meeting site the national meeting of Amway salespersons was being held, characterized by vociferous chanting which overpowered and interrupted Western speakers, including Dwight Parkinson. Despite these perturbations Doctor Parkinson conferred upon the Society three excellent papers and a treasured gavel he skillfully created and which endured over three decades.

### **WNS Members in Print**

#### JNS—July 2014

 Andrew S. Little, M.D. Comparative inpatient resource utilization for patients undergoing endoscopic or microscopic transsphenoidal surgery for pituitary lesions
 Marvin Bergsneider, M.D.and Neil A. Martin, M.D. Analysis of 30-day readmissions among neurosurgical patients: surgical complication avoidance as key to quality improvement

#### JNS—August 2014

**Mitchel S. Berger, M.D.** Quantifying accuracy and precision of diffusion MR tractography of the corticospinal tract in brain tumors

Kim J. Burchiel, M.D. Letter to the Editor: Value-based neurosurgery and microvascular decompression Neil A. Martin, M.D. Response to above

#### JNS—September 2014

**Neil A. Martin, M.D.** Value-based neurosurgery: measuring and reducing the cost of microvascular decompression surgery

#### JNS-Peds July 2014

Michael W. McDermott, M.D., Michael T. Lawton, M.D. Stereotactic radiosurgery at a low marginal dose for the treatment of pediatric arteriovenous malformations: obliteration, complications, and functional outcomes

#### JNS-Spine July 2014

**Praveen V. Mummaneni, M.D.** Co-author on Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine--17 articles.

#### JNS-Spine August 2014

Christopher I. Shaffrey, M.D. Editorial: Medical management Christopher I. Shaffrey, M.D. Editorial: Depression and outcome Christopher I. Shaffrey, M.D. Surgical treatment of pathological loss of lumbar lordosis (flatback) in patients with normal sagittal vertical axis achieves similar clinical improvement as surgical treatment of elevated sagittal vertical axis

#### JNS-Spine October 2014

Praveen V. Mummaneni, M.D. Clinical and radiographic analysis of an artificial cervical disc: 7-year followup from the Prestige prospective randomized controlled clinical trial

**Praveen V. Mummaneni, M.D.** The effects of smoking on perioperative outcomes and pseudarthrosis following anterior cervical corpectomy

Christopher I. Shaffrey, M.D. Editorial: Dynamic stabilization

**Christopher I. Shaffrey, M.D.** Results of the AANS membership survey of adult spinal deformity knowledge: impact of training, practice experience, and assessment of potential areas for improved education

#### Neurosurgery August 2014

Martin, Neil; Demystifying Process Mapping: A Key Step in Neurosurgical Quality Improvement Initiatives Lawton, Michael T.; MacDonald, Joel; Commentary: Unruptured Brain Arteriovenous Malformations: What a Tangled Web They Weave

#### Neurosurgery October 2014—Supplement 4

**Ellenbogen, Richard G.** Accelerating Progress on the Road to Safer Sports: Based on Remarks of NFL Commissioner Roger Goodell in the Neurosurgical Society of America (NSA) Medal Lecture **Ellenbogen, Richard G.** Concussion Advocacy and Legislation: A Neurological Surgeon's View From the Epicenter

Berger, Mitchel S. The Long-term Effects of Repetitive Mild Head Injuries in Sports

#### Neurosurgery November 2014

Berger, Mitchel S. Reoperation for Recurrent High-Grade Glioma: A Current Perspective of the Literature

#### Neurosurgery Focus July 2014

Praveen V. Mummaneni, M.D. Traumatic thoracolumbar spinal injury: an algorithm for minimally invasive surgical management

#### Neurosurgery Focus August 2014

**Praveen V. Mummaneni, M.D.** Perioperative morbidity and mortality comparison in circumferential cervical fusion for osteomyelitis versus cervical spondylotic myelopathy

William T. Couldwell, M.D., Ph.D. Response to "Letters to the Editor: Craniopharyngioma adherence to the hypothalamus

#### Neurosurgery Focus September 2014

Steven Giannotta, Michael T. Lawton Introduction. Strategies for management and outcomes of arteriovenous malformations

Michael T. Lawton Editorial. Prenidal aneurysm rupture with posterior fossa AVMs

Michael T. Lawton The natural history of AVM hemorrhage in the posterior fossa: comparison of hematoma volumes and neurological outcomes in patients with ruptured infra- and supratentorial AVMs

**Michael T. Lawton** Treatment and outcomes of ARUBA-eligible patients with unruptured brain arteriovenous malformations at a single institution

Michael T. Lawton Intraoperative arteriovenous malformation rupture: causes, management techniques, outcomes, and the effect of neurosurgeon experience

Neurosurgery Focus November 2014

Neil A. Martin, M.D. Introduction: Health economics and the neurosurgeon
Neil A. Martin, M.D. Editorial: Health care economics in neurosurgery: there is no turning back
Neil A. Martin, M.D. Contemporary health care economics: an overview
Neil A. Martin, M.D. Time-driven activity-based costing: a driver for provider engagement in costing activities and redesign initiatives
Andrew S. Little, M.D. National treatment trends, complications, and predictors of in-hospital charges for the surgical management of craniopharyngiomas in adults from 2007 to 2011
Neil A. Martin, M.D. and Marvin Bergsneider, M.D. Assessing the cost of contemporary pituitary care
The Spine Journal August 2014
John Loeser; Report of the NIH Task Force on Research Standards for Chronic Low Back Pain

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Ciara Harraher, Rick Chua and Moose Abou-Samra assisted with this newsletter.