

# CLINICAL NEUROSURGERY



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THE CONGRESS OF NEUROLOGICAL SURGEONS



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# CLINICAL NEUROSURGERY

*Volume 59*

*Proceedings*

OF THE  
CONGRESS OF NEUROLOGICAL  
SURGEONS

Washington, District of Columbia  
2011

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Health Williams & Wilkins

E PLURIBUS UNUM:  
THE SPECIALTY OF  
NEUROLOGICAL  
SURGERY

*“To strive, to seek, to find,  
and not to yield”* -Alfred, Lord Tennyson

CONGRESS OF NEUROLOGICAL SURGEONS  
**2011 ANNUAL MEETING**  
WASHINGTON, DC  
OCTOBER 1-6, 2011

## Preface

The 61<sup>st</sup> Annual Meeting of the Congress of Neurological Surgeons was held in Washington, DC, from October 1-6, 2011. Volume 59 of *Clinical Neurosurgery* represents the official compilation of the invited scientific manuscripts from the plenary sessions, the Presidential address by Dr. Christopher Getch, and biographic and bibliographic information of the Honored Guest, Dr. Hunt Batjer.

Dr Russell Lonser served as the Annual Meeting Chair and Dr Ganesh Rao, the Scientific Program Chair and both organized a truly outstanding meeting. The theme of this year's Annual Meeting was *E Pluribus Unum: The Specialty of Neurological Surgery*. The CNS was also honored and delighted to partner with the Spanish Neurosurgical Society for this meeting.

Dr Getch delivered a very inspirational and patriotic Presidential address. The above theme was chosen for this meeting because it encapsulated the diversity and broad interests of our profession and reflects the cumulative influence that teachers, colleagues, patients, and experience have on forging our identities as neurosurgeons.

Honored Guest and CNS Past President, Dr Hunt Batjer, Professor and Chairman of Neurosurgery at Northwestern University, gave three scholarly addresses discussing his philosophy about the management of arteriovenous malformations, overcoming a bad outcome, and the future of neurosurgical education in an era of duty hour restrictions. Invited speakers included US Army General Stanley McChrystal, Pulitzer Prize Winning Author, Jon Meacham, and award-winning sports writer, Frank Deford.

It has been my distinct honor and privilege to serve as Editor of *Clinical Neurosurgery* over the year. I would like to thank my outstanding co-editors, Drs Todd Hankinson, Carrie Muh, and Aaron Dumont for their time and dedication to the critical peer review process. I would like to extend a special thank you to Dr Nelson Oyesiku, Editor in Chief of *Neurosurgery*®, for his relentless support and advice. We also thank Michele Lengerman and April Booze from the CNS Headquarters Office for their tireless energy and hard work throughout the year as well as the staff at Lippincott Williams and Wilkins for their patience and continued commitment to *Clinical Neurosurgery*.

We are all still deeply saddened by the untimely death of Dr Christopher C. Getch, past president of the CNS, although we welcome Dr Christopher Wolfa, as the new President of the Congress of Neurological Surgeons and look forward to seeing you all in Chicago.

*Gerald A. Grant, MD  
Editor-in-Chief  
Duke University  
Durham, NC*

*Todd Hankinson, MD, MBA  
Associate Editor  
Aurora, CO*

*Carrie Muh, MD, MS  
Associate Editor  
Durham, NC*

*Aaron Dumont, MD  
Associate Editor  
Philadelphia PA*

## Honored Guests

1952—Herbert Olivecrona  
1953—Sir Geoffrey Jefferson  
1954—Kenneth G. McKenzie  
1955—Carl W. Rand  
1956—Wilder G. Penfield  
1957—Francis Grant  
1958—A. Earl Walker  
1959—William J. German  
1960—Paul C. Bucy  
1961—Eduard A. V. Busch  
1962—Bronson S. Ray  
1963—James L. Poppen  
1964—Edgar A. Kahn  
1965—James C. White  
1966—Hugo Krayenbuhl  
1967—W. James Gardner  
1968—Norman M. Dott  
1969—Wallace B. Hamby  
1970—Barnes Woodhall  
1971—Elisha S. Gurdjian  
1972—Francis Murphey  
1973—Henry G. Schwartz  
1974—Guy L. Odom  
1975—William H. Sweet  
1976—Lyle A. French  
1977—Richard C. Schneider  
1978—Charles G. Drake  
1979—Frank H. Mayfield  
1980—Eben Alexander, Jr.  
1981—J. Garber Galbraith  
1982—Keiji Sano  
1983—C. Miller Fisher  
1984—Hugo V. Rizzoli  
1984—Walter E. Dandy  
1985—Sidney Goldring  
1986—M. Gazi Yasargil  
1987—Thomas W. Langfitt  
1988—Lindsay Symon  
1989—Thoralf M. Sundt, Jr.  
1990—Charles B. Wilson  
1991—Bennett M. Stein  
1992—Robert G. Ojemann  
1993—Albert L. Rhoton, Jr.  
1994—Robert F. Spetzler  
1995—John A. Jane, Sr.  
1996—Peter J. Jannetta  
1997—Nicholas T. Zervas  
1998—John M. Tew, Jr.  
1999—Duke S. Samson  
2000—Edward R. Laws, Jr.  
2001—Michael L. J. Apuzzo  
2002—Volker K. H. Sonntag  
2003—Julian T. Hoff  
2004—Arnold H. Menezes  
2005—Roberto C. Heros  
2006—Peter M. Black  
2007—L. Dade Lunsford  
2008—William F. Chandler  
2009—James T. Rutka  
2010—Daniel L. Barrow  
2011—H. Hunt Batjer

**Officers of the Congress  
of  
Neurological Surgeons  
2011**

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## **Congress of Neurological Surgeons Past Presidents**

1951—Elmer S. Schultz, MD  
1952—Hendrik J. Svien, MD  
1953—Nathaniel R. Hollister, MD  
1954—James R. Gay, MD  
1955—Donald B. Sweeney, MD  
1956—Bland W. Cannon, MD  
1957—Frederick C. Rehfeldt, MD  
1958—Raymond K. Thompson, MD  
1959—Philip D. Gordy, MD  
1960—Thomas M. Marshall, MD  
1961—Martin P. Sayers, MD  
1962—Richard L. DeSaussure, MD  
1963—A. Roy Tyrer, Jr., MD  
1964—Edward C. Weiford, MD  
1965—Gordon van der Noort, MD  
1966—William H. Mosberg, Jr., MD  
1967—John R. Russell, MD  
1968—John Shillito, Jr., MD  
1969—Paul C. Sharkey, MD  
1970—John M. Thompson, MD  
1971—Donald F. Dohn, MD  
1972—John N. Meagher, MD  
1973—Bernard S. Patrick, MD  
1974—George T. Tindall, MD  
1975—James T. Robertson, MD  
1976—Robert G. Ojemann, MD  
1977—Bruce F. Sorensen, MD  
1978—Albert L. Rhoton, Jr., MD  
1979—David L. Kelly, Jr., MD  
1980—Robert H. Wilkins, MD  
1981—J. Fletcher Lee, MD  
1982—Donald H. Stewart, Jr., MD  
1983—John M. Tew, Jr., MD  
1984—Edward R. Laws, Jr., MD  
1985—Robert A. Ratcheson, MD  
1986—Joseph C. Maroon, MD  
1987—Donald O. Quest, MD  
1988—Christopher B. Shields, MD  
1989—J. Michael McWhorter, MD  
1990—Hal L. Hankinson, MD  
1991—Michael Salcman, MD  
1992—William F. Chandler, MD  
1993—Arthur L. Day, MD  
1994—Richard A. Roski, MD  
1995—Ralph G. Dacey, Jr., MD  
1996—Stephen J. Haines, MD  
1997—Marc R. Mayberg, MD  
1998—William A. Friedman, MD  
1999—H. Hunt Batjer, MD  
2000—Daniel L. Barrow, MD  
2001—Issam A. Awad, MD  
2002—Stephen M. Papadopoulos, MD  
2003—Mark N. Hadley, MD  
2004—Vincent C. Traynelis, MD  
2005—Nelson M. Oyesiku, MD  
2006—Richard G. Ellenbogen, MD  
2007—Douglas Kondziolka, MD  
2008—Anthony L. Asher, MD  
2009—P. David Adelson, MD  
2010—Gerald E. Rodts, Jr., MD  
2011—Christopher C. Getch, MD



## Editors-in-Chief Clinical Neurosurgery

<i>Volume</i>	<i>Date</i>	<i>Editor-in-Chief</i>
1	1953	Raymond K. Thompson, MD
2	1954	Raymond K. Thompson, MD & Ira J. Jackson, MD
3	1955	Raymond K. Thompson, MD & Ira J. Jackson, MD
4	1956	Ira J. Jackson, MD
5	1957	Robert G. Fisher, MD
6	1958	Robert G. Fisher, MD
7	1959	Robert G. Fisher, MD
8	1960	William H. Mosberg, Jr, MD
9	1961	William H. Mosberg, Jr, MD
10	1962	William H. Mosberg, Jr, MD
11	1963	John Shillito, Jr, MD & William H. Mosberg, Jr, MD
12	1964	John Shillito, Jr, MD
13	1965	John Shillito, Jr, MD
14	1966	Robert G. Ojemann, MD & John Shillito, Jr, MD
15	1967	Robert G. Ojemann, MD
16	1968	Robert G. Ojemann, MD
17	1969	Robert G. Ojemann, MD
18	1970	George T. Tindall, MD
19	1971	George T. Tindall, MD
20	1972	Robert H. Wilkins, MD
21	1973	Robert H. Wilkins, MD
22	1974	Robert H. Wilkins, MD
23	1975	Ellis B. Keener, MD
24	1976	Ellis B. Keener, MD
25	1977	Ellis B. Keener, MD
26	1978	Peter W. Carmel, MD
27	1979	Peter W. Carmel, MD
28	1980	Peter W. Carmel, MD
29	1981	Martin H. Weiss, MD
30	1982	Martin H. Weiss, MD
31	1983	Martin H. Weiss, MD
32	1984	John R. Little, MD
33	1985	John R. Little, MD
34	1986	John R. Little, MD
35	1987	Peter McL. Black, MD, PhD
36	1988	Peter McL. Black, MD, PhD
37	1989	Peter McL. Black, MD, PhD
38	1990	Warren R. Selman, MD
39	1991	Warren R. Selman, MD
40	1992	Warren R. Selman, MD
41	1993	Christopher M. Loftus, MD
42	1994	Christopher M. Loftus, MD
43	1995	Christopher M. Loftus, MD
44	1996	M. Sean Grady, MD
45	1997	M. Sean Grady, MD
46	1998	M. Sean Grady, MD
47	1999	Matthew A. Howard III, MD
48	2000	Matthew A. Howard III, MD
49	2001	Matthew A. Howard III, MD
50	2002	Guy M. McKhann, II, MD
51	2003	Guy M. McKhann, II, MD
52	2004	Guy M. McKhann, II, MD
53	2005	Guy M. McKhann, II, MD & Gerald A. Grant, MD
54	2006	Gerald A. Grant, MD
55	2007	Gerald A. Grant, MD
56	2008	Gerald A. Grant, MD
57	2009	Gerald A. Grant, MD
58	2010	Gerald A. Grant, MD
59	2011	Gerald A. Grant, MD

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Columbus, Ohio



H. HUNT BATJER



**Honored Guest**  
**H. Hunt Batjer, MD**  
**Michael J. Marchese Professor and Chair of the**  
**Department of Neurological Surgery at Northwestern**  
**University Feinberg School of Medicine and Chair of the**  
**Department of Neurological Surgery at Northwestern**  
**Memorial Hospital**

H. Hunt Batjer, MD, is the Michael J. Marchese Professor and Chair of the Department of Neurological Surgery at Northwestern University Feinberg School of Medicine and Chair of the Department of Neurological Surgery at Northwestern Memorial Hospital in Chicago. Dr Batjer is recognized internationally as a leading cerebrovascular surgeon, especially for complex aneurysms, vascular malformations, and brain ischemic states.

Dr Batjer, who joined Northwestern in 1995, is a past President of the Congress of Neurological Surgeons and the Society of University Neurosurgeons. He is past Chairman of the AAANS/CNS Section on Cerebrovascular Disease. He is an elected member of the American Academy of Neurological Surgery, The Society of Neurological Surgery, and the American Surgical Association. He is past Chairman of the American Board of Neurological Surgery and Chairman of the Board of the Interurban Neurological Society. Last year he served as Vice President of the Neurosurgical Society of America and has been nominated as President-Elect, he has also been nominated for a position as Director-at-Large with the American Association of Neurological Surgeons, and is currently serving his second year on the Neurosurgical Residency Review Committee of the ACGME, and co-Chair NFL Committee on Head, Neck, and Spine Injuries.

Dr Batjer came to Northwestern from the University of Texas Southwestern Medical Center at Dallas where he was Professor of Neurological Surgery and was twice voted outstanding teacher.

His academic pursuits and research in ischemic and hemorrhagic stroke have resulted in over 300 publications as well as 5 books and two major texts titled *The Textbook of Neurological Surgery* and *Intracranial Vascular Malformations*. He also serves on multiple editorial boards and is principal reviewer for Cerebrovascular Disease for *Neurosurgery*<sup>®</sup>. Dr Batjer has served as Visiting Professor at over 50 medical universities worldwide and given 20 Endowed Lectureships.

He and his wife Janet live in Wilmette, Illinois, and have 4 daughters.

# Curriculum Vitae and Selected Bibliography for H. Hunt Batjer, MD, FACS

## PERSONAL DATA

Date of Birth: November 2, 1951

Place of Birth: Burlington, Vermont

Office Address: Michael J. Marchese Professor and Chairman  
Department of Neurological Surgery  
Northwestern University, Feinberg School of Medicine  
676 N. St. Clair St, Suite 2210  
Chicago, Illinois 60611  
Tel: (312) 695-6200  
Fax: (312) 695-0225  
Email: hbatjer@nmff.org

## EDUCATION

1970-1973 The University of Texas  
Austin, Texas

1973-1977 University of Texas Southwestern Medical School  
Dallas, Texas  
Doctor of Medicine

## INTERNSHIP

July 1977-June 1978 General Surgery  
Univ. of Texas Southwestern Medical School - Parkland Memorial Hospital  
Dallas, Texas

## RESIDENCY

July 1978-December 1982 Neurological Surgery  
Univ. of Texas Southwestern Medical School- Parkland Memorial Hospital  
Dallas, Texas

## FELLOWSHIPS

April 1981-October 1981 Honorary Assistant House Staff, Physician- Neurology  
The National Hospital- Institute of Neurology  
University of London  
London, England

October 1981-March 1982 Clinical Fellow- Cerebrovascular Neurosurgery  
University Hospital  
The University of Western Ontario  
London, Ontario, Canada

## ACADEMIC AWARDS/ENDOWED LECTURES

National Honor Society for Secondary Schools - 1970  
Phi Eta Sigma - 1972  
Alpha Omega Alpha - 1977  
Outstanding Teacher - 1990-91 - University of Texas Southwestern Medical Center - Class of 1994  
Outstanding Teacher - 1991-92 - University of Texas Southwestern Medical Center - Class of 1995

The Cully Cobb Lecture - 1995 (Sea Island, Georgia)  
 The Michael J. Marchese Chair in Neurosurgery - 1995  
 The Arlene and Marshall Bennett Lecture - 1995 (Evanston, Illinois)  
 Strathmore's Who's Who - 1997  
 The Best Doctors In America, Naifeh and Smith, 1994-95, 1999  
 The George Cohn Lecture - 1998 (Buffalo, NY)  
 Nominated for Outstanding Faculty Teacher Award (NUMS) - Class of 1999  
 Marquis Who's Who in the World, 17<sup>th</sup> ed – 2000  
 Honored Guest – Texas Association of Neurological Surgeons, May 6-9, 1999, Dallas, TX  
 Foundation Visitor – The Royal Australasian College of Surgeons, May 9-13, 1999, Auckland, New Zealand  
 Life Member-National Registry of Who's Who, 2000.  
 Marquis Who's Who in Medicine and Health Care, 3rd edition, 2001  
 The Gurdjian Lecture – Detroit, MI, August 8-9, 2000  
 The Sally Harrington Goldwater Visiting Professor-Phoenix, AZ, January 18-21, 2001  
 The Diana Tamari Sabbagh Lecture-Beirut, Lebanon, May 10-13, 2001  
 National Registry of Who's Who, 2002  
 The Frank Mayfield Lecture-Cincinnati, OH, May 19, 2001  
 The Edgar Kahn Lecture-Ann Arbor, MI, November 9, 2001  
 The Institute of Medicine of Chicago- Fellow  
 The William E. Hunt Memorial Lecture-Columbus, OH, November 22, 2002  
 The Jesse B. Barber Orator Award - National Medical Association, San Diego, CA, August 4, 2004  
 The Peardon Donaghey Lecture-AANS Annual Meeting, New Orleans, LA, April 20, 2005  
 The John E. Adams Lecture-UCSF, San Francisco, CA, November 17, 2005  
 Guest Lecturer, The Kentucky Medical Association, Louisville, KY, September 15, 2006  
 The Gurdjian-Thomas Lecture-Wayne State University, Detroit, MI, September 19, 2006  
 The Charles Drake Lecture, Chicago, IL, October 10, 2006  
 The Stanley Patterson Lecture, Memphis, TN, March 13, 2009  
 The 26<sup>th</sup> Annual J.G. Galbraith Lecture, University of Alabama at Birmingham, October 16, 2009  
 Invited Guest 57<sup>nd</sup> Congress of the Chilean Neurosurgical Society, Concepcion, Chile, December 2-3, 2009  
 W. James Gardner Lecture, The Cleveland Clinic, May 20, 2010  
 Frank P. Smith Lecture and Visiting Professorship – Rochester, NY, October 1, 2010  
 The Walter E. Dandy Lecture, Johns Hopkins Hospital, Baltimore, Maryland, October 7, 2010  
 Los Angeles Chamber Orchestra – Invited Speaker on “Mind, Brain and Music” – April 28, 2011  
 The Honored Guest - Congress of Neurological Surgeons – 2011  
 Graduation Speaker Department of Neurological Surgery North Shore University Hospital, Long Island, NY, June 1, 2012  
 Wilder Penfield Lecture, Ottawa, Canada, June 1, 2012

## LICENSURE

State of Illinois, Department of Professional Regulation- 036-091382  
 Texas Board of Medical Examiners- E8311  
 State of Illinois, Controlled Substance License- 9115321

## CERTIFICATION

Diplomate- National Board of Medical Examiners- 1978- #184991  
 Diplomate- American Board of Neurological Surgery- 1986- #8618

## COMMITTEE ACTIVITIES

### National

1. Fellow - Stroke Council - American Heart Association
2. Joint Section of Cerebrovascular Surgery (American Association of Neurological Surgeons - Congress of Neurological Surgeons)
3. Scientific Program Committee - American Association of Neurological Surgeons -1989
4. Scientific Program Committee - Congress of Neurological Surgeons -1988
5. Resident Registration Committee - Congress of Neurological Surgeons -1989
6. Assistant Chairman - Resident's Program Committee - Congress of Neurological Surgeons - 1989
7. Chairman - Resident Registration Committee - Congress of Neurological Surgeons - 1990
8. Joint Committee on Education (American Association of Neurological Surgeons and Congress of Neurological Surgeons) - 1989
9. Scientific Program Committee (Coordinator of Practical Courses) - Congress of Neurological Surgeons – 1991
10. Editor - Newsletter for Joint Section of Cerebrovascular Surgery (AANS, CNS) - 1990 –1996
11. Executive Committee - Joint Section of Cerebrovascular Surgery - 1990 - 2001
12. Chairman- Cerebrovascular Section Scientific Program - AANS Annual Meeting – 1992
13. Scientific Program Committee - Chairman of General Scientific Session -Cerebrovascular, CNS Annual Meeting – 1992
14. ThinkFirst Foundation - Campaign Steering Committee – 1991
15. ThinkFirst Foundation - Chairman, Texas Region – 1991
16. Scientific Program Committee - Neurosurgical Society of America – 1992
17. Cerebrovascular Liaison to Education Committee - Congress of Neurological Surgeons - 1992
18. Associate Chairman - International Fellowship Program - Congress of Neurological Surgeons
19. International Development Subcommittee - Program Development Task Force (CNS)
20. Research Committee - Neurosurgical Society of America
21. Continuing Medical Education Liaison to Neurosurgical Society of America - Joint Committee on Education (AANS - CNS)
22. Education Committee-Congress of Neurological Surgeons-1992
23. Neurosurgical Guidelines and Outcomes Committee - Cerebrovascular Section Liaison - American Association of Neurological Surgeons
24. Registration Committee - American Association of Neurological Surgeons - 1994
25. Chairman, Subcommittee on International Development (International Committee) Congress of Neurological Surgeons
26. Member - Board of Trustees - Foundation for International Education in Neurological Surgery (FIENS) – 1994
27. Member - Special Writing Group of the Stroke Council of the American Heart Association - 1994
28. Scientific Program Committee - General Scientific Session III - Congress of Neurological Surgeons - 1994
29. Consultant - Department of Veterans Affairs - Merit Review Board for Neurobiology
30. Chairman - Future Sites, Congress of Neurological Surgeons - 1994
31. International Advisory Board - First International Symposium on Cerebral and Spinal Cord AVM, Aichi, Japan - 1996
32. Chairman - International Committee, Congress of Neurological Surgeons, 1995
33. Guest Examiner - American Board of Neurological Surgery, November 14-17, 1995.
34. Board of Directors - Interurban Neurosurgical Society - 1996-Present
35. Chairman, Membership Committee - Society of University Neurosurgeons

36. Nominating Committee - Neurosurgical Society of America (1996-1999)
37. Councilor - Chicago Medical Society (1996-1998)
38. American Association of Neurological Surgeons (AANS) - Task Force for Endovascular Neurosurgery
39. AANS/CNS Officers - Task Force on Fellowship Training
40. Chairman - Strategic Planning Committee - Congress of Neurological Surgeons 1997-1998
41. Washington Committee (AANS/CNS) - (1997-2000)
42. Chairman - Committee on Postgraduate Training, AANS/CNS Section on Cerebrovascular Surgery - 1998
43. Committee for Subspecialization and Fellowships - The Society of Neurological Surgeons - 1998
44. Strategic Planning Workgroup – AANS/CNS – 1999-2000
45. AANS Facilities Planning Committee – 1999
46. AANS Search Committee for Executive Director – 1999
47. Fellowship Accreditation Committee – The Society of Neurological Surgeons
48. Chairman - Professional Conduct Committee - Congress of Neurological Surgeons - 1999-2000
49. Chairman - Distinguished Service Award Committee - Congress of Neurological Surgeons - 1999-2000
50. Member - Nominating Committee - Congress of Neurological Surgeons - 1999-2000
51. Chairman - Nominating Committee - Congress of Neurological Surgeons - 2000-2001
52. Professional Advisory Council – National Stroke Association – 2000-2001
53. Expert panel - AANS-USA Today Advertorial
54. American Board of Neurological Surgery - Liaison for Written Board Preparation
55. Chairman-Elect-AANS/CNS Section on Cerebrovascular Surgery.
56. Consultant to the Neurological Devices Panel of the Medical Devices Advisory Committee, Center for Devices and Radiological Health, FDA.
57. Joint Writing Group for Brain Arteriovenous Malformation Definitions: SCIR, ASITN, SCVS, 2000.
58. Search Committee-Executive Director-AANS (1996)
59. Search Committee-Executive Director-AANS (1999)
60. Consultant-Neurological Devices Panel-Food and Drug Administration, 2001
61. Society of Neurological Surgeons-Committee on core Curriculum for Neurosurgery 1999-2000.
62. Society of Neurological Surgeons-Fellowships Committee
63. Chairman, Membership Committee Neurosurgical Society of America, 2001-2005
64. Reviewer-Clinical Cardiovascular Sciences (CCSVS) Study Section, Department of Health and Human Services, National Institute of Health
65. Director, American Board of Neurological Surgeons, 2002
66. Washington Committee – Quality Improvement Workgroup, 2005
67. Chair, Maintenance of Certification, ABNS, 2004-2008
68. Vice Chair Education, Maintenance and Certification Committee - AANS
69. Consultant – Food and Drug Administration, Center for Devices and Radiological Help, Division of Ethics and Management Operations, Rockville, MD
70. Nominating Committee – Neurosurgical Society of America, 2007-2010
71. Chair, AANS MOC Committee, 2008 -
72. Member, AANS/CNS Drugs and Devices Committee, 2007-
73. Member-at-Large, Executive Committee – American Academy of Neurological Surgery, 2008-2009
74. Member – Neurosurgical Education and Training Task Force (AANS/CNS Washington Committee) 2009-
75. Member - ACGME Residency Review Committee for Neurological Surgery, 2009-2015



76. Chair - FDA Neurological Devices Advisory Panel, May 14, 2009
77. Member – American College of Surgeons Task Force for the response to the IOM Report on Resident Duty Hours, 2009
78. Member - American Board of Medical Specialties Ad Hoc Workgroup on Issues related to Residency Work Hours, 2009
79. Member – Society of Neurological Surgeons Workgroup on Residency Work Hours, 2009
80. Member – Congress of Neurological Surgeons Committee for Long Range Planning and Development of Neurosurgery, 2009
81. Grady S, Batjer H: Testimony for the Accreditation Council for Medical Education – Duty Hours Task Force on behalf of the Society of Neurological Surgeons, The American Board of Neurological Surgery, The American Association of Neurological Surgeons, and the Congress of Neurological Surgeons – Chicago, IL, June 11, 2009
82. Batjer HH: co-Chair NFL Head, Neck, Spine Medical Committee – 2010 –
83. American College of Surgeons Task Force on Residents Duty Hours – 2010
84. President Elect – Neurosurgical Society of America, 2012 – 2013
85. Board of Director – American Association of Neurological Surgeons, 2011 –
86. Chair – AGME Resident Review Committee for Neurosurgery, June 2011 – June 2014
87. ACGME – Member Council of Review Committees, August 15, 2011 –
88. ACGME-Neurological Surgery Milestone Project – Advisory Group, August 2011 -

#### **VISITING PROFESSORSHIPS**

1. Albert Einstein School of Medicine, New York, June 16-17, 1988
2. Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland, September 19, 1990
3. Montreal Neurological Institute, McGill University, Montreal, Quebec, May 10, 1993
4. University of Arkansas Medical Center, Little Rock, Arkansas, November 1, 1993
5. Johns Hopkins University, Baltimore, Maryland, November 9-11, 1993
6. The Brigham and Women’s Hospital, Harvard Medical School, Boston, Massachusetts, March 23-24, 1994
7. Chicago Institute of Neurosurgery and Neuroresearch, Chicago, Illinois, January 16, 1995
8. University of South Alabama, Mobile, Alabama, March 1, 1995
9. Yonsei University College of Medicine, Seoul, Korea, March 24-25, 1995
10. Emory University School of Medicine, Atlanta Georgia, August 17-18, 1995
11. The Sao Paulo Neurological Institute, Sao Paulo, Brazil, August 23-25, 1995
12. University of Illinois College of Medicine, Peoria, IL, June 20-21, 1996
13. The University of Vermont, Burlington, VT, July 17-18, 1996
14. The University of Virginia, Charlottesville, VA, July 25-27, 1996
15. The University of Chicago, Chicago, IL, October 26, 1996
16. The Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, November 21, 1996
17. National Taiwan University College of Medicine, Taipei, Republic of China, November 27-December 1, 1996
18. State University of New York Health Science Center, Syracuse, New York, February 25-26, 1997.
19. Indiana University School of Medicine, Indianapolis, Indiana, June 20-21, 1997
20. University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, August 27-29, 1997
21. Yale University Medical School, New Haven, Connecticut, September 4-5, 1997
22. The University of Nebraska Medical Center, October 17 - 18, 1997
23. The University of Utah, January 23, 1998
24. State University of New York at Buffalo, June 24 - 26, 1998
25. Loyola University Medical School, July 21, 1998
26. University of Texas Southwestern Medical Center, February 18-19, 1999

27. University of California at Irvine, Cedars-Sinai Medical Center, April 13-14, 1999
28. Wayne State University, Gurdjian Visiting Professor, Detroit, Michigan, August 8-9, 2000.
29. Barrow Neurological Institute, University of Arizona, January 20, 2001.
30. University of Wisconsin, Madison, January 26-27, 2001.
31. American University of Beirut, Middle East Medical Assembly, Beirut, Lebanon, May 10-13, 2001.
32. Washington University School of Medicine, St. Louis, MO, May 15-16, 2001
33. The University of Cincinnati, Cincinnati, OH, May 19, 2001
34. The University of Michigan, Ann Arbor, November 9, 2001
35. The Cleveland Clinic, Cleveland, Ohio, December 10, 2001
36. Stanford University, San Francisco, May 10, 2002
37. University of Colorado, Denver, CO, May 24, 2002
38. Columbia University College of Physicians and Surgeons, New York, NY, September 12, 2002
39. Ohio State University, Columbus, Ohio, November 22, 2002.
40. Yale University School of Medicine, New Haven, CT, December 4, 2002
41. Thomas Jefferson University, Philadelphia, PA, January 26, 2004
42. Lahey Clinic, Burlington, MA, March 3, 2004
43. Medical College of Wisconsin, Milwaukee, WI, April 16, 2004.
44. Walter Reed Army Medical Center, MD, September 27, 2004
45. University of Toronto, April 28-9, 2005
46. University of California San Francisco, November 17, 2005
47. Cornell University Weill School of Medicine, June 26, 2006
48. Wayne State University, September 19-20, 2006
49. Cedars Sinai Medical Center Los Angeles, October 25-26, 2007
50. University of South Florida, Tampa, March 13-14, 2008
51. Allegheny General Hospital, Pittsburgh, PA, October 27, 2008
52. Louisiana State University Health Science Center – Shreveport, February 11 & 12, 2009
53. University of Alabama at Birmingham Division of Neurological Surgery, October 15-16, 2009
54. The Cleveland Clinic, May 20 -22, 2010
55. The University of Rochester School of Medicine, October 1, 2010
56. The Johns Hopkins Hospital, Baltimore, Maryland, October 7, 2010 (Walter E. Dandy Lecture)
57. University of Texas Medical Center, Dallas, TX August 23-24, 2011
58. Graduation Speaker Department of Neurological Surgery North Shore University Hospital, Long Island, NY, June 1, 2012

#### **INVITED EXTERNAL DEPARTMENTAL REVIEWS**

1. Department of Neurological Surgery, The Mayfield Clinic, The University of Cincinnati
2. Department of Neurological Surgery, Penn State University

#### **EXECUTIVE AND BOARD APPOINTMENTS**

1. Executive Council - The Joint Section on Cerebrovascular Surgery (AANS/CNS): 1990-95, 1998 - 2003
2. Executive Committee - The Congress of Neurological Surgeons: 1990 - 2000
3. Board of Trustees - Foundation for International Education in Neurological Surgery (FIENS): 1994 - Present
4. Secretary - The Congress of Neurological Surgeons: 1995 - 1997
5. Board of Directors - The Interurban Neurosurgical Society: 1996 - Present
6. President-Elect - The Congress of Neurological Surgeons: 1997 – 1998
7. **Director - Feinberg Clinical Neuroscience Research Institute: 1997 - 2000**

8. Executive Council - The Society of University Neurosurgeons: 1997-98
9. Vice President - The Society of University Neurosurgeons: 1998-99
10. President – The Congress of Neurological Surgeons: 1998-99
11. Board of Directors – Northwestern Medical Faculty Foundation: 1998-
12. Executive Committee – Northwestern Medical Faculty Foundation – 1998
13. President-elect – The Society of University Neurosurgeons – 1999-2000
14. Past President – The Congress of Neurological Surgeons 1999-2000
15. Member - Board of Directors - The Federation for American Neurological Surgery 1999-2000
16. Chairman-Elect - AANS/CNS Section on Cerebrovascular Surgery 2000-2001
17. President - The Society of University Neurosurgeons 2000-2001.
18. Chairman – Board of Directors – The Interurban Neurological Society 2001-
19. Chairman - AANS/CNS Section on Cerebrovascular Surgery: 2001-2002.
20. Director-American Board of Neurological Surgery: 2002-2008
21. Chairman - American Board of Neurological Surgery, 2007-2008
22. Member - Advisory Council – American Board of Neurological Surgery (2008-2014)
23. Vice President - Neurosurgical Society of America, 2008-2009
24. Executive Committee – American Academy of Neurological Surgery, 2008-2009
25. Member – ACGME RRC for Neurological Surgery, 2009-2014
26. Vice President – Neurosurgical Society of America, 2009-2010
27. Executive Committee – The American Academy of Neurological Surgeons, 2009-
28. Corresponding Member – Neurosurgical Society of Chile, 2009-
29. President Elect – Neurosurgical Society of America, 2011 – 2012
30. Director-at-Large – American Association of Neurological Surgeons, 2011 – 2013
31. Co-Chair Head, Neck, & Spine Committee – The National Football League, 2010-
32. Chair, Residency Review Committee for Neurological Surgery (ACGME) 2011 – 2014
32. ACGME- Member Council of Review Committees, 2011 –
33. President – Neurological Society of America, 2012 – 2013

## PUBLICATIONS

### BOOKS

1. Samson DS, Batjer HH: Intracranial Aneurysm Surgery: Techniques. Futura Publishing Company, Mount Kisco, New York, 1990.
2. Batjer HH, (ed): Neurosurgery Clinics of North America: Spontaneous Intracerebral Hemorrhage. WB Saunders Co., Philadelphia, PA, 1992
3. Batjer HH (Editor-In-Chief): Cerebrovascular Disease. Lippincott-Raven Publishers, New York, 1996
4. Stieg P, Batjer HH, Samson DS: Intracranial Vascular Malformations. Informa Healthcare USA, Inc., New York, 2006
5. Batjer HH, Loftus C (editors): Textbook of Neurological Surgery, Principles and Practice Lippincott Williams and Wilkins Publishers, Philadelphia, 2003
6. Batjer HH, Bendok BR, Walker M, Naidech (Editors) A: Hemorrhagic and Ischemic Stroke: Surgical, Interventional, Imaging, and Medical Approaches, (In Press) Thieme Medical Publishers, 2011
7. Batjer HH, Benzel E, Steinmetz, Krishnaney AA, Ghogawala Z, et al (Editors) Evidence for Neurosurgery, TFM Publishing, Ltd, Castle Hill Barnes, Harley, Shrewsbury, UK; 2012
8. Batjer HH, Samson D, Eddleman CS, White, J, Trammell T, (Editors) Basic Operative Techniques of Intracranial Aneurysms, Thieme Medical Publishers, 2011

### PAPERS (MOST RECENT)

274. Sherma AK, Batjer HH, Bendok BR: CT Angiography for Assessment of Intracranial Basilar Apex Aneurysm Neck Diameter Reduction Post-Stenting for Treatment



- Planning. Catheterization and Cardiovascular Interventions. Published online November 10, 2009 (DOI: 10.1002/ccd.22358)
275. Surdell DL, Bernstein RA, Hage ZA, Batjer HH, Bendok BR. Symptomatic Spontaneous Intracranial Carotid Artery Dissection Treated With a Self Expanding Intracranial Nitinol Stent: A Case Report. *Surgical Neurology* 2008 Feb 28. [Epub ahead of print]
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  277. Mindea SA, Eddleman CS, Hage ZA, Batjer HH, Ondra SL, Bendok BR: Endovascular Embolization of a recurrent cervical giant cell neoplasm using N-butyl 2-cyanoacrylate: Case report and literature review. *Journal of Clinical Science*: 16(2):452-454;(epub DOI 10.1016/j.jocn.2008.03.017) 2009
  278. Naidech AM, Bernstein RA, Levasseur K, Bassin SL, Bendok BR, Batjer HH, Bleck TP, Alberts MJ: Platelet Activity and Outcome after Intracerebral Hemorrhage. *Annals of Neurology*: 65:352-356, 2009
  279. Burke GM, Burke AM, Sherma AK, Hurley MC, Batjer HH, Bendok BR. Moyamoya Disease: a summary. *Neurosurgical Focus*: 26(4):E11, 2009
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  281. FIA Investigators: Age at intracranial aneurysm rupture among generation: Familial Intracranial Aneurysm Study. *Neurology*: 72:695-698.2009
  282. Shi C, Awad IA, Jafari N, Lin S, Du P, Hage ZA, Shenkar R, Getch CC, Bredel M, Batjer HH, Bendok BR: Genomics of Human Intracranial Aneurysm Wall. *Stroke*: 40(4):1252-61, 2009
  283. Eddleman CS, Batjer HH, Lavine S: Vascular Neurosurgery. *Neurosurgical Focus*: 26 (5); E1, 2009
  284. Eddleman CS, Jeong H, Cashen TA, Walker M, Bendok BR, Batjer HH, Carroll TJ. Advanced Non-invasive Imaging of Spinal Vascular Malformations. *Neurosurgical Focus*: 26(1):E9, 2009
  285. Eddleman CS, Hurley MC, Naidech AM, Batjer HH, Bendok BR: Endovascular options in the treatment of delayed ischemic neurological deficits due to cerebral vasospasm. *Neurosurgical Focus*: 26(3):E6, 2009
  286. Eddleman S, Hurley M, Bendok B, Batjer HH: Cavernous Carotid Aneurysms: To Treat or Not to Treat, *Neurosurgical Focus*: 26(5); E4, 2009
  287. Lall R, Eddleman C, Bendok B, Batjer HH: Unruptured Intracranial Aneurysms and the Assessment of Rupture Risk Based on Anatomical and Morphological Factors: Shifting through the Quicksand of Data, *Neurosurgical Focus*: 26(5); E2, 2009
  288. Arnaout OM, Gross BA, Eddleman CS, Bendok BR, Getch CC, Batjer HH: Posterior Fossa Arteriovenous Malformations. *Neurosurgical Focus*: 26 (5); E12, 2009
  289. Pham M, Gross BA, Bendok BR, Awad IA, Batjer HH: Radiosurgery for angiographically occult vascular malformations. *Neurosurgical Focus*: 26 (5):E16, 2009
  290. Eddleman CS, Jeong H, Cashen TA, Walker M, Bendok BR, Batjer HH, Carroll TJ: Advanced noninvasive imaging of spinal vascular malformation. *Neurosurgical Focus*: 26(1):E9. 2009
  291. Gross BA, Batjer HH, Awad IA, Bendok BR: Brainstem cavernous malformations. *Neurosurgery*: 64, 805-818, 2009
  292. Grady MS, Batjer HH, Dacey RG: Resident duty hour regulation and patient safety: establishing a balance between concerns about resident fatigue and adequate training in neurosurgery. *Journal of Neurosurgery*: 110(5): 828-36, May 2009
  293. Naidech AM, Bendok Br, Bassin SL, Bernstein RA, Batjer HH, Bleck TP: Classification of Cerebral Infarction after Subarachnoid Hemorrhage Impacts Outcome. *Neurosurgery*: 64:1052-1058, 2009

294. Naidech AM, Bassin SA, Bernstein RA, Batjer HH, Alberts MJ, Lindholm, P, Bleck TP: Reduced platelet activity is more common than reported anti-platelet medication use in patients with intracerebral hemorrhage. *Neurocritical Care*, DOI.1007/s12028-009-9219-7, 2009
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299. Deboer R, Batjer H, Marymont M, Goldman S, Walker M, Gottardi-Littell N. Raizer J: Response of an adult patient with pineoblastoma to vorinostat and retinoic acid. *J. Neurooncology*, Epub, June 2009
300. Gross BA, Batjer HH, Awad IA, Bendok BR: Cavernous malformations of the basal ganglia and thalamus. *Neurosurgery*: 65:7:19, 2009
307. Sugrue P, Hurley M, Futterer S, Muro, KM, Surdell D, Batjer HH: High Grade Dural Arteriovenous Fistula Simulating a Bi-Thalamic Neoplasm. *Clinical Neurology and Neurosurgery*:111:629-632, 2009
300. Gross BA, Batjer HH, Awad IA, Bendok BR: Cavernous malformations of the basal ganglia and thalamus. *Neurosurgery*: 65:7:19, 2009
301. Sugrue P, Hurley M, Futterer S, Muro, KM, Surdell D, Batjer HH: High Grade Dural Arteriovenous Fistula Simulating a Bi-Thalamic Neoplasm. *Clinical Neurology and Neurosurgery*:111:629-632, 2009
302. Batjer HH, Duckworth E: Selected Drake Teachings: An Affectionate Look Back and a Look Forward – The Charles G. Drake Lecture – 2006: *Neurosurgery*: 65:360-371, 2009
303. Bendok BR, Hage ZA, Das S, Naidech A, Surdell DL, Adel JG, Shaibani A, Batjer HH, Carroll TJ, Walker M: Periprocedural MRI perfusion imaging to assess and monitor the Hemodynamic impact of intracranial angioplasty and stenting for symptomatic atherosclerotic stenosis. *Journal of Clinical Neuroscience*, 2009
304. Gross BA, Bendok BR, Hage ZA, Awad IA, Batjer HH: Advances in Open Neurovascular Surgery 2007. *Stroke*: 40(1):324-326, 2009
305. Naidech AM, Bendok BR, Garg RK, Bernstein RA, Alberts MH, Bleck TP, Batjer HH: Reduced platelet activity is associated with more intraventricular hemorrhage. *Neurosurgery*: 65(4):684-688, 2009
306. Sherma AK, Batjer HH, Bendok BR: CT Angiography for Assessment of Intracranial Basilar Apex Aneurysm Neck Diameter Reduction Post-Stenting for Treatment Planning. *Catheterization and Cardiovascular Interventions*. Published online November 10, 2009 (DOI: 10.1002/ccd.22358)
307. Sugrue PA, Hurley MC, Bendok BR, Surdell DL, Gottardi-Littell N, Futterer SF, Muro K, Batjer HH: High Grade Dural Arteriovenous Fistula Simulating a Bilateral Thalamic Neoplasm. *Clinical Neurology and Neurosurgery*: 111(7):629-32, 2009
308. Naidech AM, Bernstein RA, Bendok BR, Alberts MJ, Batjer HH: Response to Letter by Creutzfeldt et al. *Stroke*: 40(11): e646, 2009
309. Gross BA, Bendok BR, Hage ZA, Awad IA, Batjer HH: Advances in Open Neurovascular Surgery 2007. *Stroke*: 40(1):324-326, 2009
310. Jeong HJ, Cashen TA, Hurley MJ, Eddleman CS, Getch CG, Batjer HH, Carroll TJ: Radial Sliding Window MRA with HYPR. *MRM*: 61(5): 1003-1113, 2009
312. Eddleman CS, Jeong HJ, Hurley MC, Zuehlsdorff S, Dabus G, Getch CC, Batjer HH, Bendok, BR, Carroll TJ: 4D radial acquisition contrast-enhanced MR angiography and intracranial arteriovenous malformations: quickly approaching digital subtraction angiography. *Stroke*: 40(8):2749-53, 2009. Epub 2009 May 28
313. Naidech AM, Jovanovic B, Liebling S, Garg RK, Bassin SL, Bendok BR, Bernstein RA, Alberts MJ, Batjer HH: Reduced platelet activity is associated with early clot growth and worse 3-month outcome after intracerebral hemorrhage. *Stroke* 40(7):2398-401, 2009

314. Shih P, Yang BP, Batjer, Liu JJ “The surgical management of superficial siderosis” *The Spine Journal*;9(8):e16-19, 2009
315. Bederson JB, Connolly ES Jr., Batjer HH, Dacey RG, Dio JE, Diringer MN, Duldner JE, Harbaugh RE, Patel AB, Rosenwasser RH; Guidelines for the management of aneurysmal subarachnoid hemorrhage: a statement for healthcare professionals from a special writing group of the Stroke Council, American Heart Association. *Stroke*; 40(3): 994-1025, 2009
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317. Rahme RJ, Batjer HH, Bendok BR. Multiplicative impact of smoking and genetic predisposition on intracranial aneurysm formation. *Neurosurgery*: 67(2): N15-16, August 2010
318. Eddleman CS, Gottardi-Littell, N, Bendok BR, Batjer HH, Bernstein RA: Rupture of Cerebral Myxomatous Aneurysm Months After Resection of the Primary Cardiac Tumor. *Neurocritical Care Society*: DOI 10.1007/s12028-010-9400-z. June 30, 2010
319. Ellenbogen RG, Berger MS, Batjer HH: The National Football League and Concussion: Leading a culture change in contact sports: *World Neurosurgery*: 74(6):560-5, 2010
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321. Xu DS, Hurley MC, Batjer HH, Bendok BR: Delayed cranial nerve plasty after coiling of carotid cavernous sinus aneurysms: Report of 3 cases. *Neurosurgery*: 66(6):E1213-6, 2010
322. Eddleman CS, Getch CC, Bendok BR, Batjer HH: Saphenous Vein Grafts for High Flow Cerebral Revascularization. IN *Cerebrovascularization: Techniques in Extra-cranial to Intracranial Bypass Surgery*, (ed) Abdulrauf SI; Elsevier Saunders, Philadelphia, PA, 2011, pp 125-128, 2010
323. Bebawy J, Gupta DK, Bendok BR, Hemmer LB, Zeeni C, Avram MJ, Batjer HH, Koht A: Adenosine-Induced Flow Arrest to Facilitate Intracranial Aneurysm Clip Ligation: Dose-response data and safety profile. *Anesth Analg*: 110(5):1406-1411, 2010
324. Arnaout OM, Fishman AJ, Batjer HH, Bendok BR: Neurocutaneous Disorders Part I: Neurofibromatosis Types 1 and 2. *Contemporary Neurosurgery*: 32(6): 1-4, 2010
325. Arnaout OM, Fishman AJ, Batjer HH, Bendok BR: Neurocutaneous Disorders Part II: Tuberous Sclerosis Complex, von Hippel-Lindau Disease, and Sturge-Weber Syndrome. *Contemporary Neurosurgery*: 32(7): 1-6, 2010
326. Rahme RJ, Batjer HH, Bendok BR: Multiplicative impact of smoking and genetic predisposition on intracranial aneurysm formation. *Science Times Editorial, Neurosurgery*: 67(2):N15-16, August 2010
327. Bendok BR, Gupta DK, Rahme RJ, Eddleman CS, Adel JG, Sherma AK, Surdell DL, Bebawy JF, Koht A, Batjer HH: Adenosine for temporary flow arrest during intracranial aneurysm surgery: a single-center retrospective review. *Neurosurgery*. 69(4):815-20; 2011
328. Pollock GA, Shaibani A, Awad I, Batjer HH, Bendok BR. Intraventricular Hemorrhage Secondary to Intracranial Aneurysm Rupture—Successful Management by Arteriovenous Malformation Embolization Followed by Intraventricular Tissue Plasminogen Activator: Case Report. *Neurosurgery*: 68(2):E581-E586, February 2011.
329. Rahme RJ, Bernstein R, Batjer HH, Bendok BR. Is it time to abandon Warfarin and embrace oral direct thrombin inhibitors to prevent stroke in patients with atrial fibrillation? *Neurosurgery*: 68(2): N16-N17, February 2011
330. Jeong, HJ, Eddleman CS, Shah S, Seiberlich N, Griswold M, Batjer HH, Carr JC, Carroll TJ: Accelerating Time-Resolved MRA with Multiecho Acquisition, *Magnetic Resonance in Medicine*: 63:1520-1528, 2011

331. Eddleman CS, Getch CG, Bendok BR, Batjer HH: Craniotomy for Intracranial Cortical Arteriovenous Malformation. IN Jandial R, McCormick PC, Black PM (Eds): Core Techniques in Operative Neurosurgery; Elsevier Saunders, Philadelphia, PA, pp 183-191, 2011
332. Shafizadeh SF, Rahme RJ, Eddleman CS, Bendok BR, Batjer HH: Management of ruptured cerebral aneurysms and aneurysmal subarachnoid hemorrhage. IN Biller J, Ferro JM (Eds): Evidence-based Management of Stroke: TFM Publishing, UK, pp 135-174, 2011
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334. Naidech AM, Batjer HH, Bernstein RA: Prior antiplatelet therapy and outcome following intracerebral hemorrhage: A systematic review. *Neurology*: 3;76(18):1607. May 2011
335. Rahme RJ, Aoun SG, Batjer HH, Bendok BR: Carotid Revascularization After CREST. *World Neurosurgery*: 75(1):2-3, 2011
336. Bernstein RA, Gibbs M, Batjer HH: Clinical diagnosis and successful treatment of inflammatory cerebral amyloid angiopathy. *Neurocritical Care*: 4(3):453-5, 2011
337. Chmayssani M, Rebeiz JG, Rebeiz TJ, Batjer HH, Bendok BR: Relationship of growth to aneurysm rupture in asymptomatic aneurysms  $\leq$  7mm: A Systematic Analysis of the Literature. *Neurosurgery*: 68(5): 1164-71, 2011
338. Pham MH, Rahme RJ, Arnaout O, Hurley MC, Bernstein RA, Batjer HH, Bendok BR: Endovascular stenting of extracranial carotid and vertebral artery dissections: A systematic review of the literature. *Neurosurgery* 68:856-866, 2011
339. Rahme RJ, Aoun SG, Batjer HH, Bendok BR: SAMMPRIS: End of intracranial stenting for atherosclerosis? *Neurosurgery* 69:N16-17, 2011
340. Gregson BA, Broderick JP, Auer LM, Batjer HH, Chen X, Juvela S, Morgenstern LB, Pantazis GC, Teernstra O, Want W, Zuccarello M, Mendelow D: Individual patient data subgroup meta-analysis for Spontaneous Supratentorial Intracerebral Haemorrhage, *Stroke*, 43:1496-1504, 2012
341. Conley DB, Tan B, Bendok BR, Batjer HH, Chandra R, Sidle D, Rahme RJ, Adel JG, Fishman AJ. Comparison of Intraoperative Portable CT Scanners in Skull Base and Endoscopic Sinus Surgery: Single Center Case Series. *Skull Base* 21(4): 261-270, July 2011

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## **GENERAL SCIENTIFIC SESSION I: TO STRIVE, TO SEEK, TO FIND AND NOT TO YIELD**

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2011 Presidential Address Christopher C. Getch, MD . . . . .	1
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### CHAPTER 2

Unyielding Progress: Treatment Paradigms for Giant Aneurysms Laligam N. Sekhar, MD, FACS, Farzana Tariq, MD, Jeffrey C. Mai, MD, PhD, Louis J. Kim, MD, Basavaraj Ghodke, MD, Daniel K. Hallam, MD, and Ketan R. Bulsara, MD . . . . .	6
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### CHAPTER 3

#### **Honored Guest Lecture**

Red Cerebral Veins: The Science, the Art, and the Craft H. Hunt Batjer, MD, Salah G. Aoun, MD, Rudy J. Rahme, MD, and Bernard R. Bendok, MD . . . . .	22
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## **GENERAL SCIENTIFIC SESSION II: TO STRIVE, TO SEEK, TO FIND AND NOT TO YIELD**

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