

VITAE
JOSEPH C. MAROON, M. D.

CITIZENSHIP: United States

BUSINESS ADDRESS: Department of Neurological Surgery
UPMC-Presbyterian Hospital
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EDUCATION AND TRAINING

UNDERGRADUATE

1958-1961	Indiana University Bloomington, Indiana	A.B. Anatomy & 1961 Physiology
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GRADUATE

1961-1965	Indiana University School of Medicine Indianapolis, Indiana	M.D. 1965
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POST GRADUATE

1965-1966	Indiana University Medical Center Indianapolis, Indiana	Internship
1966-1967	Georgetown University Hospital Washington, D.C.	Residency General Surgery
1967-1968	Indiana University Medical Center Indianapolis, Indiana	Residency Neurological Surgery
1968-1969	Oxford University Hospitals	Residency

	The Radcliffe Infirmary Oxford, England	Neurological Surgery
1969-1971	Indiana University Medical Center Indianapolis, Indiana	Residency Neurological Surgery
1971-1972	University of Vermont Burlington, Vermont	Given Scholar in Microneurosurgery

APPOINTMENTS AND POSITIONS

PRESENT

10/99 - Present	Department of Neurosurgery UPMC Health Systems Presbyterian University Hospital Pittsburgh, PA	Vice Chairman
1995-1998	Department of Surgery Allegheny University of the Health Sciences Allegheny General Hospital Pittsburgh, Pennsylvania	Chairman
1984-1999	Department of Neurological Surgery Allegheny University of the Health Sciences Allegheny General Hospital Pittsburgh, Pennsylvania	Chairman
1972-1984	Department of Neurological Surgery University of Pittsburgh Medical Center Presbyterian-University Hospital Pittsburgh, Pennsylvania	Chief

ACADEMIC APPOINTMENTS

10/99-Present	Department of Neurological Surgery University of Pittsburgh Medical Center Presbyterian-University Hospital Pittsburgh, Pennsylvania	Clinical Professor
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1988-1999	Department of Surgery (Neurosurgery) Allegheny University of the Health Sciences Pittsburgh, Pennsylvania	Professor
1987-Present	Department of Neurological Surgery West Virginia University School of Medicine Wheeling, West Virginia	Professor
1984-1993	Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Clinical Professor
1981-1984	Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Professor
1974-1981	Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor
1972-1974	Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania	Assistant Professor

HOSPITAL APPOINTMENTS

2/2004 – Present	Mercy Hospital of Pittsburgh Department of Surgery Division of Neurosurgery	Courtesy
2001-Present	Sewickley Valley Hospital Department of Surgery Division of Neurosurgery	Active
10/99-Present	Neurosurgery Department University of Pittsburgh Medical Center	Attending

	Presbyterian-University Hospital Pittsburgh, Pennsylvania	
1984-1999	Neurosurgery Department Allegheny University of the Health Sciences Allegheny General Hospital Pittsburgh, Pennsylvania	Sr. Attending
1992-Present	Neurosurgery Division North Hills Passavant Hospital Pittsburgh, Pennsylvania	Consulting
1986-Present	The Rehabilitation Institute 6301 Northumberland Pittsburgh, Pennsylvania	Consulting
1977-2004	Neurosurgery Department Mercy Providence Hospital Pittsburgh, Pennsylvania (Closure of facility)	Consulting
1972-1984	Neurosurgery Department Presbyterian-University Hospital Pittsburgh, Pennsylvania	Attending

ATHLETIC CONSULTANT

2008	World Wrestling Entertainment	Medical Director
1977-Present	The Pittsburgh Steelers Football Organization Pittsburgh, Pennsylvania	Team Neurosurgeon
1972-1983	The Pitt Panthers Football Team University of Pittsburgh Pittsburgh, Pennsylvania	Consulting

MILITARY SERVICE

4/1966/4/1972	400th Medical Intelligence Detachment United States Army Reserve	Captain
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SPECIALTY BOARDS

5/1973	American Board of Neurological Surgeons	Certified
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LICENSURE

1969	Indiana
1972	Pennsylvania
1976	West Virginia
1980	Ohio

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

Allegheny County Medical Society
 American Academy of Anti-Aging Medicine
 Sr. Vice President (2008 -)
 American Academy for the Advancement of Science
 American Association for the History of Medicine
 American Association of Neurological Surgeons
 Section of Cerebrovascular Surgery (1977-1979)
 American College of Sports Medicine
 American College of Surgeons
 American Institute of Ultrasound in Medicine
 American Medical Association
 Association for Academic Surgery
 CFR Historical Society
 Congress of Neurological Surgeons
 General Program Chairman (1978-1979)
 Executive Committee (1977-1979)
 Chairman, Scientific Program Committee (1977-1978)
 Chairman, Public Relations Committee (1975-1977)
 Chairman, Workshop Committee (1974-1975)
 International Neurosurgical Forum
 International Society of Pediatric Surgery
 Mid-Atlantic Neurosurgical Society
 Council Member (1976-1978)
 National Association for Disabled Athletes
 Advisory Board (1984-Present)
 National Football League Physicians Society (1983-Present)
 New York Academy of Science

Neurosurgical Society of America
 Program Committee (1978-1979)
 Pennsylvania Medical Society
 Pennsylvania Neurosurgical Society
 Pittsburgh Academy of Medicine
 Pittsburgh Neurosurgical Society
 President (1976-1977)
 Research Society of Neurological Surgeons
 Society of Neuroscience

EDITORIAL BOARD MEMBERSHIPS

Neurosurgery, Robert Wilkins, Editor (1977-1984)
Clinical Neurosurgery, Peter Carmel, editor (1975-1977)
The Journal of Microsurgery, R.M.P. Donaghy, Editor (1978-1988)
Journal of the American Association of Surgeons Assistants, (1977-1994)
The Physician and Sportsmedicine, (1978-1999; 10/2008 - Present)
Neurological Research, (1991-Present)
Turkish Journal of Neurosurgery, (1992-Present)
Surgical Neurology, (1994-2008)
Stroke, (1995-Present) - Reviewer
Journal of Cranial Base Surgery, (1995-Present) - Reviewer
Annals of Otolaryngology, Rhinology and Laryngology, (1995-Present) - Reviewer
Today's Health, (1995-Present)
Journal of Neural Regeneration Research, (4/2007 – Present) - Reviewer
Case Reports in Medicine, (12/2008 – Present)
Anti-Aging News Journal, (2009 – Present) – Editor
European Journal of Pain, (2009-Present) – Reviewer
Journal of the American College of Surgeons (2010-Present) – Reviewer
Surgical Neurology International (3/2011-Present) – Associate Editor in Chief
Journal of Neurotrauma (2013) - Reviewer

HONORS AND AWARDS

UNDERGRADUATE

Scholastic All-American, Varsity Football
 Board of Acons (Twelve man advisory board to the President on
 Student Affairs)
 Alpha Epsilon Delta honorary pre-medical fraternity

GRADUATE

President of Medical School Class
 American Heart Association Student Research Fellowship
 in Cardiology
 Student Research Fellow in Renal and Metabolic Diseases

POST GRADUATE

McCaskey Award - Presented annually by the Indiana Chapter of the American College of Surgeons for the best paper presented by a Resident in the surgical specialities: Ophthalmosonometry: An Ultrasonic Technique for Assessing Carotid Blood Flow.

Alex Ross Award - Presented annually by the Indiana Neurological Society for the best paper dealing with clinical neurological Sciences: the use of Ultrasound in Assessing Carotid Patency.

Ensminger Award - Presented annually by the Indiana Chapter of the American College of Surgeons for the best paper on trauma: Management of Football Head and Neck Injuries.

Teacher of the Year Award - presented by Class of 1971, Indiana University School of Medicine.

PROFESSIONAL CAREER

Dapper Dan Man of the Year - presented by the Upper Ohio Valley Dapper Dan for excellence in sports medicine. Wheeling Civic Center, Wheeling, West Virginia, February 21, 1988.

The Wakeman Award - presented at the Searle Center for Continuing Education in Health Science, Duke University Medical Center for research in the neurosciences, National Acute Spinal Cord Injury Study II. Durham, North Carolina, October 26, 1990.

Contributors Recognition Award - for accomplishments and contributions To Allegheny Health Services, May 2, 1991.

Distinguished Alumnist Award - St. Johns Central High School, Bellaire, Ohio, June 1, 1991.

Clevenger Award - distinguished alumnus, Indiana University, Bloomington,

Indiana, 1993.

The Best Doctors in America - selected annually by Woodward/White, Inc.
1994 - 2013

Dennis and Rose Heindl Endowed Chair for Neuroscience Research, 1996

Healthcare Hero Finalist, The Pittsburgh Business Times, January, 1999

Arab American Medical Association Award for Excellence in Medicine,
Pittsburgh Chapter, May 1, 1999.

Honorary President, World Association of Lebanese Neurosurgeons, May, 1999.

Lou Holtz/Upper Ohio Valley Hall of Fame inductee, for excellence in
athletics and medicine, June 1999

American Association of Neurological Surgeons peer reviewed poster/lecture.
First Place Award for "Results of Omega-3 EFA for Spine Pain".
April, 2005.

Western Chapter Pennsylvania Sports Hall of Fame Induction, May 2, 2009.

National Fitness Hall of Fame Induction, Chicago, IL. March 14, 2010.

Distinguished Alumni Service Award, Indiana University, Bloomington, IN,
November 4, 2011.

Ohio Valley Athletic Conference Hall of Fame Class of 2012, Wheeling, WV,
August 18, 2012.

Pioneer Award. 25th Anniversary UPMC Center for Cranial Base Surgery,
Pittsburgh, PA, November 17, 2012

RESEARCH GRANTS

Co-Investigator:

1989 Cryogenic Lesions of Canine Brain
Allegheny-Singer Research institute
\$4,865.00

1990 Effect of Sapphire Probe Nd:YAG Laser on Rabbit Cerebral Cortex

- Allegheny-Singer Research Institute
\$4,988.34
- 1990 Cryogenic Lesions of the Brain
Cryomedical Sciences, Inc.
\$14,000.00
- 1990 Head injury Study
Upjohn
\$200,000
- 1990 Percutaneous Laser Discectomy - Contract through Candela Laser on
NIH SBIR Grant (1 R44 AR402878-02)
\$15,495.40
- 1991 Chronic ICP Measurements and MRI Images Following Cranial Cryosurgical
Lesions
Cryomedical Sciences, Inc.
\$35,881.00
- 1991 Percutaneous Laser Discectomy - Contract through Candella Laser on
NIH SBIR Grant (1 R44 AR402878-02)
\$137,787.00
- 1991 National Acute Spinal Cord Injury Study, III
NIH
\$1,500,000.00
- 1992 Head Injury Study
Sterling-Winthrop
\$150,000.00
- 1994 MRI Spectroscopy with Spinal Cord Injury
Allegheny-Singer Research Institute
\$200,000.00
- 1995 Neurosurgery Research
The Pittsburgh Foundation
\$2,000.00
- 2012 ElMindA, Ltd. Research Contract
Comparison of brain network activation analysis using evoked response

Potentials, clinical symptoms and neurocognitive performance in concussed Children, young adults and matched controls. January 2012 – December 2013
\$367,000

- 2012 Defense Medical Research and Development Program (DMRDP) Research Grant
Validation of AMPA receptor peptide assay to improve diagnostic certainty of
Mild traumatic brain injury (mTBI).
January 2012 – December 2014
\$208,000

RESEARCH STUDIES

- 2005 Evaluation of Omega-3 EFA for Spine-Related Pain
250 patients, daily dose of Omega-3 EFAs – 2.4 gm/day
60% able to stop NSAIDS and/or pain meds, no side effects
Completed and Published
- 2006 CerviCore Artificial Disc Study – Stryker Spine, PI at University of Pittsburgh
Medical Center – Ongoing
- 2007 Steelers Omega-3 Lipid Study – Investigator – Completed and Published Jan 2009

MEMBER, BOARD OF DIRECTORS

Allegheny General Hospital and Allegheny Health Services, Inc.
Pittsburgh, Pennsylvania
Think First Foundation, National Head and Neck Injury Prevention
Society, 1986 - 1994
American Youth Foundation, St. Louis, Missouri, 1999 – 2005
Mylan Laboratories, Morgantown, West Virginia, 2003-Present
World Advisory Board of the International Sports Hall of Fame, 2012
Board of Directors, Phipps Conservatory, 2012
Chairman, Science and Technology Committee of Mylan Labs, 2012
Chairman, Medical and Scientific Advisory Board, Stemedica, 2012

OFFICES HELD IN NATIONAL SOCIETIES

Congress of Neurological Surgeons
Secretary (1980-1983)
Vice President (1983-1984)
President Elect (1984-1985)
President (1985-1986)

ATHLETIC ACCOMPLISHMENTS

Ironman Triathlon (2.4 mile swim, 112 mile bike, 26.3 mile run):
 Kailua-Kona, Hawaii, October 1993, October 2003, October 2008,
 October 2010
 Pendicton, Canada, 1996
 New Zealand, March 1998
 Escape from Alcatraz, 1998
 50 Olympic distance triathlons, 1980-Present
 Ironman Germany, July 8, 2000

BIBLIOGRAPHY

BOOKS AND BOOK CHAPTERS

1. Maroon, J.C. What You Can Do About Cancer. Doubleday & Co., New York, 185 pp., 1969 (English, Italian, German and French translations).
2. Maroon, J.C. Cranioplasty. In Maxillofacial Prosthetics, Varoujan Chalion (Ed.), Williams & Wilkins, Baltimore, Maryland, 456 pp., 1971.
3. Maroon, J.C. Current Concepts in Cerebral Revascularization with Bypass Grafts. In Microneurosurgical Anastomoses for Cerebral Ischemia, George M. Austin (Ed.), Charles C. Thomas Co., Springfield, Illinois, 1976, pp. 35-38.
4. Dujovny, M., Barrionuevo, P.J., Laha, R.K., Osgood, C. P., DeCastro, S., Maroon, J.C. & Hellstrom, R. Experimental Middle Cerebral Artery Microsurgical Embolectomy. In Microsurgery for Stroke, Peter Schmiedek (Ed.), Springer-Verlag, New York, 1977, pp. 91-97.
5. Dujovny, M., Osgood, C.O., Maroon, J.C., and Jannetta, P.J. Canine Cerebral Ischemia. In Microvascular Anastomoses for Cerebral Ischemia, Jack M. Fein & O. Howard Reichman (eds.), Springer-Verlag, New York, (June) 1978, pp. 8-22.
6. Reid, M.H., Maroon, J.C., & Albin, M.S. Ultrasound in Neurosurgery. In Neurosurgery 2nd Edition, J.Youmans (Ed.), W.B. Saunders., Philadelphia, 1980.
7. Maroon, J.C. & Kennerdell, J.S. Optic Nerve Meningiomas. In Current Therapy in Neurological Surgery, D.M. Long (Ed.), B.C. Decker, Inc., 1985.

8. Warren, F.A., Maroon, J.C. & Kennerdell, J.S. Diagnosis and Surgical Management of Exophthalmos. In Neurology and Neurosurgery, Update Series, R. Ratcheson (ed.), 1985.
9. Wilberger, J.E. & Maroon, J.C. Trigeminal Neuralgia. In Conns Current Therapy, Rakakel (Ed.), W.B. Saunders, Philadelphia, 1985.
10. Maroon, J.C. & Kennerdell, J.S. Transcranial Superior Orbital Approach to the Orbit. In Techniques in Ophthalmic Plastic Surgery, Ralph E. Wesley (Ed.), John Wiley and Sons, Inc., New York, 1986, pp. 445-448.
11. Kennerdell, J.S. & Maroon, J.C. Four Wall Orbital Decompression for Severe Dysthyroid Exophthalmos. In Techniques in Ophthalmic Plastic Surgery, Ralph E. Wesley (Ed.), John Wiley and Sons, Inc., New York, 1986, pp. 449-451.
12. Maroon, J.C. & Abla A.A. Classification of Acute Spinal Cord Injury, Neurological Evaluation, and Neurological Considerations. In Critical Care Medicine Clinics Acute Spinal Cord Injuries, M.S. Albin (Ed.), Vol. 3, No. 3, (July) 1987.
13. Maroon, J.C. & Kennerdell, J.S. Surgical Approaches to the Orbit-Indications and Techniques. In The Diagnosis and Management of Orbital Tumors, Edward R. Laws (Ed.), Futura Publishing Co., Mount Kisco, New York, 1988, pp. 195-219.
14. Maroon, J.C., Abla, A., Kennerdell, J.S. & Garrity, J. Tumors of the Orbit. In Practice of Surgery, Julian Hoff (Ed.), Practice of Surgery, Ltd., Woodbury, Connecticut, 1988, pp. 1-19.
15. Maroon, J.C. The History of Lumbar Intervertebral Disc Surgery. In Automated Percutaneous Discectomy, G.M. Onik and C. Helms (Eds.), UCSF Radiology Research Foundation, San Francisco, 1988.
16. Onik, G.M. & Maroon, J.C. Automated Percutaneous Discectomy. In The Lumbar Spine-Concepts, Y. Floman (Ed.), Hebrew University, Hadassah University Hospital, Jerusalem, Israel, 1988.
17. Wilberger, J.E. & Maroon, J.C. Head Injuries in Athletes. In Clinics in Sports Medicine-Emergency Treatment of the Injured Athlete, Vol. 8, No. 1, Richard L. Ray (ed.), W.B. Saunders Co., Philadelphia, (Jan.), 1989, pp. 1-9.
18. Bailes, J.E. & Maroon, J.C. Management of Cervical Spine Injuries in Athletes. In Clinics in Sports Medicine-Emergency Treatment of the Injured Athlete, Vol. 8, No. 1, Richard L. Ray (Ed.), W.B. Saunders Co., Philadelphia, (Jan.), 1989, pp. 43-58.

19. Maroon, J.C. & Abla, A.A. Orbital Tumors. In Current Therapy in Neurosurgery, D. Long (Ed.), 1989, pp. 29-37.
20. Maroon, J.C. Presidential Address: From Aequanimitas to Icarus In Clinical Neurosurgery, Vol. 34. Proceedings of the Congress of Neurological Surgeons, Williams and Wilkins, 1988, pp 3-15.
21. Maroon, J.C. & Onik, G.M. Percutaneous Automated Discectomy: Indications, Technique, Results. In Spine, 3rd Edition, 1989.
22. Maroon, J.C., Abla, A. General Operative Technique. In Textbook of Neurological Surgery, J. Youmans (Ed.), 3rd Edition, 1990, pp. 922-940.
23. Maroon, J.C., Abla, A.A., Wilberger, J.E., Bailes, J.E. & Sternau, L.L. Central Cord Syndrome. In Clinical Neurosurgery, Vol. 37, Proceedings of the Congress of Neurological Surgeons, Williams and Wilkins, 1989, pp. 612-621.
24. Wilberger, J.E. & Maroon, J.C. Athletic Cervical Spine Injuries. In Disorders of the Cervical Spine, Camins, OLeary (Eds.), Williams and Wilkins, 1991, pp. 303-309.
25. Wilberger, J.E., Maroon, J.C. & Whiting, D. Radiographic Investigation of the Post-Spinal Cord Injury Patient. In The Outcome Following Traumatic Spinal Cord Injury, J.M. Piepmeier (Ed.), Futura, 1992, pp. 31-55.
26. Wilberger, J.E. and Maroon, J.C.: Athletic Cervical Spine Injuries. Disorders of the Cervical Spine, Camins and O'Leary (Eds.), Williams and Wilkins, pp. 303-309, 1992.
27. Maroon, J.C., Onik, G.M., Quigley, M.R. & Douglas, R. Automated Percutaneous Lumbar Discectomy. Indications, Technique and Results. In Lumbar Disc Disease, 2nd Edition, Russell W. Hardy, Jr., (Ed.), Raven Press, 1993, pp. 147-153.
28. Maroon, J.C., Kazim, J. and Kennerdell, J.C.: Orbital meningiomas and other tumors. Brain Surgery, Complication, Avoidance and Management. Michael L.J. Appuzzo M.D. (Ed.), Churchill Livingstone, pp. 652-667, 1993.
29. Maroon, J.C., The paradox of success...and the neurosurgeon. Perspectives in Neurological Surgery, Vol. 5, No. 1, Mark N. Hadley (Ed.), pp. 1561-162, 1994.
30. Maroon, J.C. The Paradox of Success and the Neurosurgeon - Competing Currents and Allegiances. In Philosophy of Neurological Surgery, Issam A. Awad (Ed.), AANS, 1995, pp. 203-210.

31. Quigley, M.R. & Maroon, J.C. Intradiscal Treatment of Lumbar Disc Disease. In Neurological Surgery, 4th Edition, Julian R. Youmans (ED.), W. B. Saunders, 1996, pp. 2382-2389.
32. Maroon, J.C. & Abla, A.A. Tumors of the Orbit. In Neurological Surgery, 4th Edition, Julian R. Youmans (Ed.), W.B. Saunders, 1996, pp. 2882-2892.
33. Quigley, M.R. & Maroon, J.C. Percutaneous Approaches to the Lumbar Disc. In Principles of Spinal Surgery, Vol. 1, Memesez and Sonntag (Eds.), McGraw-Hill, 1996, pp. 609-619.
34. Maroon, J.C., Kennerdell, J.S. & Brillman, J. Tumors of the Orbit. In Neurosurgery, 2nd Edition, Vol. 1, Wilkins and Rengachary (Eds.), McGraw-Hill, 1996, pp. 1481-1493.
35. Quigley, M.R., Maroon, J.C., Onik, G. Percutaneous Lumbar Discectomy. In Neurosurgery, 2nd Edition, Vol. 3, Wilkins and Rengachary (Eds.), McGraw-hill, 1996, pp. 3817-3822.
36. Quigley, M.R. & Maroon, J.C. Automated Percutaneous Discectomy. In Neurosurgery Clinics of North America, Mayberg and Winn (Eds.), W.B. Saunders, 1996, pp. 29-35.
37. Bailes, J.E. & Maroon, J.C. Neurosurgical Trauma in the Athlete. In The Practice of Neurosurgery. Tindall, Cooper and Barrow (Eds.), Williams and Wilkins, 1996, pp. 1659-1672.
38. Maroon, J.C., Abla, A.A. & Kennerdell, J.S. Management of Tumors of the Orbit. In The Practice of Neurosurgery, Tindall, Cooper and Barrow (Eds.), Williams and Wilkins, 1996.
39. Maroon, J.C., Onik, G. Treatment of Lumbar Disc Protusion with Unilateral Radiculopathy: Percutaenous Aspiration Discectomy vs. Microdiscectomy vs. Conservative Treatment. In Controversies in Neurosurgery, Al-Mefty, Oritano and Harkey (eds.), Thieme Medical Publishers, Inc., 1996.
40. Dureza, C., Tantuwaya, L.S. and Maroon, J.C. Surgical Approaches to the Orbit. In Cranial Base Surgery. Robertson, Robertson and Coakham (eds.), Churchill Livingstone, November, 1999.
41. Abla, A.A., Celin, S.E., Maroon, J.C. and Medary, M. Cervical Spondylotic Myelopathy. In Neurosurgical Issues in Otolaryngology: Principles and Practice of

- Collaboration. Arriaga and Day (eds.), Lippincott Williams & Wilkins, 1999.
42. Smith, M.D., Watson, J.C., Maroon, J.C.: Percutaneous Approaches to Lumbar Discectomy. In Spine Surgery. Benzel, E. (ed), 1999.
 43. Kennerdell, J.S.; Cockerham, K.P., Maroon, J.C., Rothfus, W.E.: Practice Diagnosis and Management of Orbital Disease. Butterworth-Heinemann, 2001.
 44. Maroon, J.C.; Field, M.; Lovell, M.; Collins M.; Bost, J.: The evaluation of athletes with cerebral concussion. Proceedings of the Congress of Neurological Surgeons In Clinical Neurosurgery, vol. 49, pp 319-322, 2002.
 45. Bejjani, G.K.; Cockerham, K.P.; Maroon, J.C.; Kennerdell, J.S.: Orbital Tumors. In Youmans Neurological Surgery, Vol. 1, Winn, H.R. (ed.), Saunders, pp1371-1380, 2004.
 46. Bailes, J.E.; Maroon, J.C.; Cantu, R.C.: Athlete with Spinal Injury. In Spine Surgery Techniques, Complication Avoidance and Management 2nd Edition. Benzel, E.C. (Ed.), Elsevier, pp. 1935-1953, 2005.
 47. Maroon, J.C.; Bost, J: Fish Oil The Natural Anti-Inflammatory. Basic Health, California, 172 pp. 2006.
 48. Maroon, J.C., Bost, J: Extending life: The new science of aging—how to activate longevity genes and increase quality and length of life. In Anti-Aging Therapeutics, Vol. IX. Klatz, R and Goldman R (Eds.), A4M Publications, Chicago, IL, 231-233, 2007.
 49. Maroon, JC: The Longevity Factor: How Resveratrol and Red Wine can Activate Genes for a Longer and Healthier Life, Simon & Schuster Atria Books, New York, NY, Jan 1, 2009.
 50. Smoliga J, Bost J, Maroon JC: Potential benefits of Resveratrol supplementation for optimizing health and preventing chronic diseases. Anti-Aging Therapeutics, Vol XI, Klatz Goldman (eds), A4M Publications, pp 361-368, 2009.
 51. Maroon JC, Bost J: Cancer prevention with phytonutrients: Reviewing the latest research on resveratrol, Omega-3, green tea, curcumin, genstein and lycopene. Anti-Aging Therapeutics, Vol. XIII, Klatz Goldman (eds), A4M Publications, Chapter 7, 2010.
 52. Maroon JC, Bost J: Concussion management at the NFL, college, high school and youth sports levels. Clinical Neurosurgery Vol. 58, Proceedings of the 2010 Congress of Neurological Surgeons, San Francisco, CA. Lippincott Williams Wilkins, pp 51 – 56, 2011.

53. Maroon JC, Kilham C, Bost J: The Science of Cocoa. Published by ResVitale, Tampa, FL, 2011.
54. Gardner PA, Maroon JC, Kassam AB: Tumors of the Orbit. Youmans Textbook of Neurological Surgery, 6th edition. Winn HR (ed), Elsevier Saunders, Philadelphia, pp 1655-1665, 2011.
55. Pardini J, Bailes JE, Maroon JC: Mild traumatic brain injury in adults and concussion in sports. Youmans Textbook of Neurological Surgery, 6th edition. Winn HR (ed), Elsevier Saunders, Philadelphia, pp 3380-3389, 2011.
56. Blaylock RL, Petraglia AL, Maroon JC, Bost JW: Approach to concussion and associated neurodegeneration. Encyclopedia of Clinical Anti-aging Medicine and Regenerative Biomedical Technologies, American Academy of Anti-aging Medicine, 2012, pp 239-260.
57. Watt TJ, Amen DG, Blaylock RL, Petraglia AL, Maroon JC, Bost JW, Cebula C: Non-Pharmacological Interventions. Encyclopedia of Clinical Anti-aging Medicine and Regenerative Biomedical Technologies, American Academy of Anti-aging Medicine, 2012, pp 261-280.

AUDIO/VISUALS

1. Maroon, J.C. The Initial Management of Football Head and Neck Injuries. (Movie.) Jointly produced through the Division of Intercollegiate Athletics and the Medical Education Resource Program, Indiana University, Indianapolis, Indiana, 1971.
2. Maroon, J.C. and Klein, J.C. Microdiscectomy of the Lumbar Spine. (Patient Education Videotape.) Produced by the Department of Neurological Surgery and the Media Services Department, Allegheny General Hospital, Pittsburgh, Pennsylvania, 1988.
3. Maroon, J.C. and Bailes, J.E. Athletic Injuries of the Cervical Spine. (Educational Videotape/Booklet presented by Glaxo.) Synapse Publications, Inc., 1991.

MEDIA

1. Maroon, J.C.: EFA and Inflammation. WSSH Radio with Hank Baughman, November 21, 2004.
2. Maroon, J.C.: EFA and Inflammation. WTAE TV with Marilyn Brooks, November 2004.

3. Maroon, J.C.: No Fish Tale: Diet Can Relieve Joint Pain. Tribune Review newspaper, Alyson Walls, writer, November 11, 2004.
4. Maroon, J.C. Omega-3 EFA and Pain Relief: Study results. Syndicated video and print release to 250 media markets. January, 2005.
5. Maroon, J.C.: Functional Medicine Update with Jeffrey Bland, Ph.D., February 2005.
6. Maroon, J.C.: EFA and Inflammation. WPXI TV News interview, April 2005.
7. Maroon, J.C.: EFA and Inflammation, Good Life radio interview with Jesse Dylan, Canada, April 2005.
8. Maroon JC, Donahue B: Resveratrol and longevity. KDKA-TV News interview with Kristine Sorenson, January, 2010.

LETTERS

1. Maroon, J.: Venous air embolus. Lancet 1:605, 1973.
2. Maroon, J.C., Robinson, A.G. and Kennerdell, J.S.: Treatment of acromegaly. Lancet 1:226, 1975.
3. Maroon, J.C., Albin, M.S. and Jannetta, P.J.: Air embolism-Diagnosis and treatment. New Eng. J. Med. 293:1211, 1975.
4. Maroon, J.C.: Severely deformed infants. New Eng. J. Med. 295:115, 1976.
5. Maroon, J.C. and Bissonette, D.: Late effects of botulinum intoxication. JAMA 238:129, 1977.
6. Maroon, J.C.: Optic nerve sheath meningioma. Arch. Neurol. 38:329, 1981.
7. Teeple, E., Maroon, J.C., Rueger, R.: Hemimacroglossia and unilateral ischemic necrosis of the tongue in a long-duration neurosurgical procedure. Anesthesiology 64(6):845-846, 1986.
8. Chedid, M.K., Maroon, J.C., Bagshaw, M.A.: Radiation therapy of hemangioendotheliomas. Neurosurgery 20(6):995-996, 1987.
9. Maroon, J.C. and Onik, G.M.: Percutaneous discectomy. J. Neurosurg. 67:151, 1987.

10. Kennerdell, J.S. and Maroon, J.C.: Orbital decompression for dysthyroid orbitopathy. J. Neurosurg. 70:816, 1989.
11. Maroon, J.C.: Primary intraosseous orbital hemangioma: A case report and review of literature. Neurosurg. Vol. 35, No. 6, 1994.
12. Maroon, J.C.: Percutaneous endoscopic lumbar discectomy: Minimally invasive, but perhaps only minimally useful? Surg. Neurol 43:534-41, 1995.

SCIENTIFIC PAPERS

1. Childress, R.H., Maroon, J.C. and Genovese, P.D.: Mitral insufficiency secondary to ruptured chordae tendineae. Ann. Int. Med. 65:232-244, 1966.
2. Maroon, J.C. and Lukemeyer, G.T.: Primary aldosteronism: Cast report with plasma renin suppression. J. Indiana State Med. Assn. 60:27-30, 1967.
3. Maroon, J.C.: What interns think of internships. Hosp. Phys.:70-72, May 1967.
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ABSTRACTS-

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 8. Leavitt, M.L., Yudofsky, S.C., Maroon, J.C., Bavitz, M.B., Riley, E.J.: Continuous systemic administration of beta-blockers reduces aggressive behavior. J. Clin. Pharmacol. 28:932, 1988.
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 10. Harris, M.E., Sternau, L.L., Maroon, J.C., Lust, W.D.: CSF neurotransmitter and early predictors of outcome in head injury. Poster-Second Prize. AANS, Washington, DC, April, 1989.
 11. Leavitt, M.L., Maroon, J.C., Riley, E.J., Yudofsky, S.C.: Antiaggressive effect of buspirone in 6-hydroxydopamine-treated rats. FASEB Journal 3:A295, 1989.

12. Leavitt, M.L., Maroon, J.C., Price, T.R.P.: Effects of central versus subcutaneous infusion of buspirone on aggression. *Physiologist* 32:213, 1989.
13. Leavitt, M.L., Loesch, D.V., Maroon, J.C.: Intracranial pressure monitoring in spontaneously hypertensive rats. *Society of Neuroscience* 15:596, 1989.
14. Leavitt, M.L., Bailes, J.E., Magovern, G., Kao, R., Elrifai, A.M., Teeple, E., Maroon, J.C., Shih, T.S., Marquardt, M.: Ultra-profound hypothermic cardiac arrest in total blood-substituted dogs. *Cardiovascular Science and Technology: Basic and Applied* I:116-118, 1989.
15. Leavitt, M.L., Bailes, J.E., Elrifai, A.M., Teeple, E., Shih, T.S., Marquardt, M., Maroon, J.C.: Survival from prolonged cardiac arrest in totally exsanguinated hypothermic dogs. 74th Annual Meeting, FASEB, Washington, DC, April 1990.
16. Teeple, E., Bailes, J.E., Leavitt, M.L., Shih, T.S., Marquardt, M., Elrifai, A.M., Maroon, J.C.: Ultra-profound hypothermia, complete blood substitution, cardiac arrest and low flow perfusion in a dog model: A report. Annual Meeting, Society of Neurosurgical Anesthesia and Critical Care, Honolulu, Hawaii, March 1990.
17. Elrifai, A.M., Bailes, J.E., Leavitt, M.L., Shih, T.S., Teeple, E., Marquardt, M., Maroon, J.C.: The use of blood substitutes for whole body perfusion in ultra-profound hypothermic cardiac arrest. 92nd Meeting, Association of Clinical Scientists, Vancouver, British Columbia, May 1990.
18. Leavitt, M.L., Bailes, J.E., Shih, T., Elrifai, A.M., Teeple, E., Hoffman, W.E., Maroon, J.C.: Outcome following cooling to near the freezing point in totally blood-substituted dogs. *Soc. Neuroscience Abst.* 16:740, 1990.
19. Leavitt, M.L., Loesch, D.B., Maroon, J.C.: Effect of intraventricular atrial natriuretic factor of intracranial pressure in the awake rat. *Physiologist* 33:A39, 1990.
20. Leavitt, M.L., Devenyi, C., Riley, J., Price, T.R.P., Maroon, J.C.: Test of the buspirone metabolite I-PP on induced aggressiveness in the rat. *FASEB J* 5(4):A487, 1991.
21. Gianaris, P.G., Knepper, P., Maroon, J.C., Rumsdina C., Bailes, J.E., McLone, D.: Embryonic spinal cord transplantation: an electrophoretic analysis of graft viable tissue. 7th Annual Meeting of the Joint Section of Disorders of the Spine and Peripheral Nerves, Rancho Mirage, California, February 14, 1991.
22. Gianaris, P., Bailes, J.E., Maroon, J.C.: CO₂ laser assisted embryonic spinal cord transplantation I. *Lasers in Surgery and Medicine, Supplement* 3, 31, 1991.

23. Bailes, J.E. and Maroon, J.C.: Preliminary experience with NeuroLink: A neurosurgical wide area network. Congress of Neurological surgeons, 44th Annual Meeting, Chicago, IL, October 1994.
24. Quigley, J.R., Bost, J., Maroon, J.C., Elrifai, A., and Panahandeh, J: Outcome following microdiscectomy. American Association of Neurological Surgeons 63rd Annual Meeting, Orlando, FL, April 1995.
25. Quigley, J., Cantella, D., Vidovich, D., Wilberger, J., and Maroon, J.C.: Simplified method of predicting the outcome following very severe head injury. American Association of Neurological surgeons 63rd Annual Meeting, Orlando, FL, April 1995.
26. Leavitt, M.L., Acevedo, H.F., Acevedo, E.A, Krichevsky, A., Gorewit, R., and Maroon, J.C.: Brain glioma treatment by monoclonal antibodies to human chorionic gonadotropin. Society for Neurosciences 25th Annual Meeting, San Diego, California, November, 1995.
27. Collins MW, Field M, Maroon JC, Lovell MR, Bost J: The use of ImPACT to manage sports related concussion: Validity data and implications for return to play. Proceedings of the Congress of Neurological Surgeons Annual Meeting, 2003.
28. Bejjani GK, Maroon JC, Zabramski J, Barranco F, Smith K, Green B, Levi AD, Payner T, Guthikonda M, Bost J: Durasis: A Novel Dural Substitute. Results of a Multi-Center Study. North American Skull Base Society (NASBS), February, 2004, New Orleans, LA.
29. Gim S, Skledar SJ, Fedutes-Henderson B, Ansani N, Bost J, Maroon JC: Evaluating a Novel Use of Etanercept for Chronic Discogenic Pain. American Society of Hospital Pharmacists Midyear Clinical Meeting, December 4-9, 2004, Orlando, FL.
30. Ablaa AA, Bost J, El-Kadi H, Maroon JC, McHugh S, Ablaa A: Evaluation of Lumbar Fusion Extension Surgery. American Association of Neurological Surgeons Annual Meeting, May 1-5, 2004, Orlando, FL.
31. Ablaa AA, Bost J, El-Kadi H, Maroon JC, McHugh S, Ablaa A: Evaluation of Post-Lumbar Laminectomy Spondylolisthesis. American Association of Neurological Surgeons Annual Meeting, May 1-5, 2004, Orlando, FL.
32. Ablaa AA, Bost J, El-Kadi H, Maroon JC, McHugh S, Ablaa A: Outcome of Lumbar Spinal Fusion on the Elderly (75 year and older). American Association of Neurological Surgeons Annual Meeting, May 1-5, 2004, Orlando, FL.

33. El-Kadi H, Abla AA, Bost J, Maroon JC, Kaushik D, Murty V, Mullen B: Outcome of Long Segment Cervical Fusion with a Rigid Fixed-angle Screw Plating System. American Association of Neurological Surgeons Annual Meeting, May 1-5, 2004, Orlando, FL.
34. EL-Kadi H; Abla A; Bost J; Maroon JC; Kaushik D; Murty V, Mullen B: Pedicle screw fixation for mechanical low back pain. American Association of Neurological Surgeons Annual Meeting, May 1-5, 2004, Orlando, FL.
35. Collins, MW, McClincey M, Lovell MR, Stump J, Lowe A, Maroon JC: Cognitive recovery patterns following sports-related concussion. *British Journal of Sports Medicine*, 38: 654-664, 2004.
36. Paluzzi A, Tormenti M, Koutourousiou M, Stefko S, Fernandez-Miranda JC, Gardner P, Snyderman CH, Maroon J: "Round the clock" surgical access to the orbit. *Skull Base* 22 (Suppl 1):51, Feb 2012.
37. Koutourousiou M, Stefko ST, Paluzzi A, Tormenti MJ, Fernandez-Miranda JC, Snyderman CH, Maroon J, Gardner PA: Combined endoscopic endonasal transorbital approach with transconjunctival-medial orbitotomy for excisional biopsy of the optic nerve-a technical note. *Skull Base* 22(Suppl 1):65, Feb 2012.
38. Paluzzi A, Koutourousiou M, Tormenti M, Fernandez-Miranda J, Snyderman C, Gardner P, Maroon JC: "Round the clock" surgical access to the orbit. *J Neurol Surg B*. 73(suppl 2): 133-4, June 2012.

NATIONAL AND INTERNATIONAL PRESENTATIONS and POSTERS

1. Maroon, J.C.: Surgery at the Base of the Skull. Basal Skull Surgery Symposium, San Francisco, California, April 5-7, 1984
2. Maroon, J.C.: Surgical Treatment of Orbital Tumors: Indications and Techniques. American Association of Neurological Surgeons, April 8-13, 1984,
3. Maroon, J.C.: Diagnosis and Management of Disc Disease. Monsour Medical Center, Pittsburgh, Pennsylvania, June 12, 1984.
4. Maroon, J.C.: Neurological Treatment for Fitness and Sports Injury. Congress of Neurological Surgeons Annual Meeting, New York, September 30 - October 5, 1984.
5. Maroon, J.C.: Diagnosis and Treatment of Stroke. St. John's Medical Center, Steubenville, Ohio, October 15, 1984.

6. Maroon, J.C.: Fractures: Common Sense Solutions for Common Problems. Cervical Spine Injuries Seminar, Station Square, Pittsburgh, Pennsylvania, November 14, 1984.
7. Maroon, J.C.: Head and Neck Injuries in the Athlete. Fifth Annual Sports Medicine Seminar, Conemaugh Valley Memorial Hospital, Johnstown, Pennsylvania, March 6, 1995.
8. Maroon, J.C.: Orbital and Parasellar Tumors. Laser Association of Neurological Surgery International, Houston, Texas, March 28-31, 1985.
9. Maroon, J.C.: Orbital Approaches, Microsurgery Workshop, St. Louis, Missouri, April 18-1, 1985.
10. Maroon, J.C.: Head and Neck Injuries, Highland Sports Medicine Clinic, Highland High School, April 20, 1985.
11. Maroon, J.C.: Neurological Aspects of Sports Medicine. American Association of Neurological Surgeons Annual Meeting, Atlanta, Georgia, April 21-15, 1985.
12. Maroon, J.C.: Neurological Consequences of Sports Injuries. Regional Adolescent Trauma Meeting, Station Square, Pittsburgh, Pennsylvania, May 15, 1985.
13. Maroon, J.C.: The Diagnosis and Treatment of Tumors of the Base of the Skull, Microsurgery in the Treatment of Ruptured Lumbar Discs and Syringomyelia. 35th Annual Meeting of the Congress of Neurological Surgeons, Honolulu, Hawaii, September 29 - October 4, 1985.
14. Maroon, J.C.: Indications for Surgery in Subarachnoid Hemorrhage. Beaver County Medical Society, November 16, 1985.
15. Maroon, J.C.: The Microsurgical and Percutaneous Treatment of Lumbar Disc Disease. Interurban Neurosurgical Society, Chicago, Illinois, March 7, 1986.
16. Maroon, J.C.: The Microsurgical and Percutaneous Treatment of Lumbar Disc Disease. Post-Graduate Course on Skeletal Radiology, Phoenix, Arizona, March 15-20, 1986.
17. Maroon, J.C.: The Neurosurgical Management of Cervical Disc Disease. Post-Graduate Course on Skeletal Radiology, Phoenix, Arizona, March 15-20, 1986.
18. Maroon, J.C.: Percutaneous Lumbar Discectomy. Annual Meeting of the American Association of Neurological Surgeons, Denver, Colorado, April 13-17, 1986.

19. Maroon, J.C.: Intraoperative Cranial Neurosonography Correlative Imaging with CT and MRI, American Roentgen Ray Society, Scientific Program, XVIII, Washington, D.C., April 18, 1986.
20. Maroon, J.C.: Microsurgical and Percutaneous Removal of Lumbar Disc. Columbia University, May 21-22, 1986.
21. Maroon, J.C.: New Approaches to Disc Disease - Percutaneous Lumbar Discectomy. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, September 16, 1986.
22. Maroon, J.C.: Presidential Address. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, September 16, 1986.
23. Maroon, J.C.: The Neurosurgeon's Role in Management of Orbital Tumors. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, September 18, 1986.
24. Maroon, J.C.: Surgical Treatment of Brain Tumors. Japanese Neurosurgical Society, Tokyo, Japan, October 1-4, 1986.
25. Maroon, J.C.: Percutaneous Automated Lumbar Discectomy. Japanese Neurosurgical Society, Tokyo, Japan, October 1-4, 1986.
26. Maroon, J.C.: Advanced Orbital Surgery: Techniques and practical Experience, Techniques of Transcranial Orbital Surgery. Allegheny General Hospital, Pittsburgh, Pennsylvania, October 24-25, 1986.
27. Maroon, J.C.: Athletic Sports Injuries. St. John's Hospital, Steubenville, Ohio, November 17, 1986.
28. Maroon, J.C.: Neurosurgical Management of Craniocerebral and Spinal Cord Trauma, Second San Antonio International Symposium on Neuroanesthesia, San Antonio, Texas, February 6, 1987.
29. Maroon, J.C.: Advanced Technology - New Neurosurgical Techniques and Instrumentation. Second San Antonio International Symposium on Neuroanesthesia, San Antonio, Texas, February 6, 1987.
30. Maroon, J.C.: Advanced Neurosurgical Laser Course, Allegheny General Hospital, Pittsburgh, Pennsylvania, April 3-4, 1987.

31. Maroon, J.C.: Advanced Orbital Surgery Course, Techniques of Transcranial Orbital Surgery. Allegheny General Hospital, Pittsburgh, PA April 10-11, 1987.
32. Maroon, J.C.: New Techniques in the Treatment of Lumbar Disc Disease. Annual Meeting of the American Association of Neurological Surgeons, Dallas, Texas, May 4-6, 1987.
33. Maroon, J.C.: Automated Percutaneous Discectomy. Annual Meeting of the American Association of Neurological Surgeons, Dallas, Texas, May 4-6, 1987.
34. Maroon, J.C.: Effective Chronic Continuous Intraventricular Propranolol on Aggressive Behavior. Neurosurgical Society of America, Glendon Beach, Oregon, May 13, 1987.
35. Maroon, J.C.: Percutaneous Discectomy Workshop, Allegheny General Hospital, Pittsburgh, Pennsylvania, May 16-17, 1987.
36. Maroon, J.C.: Automated Percutaneous Discectomy: Preliminary Experience. Eighth European Congress of Neurosurgery, Barcelona, Spain, September 6-11, 1987.
37. Maroon, J.C.: Surgical Approaches to the Orbit. 37th Annual Meeting of the Congress of Neurological Surgeons, Baltimore, Maryland, October 25, 1987.
38. Maroon, J.C.: Treatment Alternatives in Lumbar Disc Disease. 37th Annual Meeting of the Congress of Neurological Surgeons. Baltimore, Maryland, October 18, 1987.
39. Maroon, J.C.: Acute Head and Neck Injuries in Athletes. Post-Graduate Day in Family Practice, Wheeling Hospital, Wheeling, West Virginia, November 5, 1987.
40. Maroon, J.C.: Spinal Trauma: New Approaches to Therapy. The 6th Annual Trauma Symposium, The McLure House, Wheeling, West Virginia, November 12, 1987.
41. Maroon, J.C.: Athletic Head and Neck Injuries. The Emstar 6th Annual Trauma Symposium, Ohio Valley Medical Center, Wheeling, West Virginia November 14, 1987.
42. Maroon, J.C.: Percutaneous Aspiration of Herniated Lumbar Discs. Society of British Neurosurgeons, Oxford, England, April 13-15, 1988.
43. Maroon, J.C.: Positioning for Spinal Surgery. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April 24-28, 1988.
44. Maroon, J.C.: Spinal Injuries in Athletes. American Association of Neurological

- Surgeons Annual Meeting, Toronto, Canada, April 24-28, 1988.
45. Maroon, J.C.: Techniques of Transcranial Orbital Surgery. Advanced Orbital Surgery Course, Allegheny General Hospital, Pittsburgh, Pennsylvania, May 13-14, 1988.
 46. Maroon, J.C.: Management of Orbital Lesions. Neurosurgical Nurse's Conference, San Francisco, California, June 2-3, 1988.
 47. Maroon, J.C.: Percutaneous Automated Discectomy. Neurosurgical Nurse's Conference, San Francisco, California, June 2-3, 1988.
 48. Maroon, J.C.: Nucleotome Workshop for Percutaneous Discectomy. Korean Society of Neurological Surgeons, Seoul, Korea, June 17-24, 1988.
 49. Maroon, J.C.: Surgical Treatment of Orbital Tumors. Korean Society of Neurological Surgeons, Seoul, Korea, June 17-24, 1988.
 50. Maroon, J.C.: Anterior and Anterolateral Approaches to the Cranial Base, Panel Discussion. International Symposium on Cranial Base Surgery, Pittsburgh, Pennsylvania, September 13-17, 1988.
 51. Maroon, J.C.: Orbital Tumors. International Symposium on Cranial Base Surgery, Pittsburgh, Pennsylvania, September 13-17, 1988.
 52. Maroon, J.C.: Spinal Cord Injury and Regeneration. Congress of Neurological Surgeons Annual Meeting, Seattle, Washington, September 24-29, 1988.
 53. Maroon, J.C.: Percutaneous Automated Discectomy. Congress of Neurological Surgeons Annual Meeting, Seattle, Washington, September 24-19, 1988.
 54. Maroon, J.C.: Biomechanics of the Lumbar Spine. Congress of Neurological Surgeons Annual Meeting, Seattle, Washington, September 24-29, 1988.
 55. Maroon, J.C.: New Approaches to Lumbar Disc Disease. Congress of Neurological Surgeons Annual Meeting, Seattle, Washington, September 24-29, 1988.
 56. Maroon, J.C.: Spinal Cord Injury and Regeneration - An Overview of the Problem. Pittsburgh, Pennsylvania, November 9-11, 1988.
 57. Maroon, J.C.: Lasers in Orbital Surgery. Latin American Congress of Neurological Surgeons, Acapulco, Mexico, November 13-19, 1988.

58. Maroon, J.C.: Percutaneous Discectomy. Latin American Congress of Neurological Surgeons, Acapulco, Mexico, November 13-19, 1988.
59. Maroon, J.C.: Results of Percutaneous Discectomy National Cooperative Study. American Association of Neurological Surgeons Annual Meeting, Washington, D.C., April 3-8, 1989.
60. Maroon, J.C.: The Microsurgical and Percutaneous Treatment of Herniated Lumbar Discs. American Neurological Society Meeting, Chicago, Illinois, April 15, 1989.
61. Maroon, J.C.: Development of a Robotically Controlled Operating Microscope. Neurosurgical Society of American Meeting, Bermuda, May 11, 1989.
62. Maroon, J.C.: Percutaneous Discectomy: Which Therapy, Which Patient. International Symposium on the State-of-the-Art of Percutaneous Lumbar Discectomy, Marbella, Spain, May 25, 1989.
63. Maroon, J.C.: Automated Percutaneous Lumbar Discectomy: The American Experience. International Symposium on the State-of-the-Art of Percutaneous Lumbar Discectomy, Marbella, Spain, May 25, 1989.
64. Leavitt, M.L., Bailes, J.E., Magovern, G., Kao, R., Elrifai, A.M., Teeple, E., Maroon, J.C., Shih, T.S. and Marquardt, M.: Ultra-Profound Hypothermic Cardiac Arrest in Totally Blood-Substituted Dogs. Conference for Cardiovascular Science and Technology, Louisville, Kentucky, December 2, 1989.
65. Bailes, J.E., Leavitt, M.L., Maroon, J.C., Teeple, E., Shih, T.S., Elrifai, A. and Marquardt, M. Ultra-Profound Hypothermia and Blood Substitution. Lende Neurosurgical Conference, Snowbird, Utah, February 5, 1990.
66. Teeple, E., Bailes, J.E., Leavitt, M.L., Maroon, J.C., Shih, T.S., Marquardt, M. and Elrifai, A. Ultra-Profound Hypothermia, Complete Blood Substitution, Cardiac Arrest and Low-Flow Perfusion in a Dog Model. Society of Neurosurgical Anesthesia and Critical Care, Waikiki, Hawaii, March 14, 1990.
67. Maroon, J.C.: Diagnosis and Microsurgical Approach to Far Lateral Disc Herniation in the Lumbar Spine. American Association of Neurological Surgeons Annual Meeting, Nashville, Tennessee, April 28, 1990.
68. Maroon, J.C.: The Management of Recurrent Spheno-Orbital Meningiomas. American Association of Neurological Surgeons Annual Meeting, Nashville, Tennessee, April 28, 1990.

69. Maroon, J.C.: Management of Lumbar Disc: Percutaneous Automated Discectomy. American Association of Neurological Surgeons Annual Meeting, Nashville, Tennessee, April 28, 1990.
70. Bailes, J.E., Leavitt, M.L., Maroon, J.C., Teeple, E., Elrifai, A., Shih, T.S. and Marquardt, M., Potential for Ultra-Profound Hypothermia and Blood Substitution: A Model System. Symposium on Hypothermic Medicine, CRYO '90, Binghamton, New York, June 17, 1990.
71. Bailes, J.E., Leavitt, M.L., Elrifai, A.M., Shih, T.S., Teeple, E., Marquardt, M and Maroon, J.C.: The Use of Ultra-Profound Hypothermia in Totally Exsanguinated and Blood-Substituted Canine Model: I. The Method. CRYO '90, Binghamton, New York, June 18, 1990.
72. Elrifai, A.M., Bailes, J.E., Leavitt, M.L., Shih, T.S., Teeple, E., Marquardt, M. and Maroon, J.C.: The Use of Ultra-Profound Hypothermia in Totally Exsanguinated and Blood-Substituted Canine Model: II. The Outcome. CRYO '90, Binghamton, New York, June 18, 1990.
73. Elrifai, A.M., Loesch, D.V., Leavitt, M.L., Bailes, J.E., Shih, T.S., Maroon, J.C., Ciongoli, K.A. and Devenyi C.: Rewarming Rate and Survival Post Induced Ultra-Profound Hypothermia. Amer. Fed. Clin. Research Meeting, New York, New York, October 1990.
74. Leavitt, M.L., Bailes, J.E., Shih, T., Elrifai, A.M., Teeple, E. And Maroon, J.C.: Outcome Following Cooling to Near the Freezing Point in Totally Blood-Substituted Dogs, Society for Neuroscience Meeting, St. Louis, Missouri, October 1990.
75. Bailes, J.E., Leavitt, M.L., Maroon, J.C., Teeple, E., Elrifai, A., Shih, T.S. and Marquardt, M.: Ultra-Profound Hypothermia and Asanguineous Blood-Sustained Cardiac Arrest in a Canine Model. Congress of Neurological Surgeons Annual Meeting, Los Angeles, California, October 20, 1990.
76. Maroon, J.C.: Current Techniques in Lumbar Disc Disease. Congress of Neurological Surgeons Annual Meeting, Los Angeles, California, October 20, 1990.
77. Maroon, J.C.: Microsurgery and the Professional Athlete. NFL PA Retired Players Convention, Oglebay, West Virginia, Mary 24, 1991.
78. Wilberger, J.E., Haag, B. and Maroon, J.C.: Cumulative Effects of Football Related Minor Head Injury. Congress of Neurological Surgeons Annual Meeting, New Orleans,

- Louisiana, April 20-25, 1991.
79. Quigley, M.R. and Maroon, J.C.: The Relation of Survival to the Extent of Resection in Supratentorial Malignant Glioma Patients. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 80. Leavitt, M.L., Loesch, D.V. and Maroon, J.C.: Poster #1137 - Cerebrospinal Blood Pressure: Effects of Intracerebroventricular Infusions of Artificial CSF and Atrial Natriuretic Peptide in the Conscious Rat. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 81. Quigley, M.R. and Maroon, J.C.: Poster #1237 - The Role of Discography Prior to Automated Percutaneous Discectomy. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 82. Gianaris, P., Bailes, J.E. and Maroon, J.C.: Poster #1248 - Successful Embryonic Transplantation is Distinct from Normal Developmental Neurobiology: An Electrophoretic Assay of Visible Graft Tissue. Congress of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 83. Quigley, M.R., Loesch, D.V., Shih, T.S., Marquardt, M. And Maroon, J.C.: Poster #1309 - Intracranial Cryosurgery in a Canine Model. American Association of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 84. Maroon, J.C.: Refinements of Techniques for Lumbar Disc Surgery. American Association of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 85. Maroon, J.C.: Spectrum of Athletic Injury. American Association of Neurological Surgeons Annual Meeting, New Orleans, Louisiana, April 20-25, 1991.
 86. Maroon, J.C.: Sports Injuries in Neurosurgery. Congress of Neurological Surgeons Annual Meeting, Orlando, Florida, October 1991.
 87. Maroon, J.C.: The Diagnosis and Treatment of Surgical Lesions of the Visual System - Optic Nerve to Occipital Cortex. Special Course. Congress of Neurological Surgeons Annual Meeting, Orlando, Florida, October 1991.
 88. Maroon, J.C.: Surgical Management of Recurrent Sphenoid Wing Meningiomas. IV Congresso Da Academia Brasileira de Neurocirurgia, Sao Paulo, Brazil, November 1991.
 89. Maroon, J.C.: Surgical Approaches to the Orbit. IV Congresso Da Academia Brasileira

- de Neurocirurgia, Sao Paulo, Brazil, November 1991.
90. Maroon, J.C.: Percutaneous Discectomy--What's New and What's Coming. Greater Pittsburgh Rehabilitation Hospital, Monroeville, Pennsylvania, November 1991.
 91. Maroon, J.C.: The Lumbar Disc. American Association of Neurological Surgeons Annual Meeting, San Francisco, California, April 1992.
 92. Maroon, J.C.: Recent Trends in Spinal Surgery. The American College of Surgeons Annual Meeting, New Orleans, Louisiana, October 1992.
 93. Maroon, J.C., Onik, G., Quigley, M.R., et. al: Cryosurgery Re-Visited for the Removal and Destruction of Brain, Spinal and Orbital Tumors. Congress of Neurological Surgeons Annual Meeting, Washington, DC, October 1992.
 94. Ominous Prognostic Indicators Following Head Injury. Congress of Neurological Surgeons Annual Meeting, Washington, DC, October 1992.
 95. Maroon, J.C.: Comprehensive Management of Lumbar Disc Disease. Congress of Neurological Surgeons Annual Meeting, Washington, DC, October 1992.
 96. Maroon, J.C.: Cryosurgery in the Treatment of Brain, Spinal and Orbital Tumors. Neurosurgical Society of America Annual Meeting, Boca Raton, Florida, March 1993.
 97. Maroon, J.C.: Tumors of the Orbit and Periorbital Region. American Association of Neurological Surgeons Annual Meeting, Boston, Massachusetts, April 1993.
 98. Maroon, J.C.: Cryosurgery in the Treatment of Brain, Spinal and Orbital Tumors. Poster Presentation. American Association of Neurological Surgeons Annual Meeting, Boston, Massachusetts, April 1993.
 99. Maroon, J.C.: Surgical Management of Orbital Tumors - Experience with 900 Cases. The 6th Japanese Society for Skull Base Surgery, Nagoya, Japan, June 30-July 1, 1994.
 100. Maroon, J.C.: Treatment of Lumbar Disc Disease, State-of-the-Art. American Association of Neurological Surgeons, Annual Meeting, San Diego, California, April 1994.
 101. Maroon, J.C.: Percutaneous Spine Techniques: Discography, APLD, and Laser. Congress of Neurological Surgeons 44th Annual Meeting, Chicago, Illinois, October 1994.

102. Maroon, J.C.: How to Evaluate a Practice Opportunity. Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois, October 1994.
103. Maroon, J.C.: Percutaneous Lumbar Techniques. Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois, October 1994.
104. Maroon, J.C.: The Management of Spine and Disc Disorders. St. John Medical Center Fall Seminar, Steubenville, Ohio, November 1994.
105. Maroon, J.C.: Surgical Management of Spheno-Orbital Meningiomas. Pan Pacific Skull Base Surgery Workshop, Island of Lanai, Hawaii, March 1995.
106. Maroon, J.C.: Dissection of Cranio-Orbital Approaches (Part I and II). Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois, October 1994.
107. Maroon, J.C.: Change in Health Care and Impact on Neurosurgery. American Association of Neurological Surgeons Annual Meeting, Orlando, Florida, April 1995.
108. Maroon, J.C.: Treatment of Lumbar Disc Disease: State of the Art. American Association of Neurological Surgeons Annual Meeting, Orlando, Florida, April 1995.
109. Maroon, J.C.: Concepts of Minimally Invasive Surgery. Joint International Congress of Minimally Invasive Techniques in Neurosurgery and Otolaryngology, Pittsburgh, Pennsylvania, June 1995.
110. Maroon, J.C.: Indications and Operative Techniques for Percutaneous Discectomy and Microsurgical Discectomy. Joint International Congress of Minimally Invasive Techniques in Neurosurgery and Otolaryngology, Pittsburgh, Pennsylvania, June 1995.
111. Maroon, J.C.: Cerebral Monitoring Techniques and Lasers in Surgery. Joint International Congress of Minimally Invasive Techniques in Neurosurgery and Otolaryngology, Pittsburgh, Pennsylvania, June 1995.
112. Maroon, J.C.: Surgical Management of Cranio-Orbital Tumors. Joint International Congress of Minimally Invasive Techniques in Neurosurgery and Otolaryngology, Pittsburgh, Pennsylvania, June 1995.
113. Maroon, J.C.: How to Evaluate a Practice Opportunity. Congress of Neurological Surgeons Annual Meeting, San Francisco, California, October 1995.
114. Maroon, J.C.: Is there a Future for Percutaneous Intradiscal Therapy? Congress of Neurological Surgeons Annual Meeting, San Francisco, California, October 1995.

115. Maroon, J.C.: Orbital Tumors. Congress of Neurological Surgeons Annual Meeting, San Francisco, California, October 1995.
116. 6th Bangkok Neurosurgical Forum, Bangkok, Thailand, February 1996.
117. Maroon, J.C.: Introduction and Overview of Sports Related Concussion. Sports Related Concussion and CNS Injuries, Orlando, Florida, February, 1997.
118. Maroon, J.C.: Surgical Approaches to the Orbit. 18th Annual Meeting of the Egyptian Society of Neurological Surgeons. Cairo, Egypt, March 1997.
119. Maroon, J.C.: Minimally Invasive Treatment of Lumbar Disc Disease. 18th Annual Meeting of the Egyptian Society of Neurological Surgeons. Cairo, Egypt, March, 1997.
120. American Association of Neurological Surgeons 65th Annual Meeting, April, 1997.
121. Pennsylvania Athletic Trainer's Association, May, 1997.
122. World Association of Lebanese Neurosurgeons, Beirut, Lebanon, July, 1997.
123. Maroon, J.C.: Cranio-orbital Surgery, Congress of Neurological Surgeons 47th Annual Meeting, New Orleans, Louisiana, September 1997.
124. Maroon, J.C.: Greast Expectations: The Joy of a Surgical Career, 83rd Clinical Congress of the American College of Surgeons, Chicago, Illinois, October 1997.
125. Maroon, J.C.: The Past, Present and Future of Neurosurgery. The American Academy of Pediatric Neurosurgery and The Pediatric Neurosurgical Fellowship Directors Annual Meeting, Pittsburgh, Pennsylvania, November, 1997.
126. Maroon, J.C.: Neurological Injuries and the Athlete. American Association of Neurological Surgeons 66th Annual Meeting, Philadelphia, Pennsylvania, April 1998.
127. Maroon, J.C.: Diagnosis and Management of Foraminal and Far Lateral Lumbar Disc Herniations. American Association of Neurological Surgeons 66th Annual Meeting, Philadelphia, Pennsylvania, April, 1998.
128. Maroon, J.C.: Inhibition of Postoperatie Peridural Fibrosis and Reduction of Fibrosis Related Symptoms with a Bioresorbable Carbohyhydrate Gel: Adcon. American Association of Neurological Surgeons 66th Annual Meeting, Philadelphia, Pennsylvania, April 1998.

129. Maroon, J.C.: Microsurgical and Percutaenous Approaches to Lumbar Discs. XIX Course of Continued Education in Neurosurgery, Sao Paulo, Brazil, April, 1998.
130. Maroon, J.C.: Management of Head and Neck Injuries in Athletics. XIX Course of Continued Education in Neurosurgery, Sao Paulo, Brazil, April, 1998.
131. Maroon, J.C.: Management of Spheno-Orbital Meningiomas. XIX Course of Continued Education in Neurosurgery, Sao Paulo, Brazil, April, 1998.
132. Maroon, J.C.: The Management of Cerebral Concussion in Athletes, 51st Annual Meeting of the Neurosurgical Society of America, Quebec City, Quebec, Canada, May, 1998.
133. Maroon, J.C.: Concussions and Other Head Injuries. National Basketball Trainer[s Association Continuing Medical Education, Chicago, Illinois, June, 1998.
134. Maroon, J.C.: Neuropsychological Testing of Professional Athletes. National Basketball Trainer's Association Continuing Medical Education, Chicago, Illinois, June, 1998.
135. Maroon, J.C.: Minimally Invasive Surgery for Lumbar Disc Disease. International Winter Congress on Minimally Invasive Techniques for Neurosurgery and Otolaryngology, Aspen, Colorado, March 24, 1999.
136. Maroon, J.C.: Healing and Spirituality: Patients I Have Met. Live Well with Cancer Programs at the Cancer Caring Center, Pittsburgh, PA, April 7, 1999.
137. Maroon, J.C.: Cerebral Concussion Management and Return to Play Decisions. American Association of Neurological Surgeons 67th Annual Meeting, New Orleans, LA, April 26, 1999.
138. Maroon, J.C.: Cerebral Concussion on Athletes: Evaluation and Neuropsychological Testing. American Association of Neurological Surgeons 67th Annual Meeting, New Orleans, LA, April 27, 1999.
139. Maroon, J.C.: Head and Neck: The NFL C-Spine. Sports Medicine 1999: An NFL Perspective, Bal Harbour, FL, May 7-9, 1999.
140. Maroon, J.C.: the Diagnosis and Treatment of Head Injuries in Athletes. Congerss of Neurological Surgeons Annual Meeting, Boston, MA, October, 1999.

141. Maroon, J.C.: Management of the Injured Athlete. ImPACT--A New Neuropsychological Tool for Evaluating Concussion in Athletes. American Association of Neurological Surgeons 68th Annual Meeting, San Francisco, CA, April 8-13, 2000.
142. Maroon, J.C.: Minimally Invasive Surgery of the Spine. American Association of Neurological Surgeons 68th Annual Meeting, San Francisco, CA, April 8-13, 2000.
143. Maroon, J.C.: Faith and Healing. Calvary Baptist Church, Follansbee, WV, April 30, 2000.
144. Maroon, J.C.: Faith and Healing. Cancer Caring Center, Pittsburgh, PA, May 17, 2000.
145. Maroon, J.C.: Diagnosis and Treatment of Athletic Concussions: A New Approach. Samuel Francis School Law Symposium, Sports Law Update 2000, University of Pittsburgh Law School, Pittsburgh, PA June 13, 2000.
146. Maroon, J.C.: Current Concepts in Minimally Invasive Discectomy: Percutaneous, Endoscopic, Laser and Microsurgical. First Interdisciplinary World Congress of Spinal Surgery. Berlin, German, August 2 –September 1, 2000.
147. Maroon, J.C.: Cerebral Concussion in Athletes: Neuropsychological Evaluation and Testing. Congress of Neurological Surgeons Annual Meeting, San Antonio, TX, September, 2000.
148. Maroon, J.C.: Balance and a Surgical Career—an Oxymoron or Possibility. Clinical Congress of the American College of Surgeons, Chicago, IL, October 26, 2000.
149. Maroon, J.C.: Recent Advances in Brain Tumor Treatment. Ohio Cancer Research Annual Meeting, St. Clairsville, OH, March 30, 2001.
150. Maroon, J.C.: Overview of Minimally Invasive Techniques of Lumbar Discectomy: APLD, Chymopapain, Laser Discectomy, Microdiscectomy. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April 21-26, 2001.
151. Maroon, J.C.: Sports Related Concussion: Evaluation and Neuropsychological Testing. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April 21-26, 2001.
152. Field, M.; Abla, A.A.; Maroon, J.C.; Burke, J.P.; Bost, J.; Abla, A.; Abla, Ad.: Posterior Occipitocervical Fusion in Adults. A long-term follow-up Study. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April, 21-26, 2001.

153. Burke, J.P.; Abla, A.A.; Maroon, J.C.; Field, M.; Bost, J.; Abla, A.; Abla, Ad: Outcome Comparison of Synthes Cervical Spine Locking Plate systems. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April 21-26, 2001.
154. Burke, J.P.; Abla, A.A.; Maroon, J.C.; Field, M.; Bost, J.; Abla, A.; Abla, Ad.: Long Term Outcome of Lumbar Pedicle Screws. American Association of Neurological Surgeons Annual Meeting, Toronto, Canada, April 21-26, 2001.
155. Maroon, J.D.: The Management of Cervical Spine Injuries in the NFL. American Orthopedic Society of Sports Medicine, Phoenix, AZ, May 11-13, 2001.
156. Maroon, J.C.: ImPACT—Immediate Post Concussion Athletic Cognitive Testing. Neurosurgical Society of America Annual Meeting, Amelia Island, FL, June 8-10, 2001.
157. Maroon, J.C.: Basic Concepts, Definitions and guidelines: From the Laboratory to the Playing Field. New Developments in Sports Related Concussion Symposium, Pittsburgh, PA, July 27-29, 2001.
158. Maroon, J.C.: Neurosurgical Management of Athletic Injuries. Congress of Neurological Surgeons, J.C.: Guidelines for Athletes with Concussion: What is the Evidence? Congress of Neurological Surgeons 51st Annual Meeting, San Diego, CA, September 29-October 4, 2001.
159. Maroon, J.C.; Gardner, P.; Levy, E.; Bejjani, G.K.: Golf Induced Stroke from Vertebral Artery Dissection. Poster Session, Congress of Neurological Surgeons 51st Annual Meeting, San Diego, CA, September 29-October 4, 2001.
160. Greenspan, J.; Sybert, G.; Maroon, J.C., et al.: Retrospective Safety Evaluation of ADCON®-L for Inhibition of Postoperative Peridural Fibrosis Following Spinal Root Decompression. Poster Session, Congress of Neurological Surgeons 51st Annual Meeting, San Diego, CA, September 29-October 4, 2001.
161. Maroon, J.C.; Sybert, G.; Bartie, G.; Moldawaer, T.; et al. Retrospective safety evaluation of ADCON-L® for inhibition of postoperative peridural fibrosis following spinal root decompression. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6-11, 2002.
162. Burke, J.; Abla, A.A.; Maroon, J.C., Bost, J.; et al: Salvage pedicle screws for post laminectomy spondylolisthesis and failed spinal fusion. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6-11, 2002.

163. Burke, J.; Abl, A.A.; Maroon, J.C.; Bost, J.; et al: Advances in postoperative management of lumbosacral pedicle screw fusion patients. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6- 11, 2002.
164. Burke, J; Abl, A.A., Maroon, J.C.; Relic, R.; et al: Long segment plating of the anterior cervical spine: radiographic and clinical outcome. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6 – 11, 2002.
165. Bejjani, G.K.; and Maroon, J.C.: Treatment of failed adult chiari malformation—decompression with CSF drainage. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6-11, 2002.
166. Maroon, J.C.: New and evolving technologies for minimally invasive surgery fo the lumbar disc. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6-11, 2002.
167. Maroon, J.C.: Challenges in identifying and treating sports injuries. The role of neuropsychological testing in athletes. American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 6-11, 2002.
168. Maroon, J.C.: Evaluation and managemernt of head injuries in athletes. Neurosurgical Society of America, Kiawah Island, SC, April 21-24, 2002.
169. Maroon, J.C.: Management of the concussed professional athlete. New Developments in Sports-Related Concussion. Pittsburgh, PA, July 19-21, 2002.
170. Bejjani, G.K.; Maroon, J.S.; Bost, J; Eddy, K.; Heise, T.: Evaluation of a new dural substitute for adult arnold chiari malformation reconstruction. Congress of Neurological Surgeons Annual Meeting, Philadelphia, PA, September 21-26, 2002.
171. El-Kadi, M.; Maroon, J.C.; Abl, A.A.; Bost, J.W.; Marcello, L.; Relic, R.; Painter, D.; Gojkovich, C.: Prospective evaluation of VG2™ interbody fusion for patients with discogenic back pain. Congress of Neurological Surgeons Annual Meeting, Philadelphia, PA, September 21-26, 2002.
172. El-Kadi, M.; Maroon, J.C.; Abl, A.A.; Bost, J.W.; Marcello, L.; Relic, R.; Painter, D.; Gojkovich, C.: Revisiting fixed-angle screw rigid anterior cervical plate system. Congress of Neurological Surgeons Annual Meeting, Philadelphia, PA, September 21-26, 2002.
173. Maroon, J.C.: New Developments in concussion management: the Pittsburgh Steelers protocol. Congress of Neurological Surgeons Annual Meeting, Philadelphia, PA,

September 21-26, 2002.

174. Maroon, J.C.: Minimally invasive surgery of the spine. AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves, Tampa, FL, March 5-8, 2003.
175. Maroon, J.C.: Advances in minimally invasive techniques in lumbar spine surgery. Pennsylvania Neurosurgical Society, Mid-Atlantic Neurosurgical Society Annual Spring Meeting, Pittsburgh, PA, March 27-28, 2003.
176. Maroon, J.C.: Challenges in identifying and treating sports injuries. American Association of Neurological Surgeons Annual Meeting, San Diego, CA, April 26-May 1, 2003.
177. Maroon, J.C.: The Fires Within – The Role of Inflammation in Heart, Joint, and Brain Diseases. Wheeling Hospital, Wheeling, WV, April 28, 2004.
178. Maroon, J.C.; Bost, J.: The Role of Essential Fatty Acids in Modification of Eicosanoids in Discogenic Disease. American College of Nutrition, September 30-October 3, 2004, Long Beach, CA.
179. Maroon, J.C.: Sports Medicine in Neurosurgery. Congress of Neurological Surgeons Annual Meeting, October 16-21, 2004, San Francisco, CA.
180. Maroon, J.C.: Concussion. Senior Resident Course on Neurotrauma and Critical Care. February 26-27, 2005. University of Pittsburgh School of Medicine, Pittsburgh, PA.
181. Maroon, J.C.: Omega-3 JEFA, We Now Have the Facts. Nutrition and Health Meeting, Tucson, AZ, March 2005.
182. Maroon, J.C.: Neuropraxia—Spinal Stenosis—and Herniated Cervical Discs. Treatment Options and Return to Play Decision Making. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, Arizona, March 9 – 12, 2005.
183. Abla, A.A., El-Kadi, H.; Maroon, J.C., Bost, J., Marcello, L., Wert, M., Montgomery, A., Baughman, J., Strelec, L.: Prospective Evaluation of Composite Cortical and Cancellous Bone Graft for Anterior Cervical Fusion. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
184. Abla, A.A., El-Kadi, H.; Maroon, J.C., Bost, J., Marcello, L., Wert, M., Montgomery, A., Baughman, J., Strelec, L.: Evaluation of ENT-Assisted Anterior Cervical Approach for Spinal Fusion. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.

185. Ablu, A.A., El-Kadi, H.; Maroon, J.C., Bost, J., Marcello, L., Wert, M., Montgomery, A., Baughman, J., Strelec, L.: Surgical Techniques Minimizing Blood Loss in Posterior Pedicle Screw Lumbar Spine Fixation. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
186. Ablu, A.A., El-Kadi, H.; Maroon, J.C., Bost, J., Marcello, L., Wert, M., Montgomery, A., Baughman, J., Strelec, L.: Operative Techniques to Reduce Instrumentation failure with Pedicle Screw Fusion. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
187. Maroon, J.C., Bost, J., Baughman, J., Wert, M.: Results of Omega-3 EFA for Spine Pain. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005. Received First Place Award for Poster Presentation.
188. El-Kadi, H., Ablu, A.A., Maroon, J.C., Bost, J., Marcello, L., Kosovec, M., Mullen, B.: Complications in Long Segment Anterior Cervical Fusion, Experience in 100 Patients, Prognostic Factors in Elderly Patients with Long Segment Anterior Cervical Fusion. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
189. El-Kadi, H., Ablu, A.A., Maroon, J.C., Bost, J., Marcello, L., Kosovec, M., Mullen, B.: Evaluation of Pedicle Screw Fixation for Mechanical Post-Laminectomy Pain Syndrome. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
190. Maroon, J.C.: Complex Cranio Orbital Tumors Lesions. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 16-21, 2005.
191. Maroon, J.C.: Modulation of Inflammation and Immune Responses by Prostaglandins and Thromboxanes. The Institute for Functional Medicine 12th International Symposium, Palm Springs, CA, May 2005.
192. Maroon, J.C.: Omega-3 EFA for Spine Pain. ACAM Fall 2005 Conference, Anaheim, CA, November 9-13, 2005.
193. Maroon, J.C.: Cognitive Function in Physical Fitness—A Critical Interaction. Milken Institute Global Conference of Healthy Aging/Faster Cures. Santa Monica, CA, April 23, 2005.
194. Maroon, J.C.: The use of ImPACT-Sr. Milken Institute Global Conference of Healthy Aging/Faster Cures. Santa Monica, CA, April 23, 2005.

195. Maroon, J.C.: The History of Spine Surgery. American Association of Neurological Surgeons Annual Meeting, San Francisco, CA, April 26, 2006.
196. Maroon, J.C.: Complex Crani-Orbital Tumors and Lesions. American Association of Neurological Surgeons Annual Meeting, San Francisco, CA, April 26, 2006.
197. Maroon JC: The New Genetic Science of Aging: Increasing the Quality and Length of Life, A4M Meeting, Chicago, IL, July 14-16, 2006.
198. Maroon JC: Omega-3 EFA's: Now we have the facts. Webinar, September 13, 2006.
199. Maroon JC: A Surgeon's Story--Successes, Failures and an Rx for a balanced life. American College of Surgeons Clinical Congress, Chicago, IL, October 9, 2006.
200. Maroon JC: Neurocognitive Testing in Athletic Cerebral Concussion. Congress of Neurological Surgeons Annual Meeting, Chicago, IL, October 9, 2006.
201. Maroon JC: Neurological injury and sports. Neurosurgery Grand Rounds, The Cleveland Clinic, Cleveland, OH, November 3, 2006.
202. Maroon JC: Sports medicine and neurosurgery: Recent advances in neurapraxia and cerebral concussion injuries. 9th Annual Innovations in Neuroscience Nursing, Cleveland, OH, November 3, 2006.
203. Maroon JC: Extending Life: The New Science of Aging – How to Activate Longevity Genes and Increase Quality and Length of Life, 14 International Congress on Anti-Aging Medicine, Las Vegas, NV, December 7-10, 2006.
204. Maroon JC: A Surgeon's Story—Successes, Failures and a Rx for a Balanced Life. 2007 Congress of Neurological Surgeons Annual Meeting, San Diego, CA, September 18, 2007.
205. Maroon JC: Anterior vs. Posterior Approaches for Cervical Radiculopathy. 2007 Congress of Neurological Surgeons Annual Meeting, San Diego, CA, September 18, 2007.
206. Maroon JC: Cerebral Concussion and Neurapraxia in Sports—Current Management Perspectives. 2nd Annual Neurotrauma Symposium, Barrows Neurological Institute, Phoenix, AZ, January 16-18, 2008.
207. Bost J, Maroon JC: The Wild West of Resveratrol and other Polyphenol Supplements:

- What to Recommend? A4M Meeting, Orlando, April 2008.
208. Maroon JC, Bost J: Extending Life: The New Science of Aging. How to Activate Longevity Genes and Increase Quality and Length of Life. A4M Meeting, Orlando, April 2008.
 209. Bost J, Maroon JC, The Wild West of Resveratrol and other Polyphenol Supplements: What to Recommend? A4M Meeting, Orlando, April 2008
 210. Maroon JC, El Kadi M, Bost J: CervicCore® Disc Replacement vs. Fusion for Cervical Nerve Root Compression: One-Year Outcomes from Four Study Sites in a Prospective Randomized Controlled Trial, American Association of Neurological Surgeons Annual Meeting, Chicago, IL, April 26-May 1, 2008.
 211. Maroon JC, Bost J: Cervicore ® Disc Replacement vs. Fusion for Cervical Nerve Root Compression: One-Year Outcomes form Four Study Sites in a Prospective Randomized Control Trial. Poster Presentation. Section on Disorders of the Spine and Peripheral Nerves. Congress of Neurological Surgeons Annual Meeting, Orlando, FL, Sept. 20-25, 2008.
 212. Maroon JC: Making Sports Safer. Section on Neurotrauma and Critical Care Seminar- Injury Prevention: Neurosurgery and Public Health. Orlando, FL, September 23, 2008.
 213. Maroon JC: Anterior vs. Posterior for Cervical Radiculopathy. Congress of Neurological Surgeons Annual Meeting, Orlando, FL, Sept. 20-25, 2008.
 214. Bost J, Maroon JC: Omega-3 and Neurological Diseases, Conference on Anti-Inflammatory Medicine. Cancun, Mexico, November 15, 2008.
 215. Maroon JC, Bost J: The Longevity Factor. A4M Meeting, Orlando, December 13, 2008.
 216. Maroon JC: The Longevity Factor: How Resveratrol and Red Wine Activate Genes for a Longer and Healthier Life. Academy of Trial Lawyers of Allegheny County, Omni William Penn Hotel, April 22, 2009.
 217. Maroon JC, Bost J: Human Longevity: A New Paradigm. A4M Meeting, Orlando, April 24, 2009.
 218. Maroon JC, Collins M: Management of the Concussion Patient: Subacute Management. Sixth Annual Sports-Related Conference on Concussion and Spine Injury. Boston, MA, May 1, 2009

219. Maroon, JC, Abula AA: Occupational Hazards: Dodging Bullets, Radiation and Disease. 77th Annual Meeting of the American Association of Neurological Surgeons, San Francisco, CA, May 2-6, 2009.
220. Maroon, JC: Living Longer and Healthier. UPMC Office of Graduate Medical Education, University Club, December 3, 2009.
221. Maroon JC: Cancer Prevention with Phytonutrients—Reviewing the Latest Research on Resveratrol, Omega-3, Green Tea, Curcumin, Genistein and Lycopene. A4M, Las Vegas, Nevada, December 11, 2009.
222. Maroon JC: Living Longer and Healthier. Grand Rounds, UPMC-St. Margaret's Hospital, December 17, 2009.
223. Bleicher AG, Pathak SK, Schneider WW, Lovell MR, Norwig J, Maroon JC: Documenting White Matter Damage in Sports Related Mild Traumatic Brain Injury with Diffusion and High Definition Fiber Tracking. American Society of Functional Neuroradiology Meeting, Las Vegas, NV, February 22, 2010.
224. Maroon JC: Advances in Concussion Management—From the NFL to Youth Sports. Department of Neurosurgery-UPMC Conference, March 17, 2010
225. Maroon JC: The Pathogenesis of CTE, NFL Guidelines for Preventing Concussions and Possible Therapeutic Interventions. Is Football Bad for the Brain? Forensic scientific, medical legal and societal aspects of the concussion debate. Institute of Forensic Science and Law, Duquesne University, March 12, 2010.
226. Maroon JC: How to Live Longer and Healthier Through Chemistry. Society of Analytical Chemists of Pittsburgh and Spectroscopy Society of Pittsburgh, Studies of Alzheimer's Dementia and Sports Related Effects of Concussions. Sewickley Academy, March 27, 2010.
227. Maroon JC, Bost J: Cancer Prevention with Phytonutrients: Reviewing the Latest Research on Resveratrol, Omega-3, Green Tea, Curcumin, Genistein and Lycopene. 18th Annual World Congress on Anti-Aging Medicine and Regenerative Biomedical Technologies, Marriott World Center, Orlando, FL, April 14-17, 2010.
228. Maroon JC: Orbital Tumors An Update. 4th World Congress of Endoscopic Surgery of the Brain, Skull Base and Spine. David L. Lawrence Convention Center, Pittsburgh, PA, April 28-30, 2010.
229. Maroon JC: The Longevity Factor. IFM 17th International Symposium on Confronting

- Cancer as a Chronic Disease. The LaCosta Resort and Spa, Carlsbad, CA, May 20-23, 2010
230. Maroon JC: New Developments in Sports Related Concussion. Latrobe Academy of Medicine, Colonial Inn, Ligonier, PA, May 26, 2010.
 231. Maroon JC: How to Live Longer and Healthier, 37th Refresher Course in Family Medicine, Marriott Pittsburgh City Center, June 11, 2010.
 232. Maroon JC: Evaluation and Treatment for mTBI—The NFL Model. Advanced Technology Applications for Combat Casualty Care 2010 (ATACCC 2010) Conference, TradeWinds Island Grand Resort, St. Petersburg, FL, August 16-19, 2010.
 233. Maroon, JC: Evolution of Concussion Management at the NFL, College, High School and Youth Sports Levels: Overcoming Obstacles. Congress of Neurological Surgeons 2010 Annual Meeting, San Francisco, CA, October 16-21, 2010.
 234. Maroon JC: Sports-Related Spinal and Peripheral Nerve Injuries, Luncheon Seminar Moderator, Congress of Neurological Surgeons 2010 Annual Meeting, San Francisco, CA, October 16-21, 2010.
 235. Maroon JC: Development and Implementation of Neurocognitive Tests in TBI: High School to NFL. Congress of Neurological Surgeons 2010 Annual Meeting, San Francisco, CA, October 16-21, 2010.
 236. Maroon JC: Introduction of Michael Collins, Ph.D., Integra Foundation Lecture. Congress of Neurological Surgeons 2010 Annual Meeting, San Francisco, CA, October 16-21, 2010.
 237. Maroon JC: Sports and Brain Injury: Controversies and Recommendations. Brain and Spine Symposium, Hallandale Beach, FL, November 5-6, 2010.
 238. Maroon JC: The New Science of Epigenetics: How to Live Healthier and Longer. Brain and Spine Symposium, Hallandale Beach, FL, November 5-6, 2010.
 239. Maroon JC: Epigenetics and the Effect of Resveratrol on the Aging Brain. American Museum of Natural History, New York, NY, February 16, 2011.
 240. Maroon JC: Cancer Prevention and Phytonutrients. Integrative Health Symposium, New York Hilton, New York. March 5-6, 2011.
 241. Maroon JC: Epigenetics and Longevity—How to live a long, healthy and balanced life.

- American Association of Neurological Surgeons Annual Meeting, Denver, CO. April 9 – 13, 2011.
242. Maroon JC: Advances in Concussion Management in Athletics. CECANOT, Santo Domingo, Dominican Republic, April 14 – 16, 2011.
243. Maroon JC: How to Live Longer and Healthier Through Gene Activation—The New Science of Epigenetics. CECANOT, Santo Domingo, Dominican Republic, April 14 – 16, 2011.
244. Maroon JC: Concussion Management: Current Advances in the NFL and WWE. American Osteopathic Academy of Sports Medicine (AOASM), Providence, RI. April 27-29, 2011.
245. Maroon, JC: TBI and Neuroinflammation: A Rationale for Treatment. 2nd Annual Navy Medicine Research Conference Connecting wounded Warriors to Advanced Diagnostic and Therapeutic Options. Uniformed Services University of the Health Sciences, Bethesda, MD. June 4-7, 2011.
246. Maroon JC: Head injuries: NFL concussions and beyond. Jacob Schwinn Study Club, Stratford Spring, WV, October 25, 2011.
247. Maroon JC, Bost J: The Metabolic Treatment of Cancer. 19th Annual World Congress on Anti-Aging Medicine and Biomedical Technologies. Las Vegas, NV, December 9, 2011.
248. Maroon JC: The Restricted Ketogenic Diet—A New Treatment Option for Malignant Gliomas?” Neuroscience Conference, University of Pittsburgh Medical Center, Pittsburgh, PA, February 2, 2012.
249. Koutourousiou M, Stefko ST, Paluzzi A, Tormenti MJ, Fernandez-Miranda JC, Snyderman CH, Maroon JC, Gardner PA: Combined endoscopic endonasal transorbital approach with transconjunctival-medial orbitotomy for excisional biopsy of the optic nerve—a technical note. North American Skull Base Society 22nd Annual Meeting, Las Vegas, NV, February 17-19, 2012.
250. Maroon JC: The Restricted Ketogenic Diet—A New Treatment Option for Malignant Gliomas?” UPMC Presbyterian Shadyside Tumor Conference, University of Pittsburgh Medical Center, Shadyside Hospital, Pittsburgh, PA, February 29, 2012.
251. Maroon JC: Immunoexcitotoxicity in Post Concussion Syndrome, PTSD, Chronic Traumatic Encephalopathy: A Unifying Hypothesis and a Rationale for Treatment.

- Posttraumatic Stress Disorder and Traumatic Brain Injury Clinical Consortium, Hyatt Dulles, Herndon, VA, May 24, 2012.
252. Maroon JC: Concussion Awareness at the Professional Athlete Level. Advances in the Prevention and Management of Sports-Related Concussion. First Annual Conference Brain Health Education and Research Institute, Bethesda, MD, June 8-9, 2012.
 253. Maroon JC: The Longevity Factor Pre-Conference Workshop. The 6th Annual Anti-Ageing and Aesthetic Medicine Conference, Melbourne, Australia, August 17-19, 2012.
 254. Maroon JC: Concussion Management: Alternative Approach to Brain Recovery and Treatment. The 6th Annual Anti-Ageing and Aesthetic Medicine Conference, Melbourne, Australia, August 17-19, 2012.
 255. Maroon JC: Cancer Prevention with Phytonutrients: Reviewing the Latest Research on Resveratrol, Omega 3, Green Tea, Curcumin and Lycopene. The 6th Annual Anti-Ageing and Aesthetic Medicine Conference, Melbourne, Australia, August 17-19, 2012.
 256. Maroon JC: Life, Longevity and The New Science of Genetic Activation. The Washington Hospital Women's Day, Southpointe Golf Club, Canonsburg, PA, August 27, 2012.
 257. Maroon, JC: The Secrets of Longevity. Comprehensive Medical Update, Cambria-Somerset Council for Education of Health Professionals, Inc., Seven Springs Mountain Resort, Champion, PA, September 14, 2012.
 258. Maroon JC: Secrets of Longevity. RN Lecture Series, UPMC Passavant, Pittsburgh, PA, September 15, 2012.
 259. Maroon JC: The Restricted Ketogenic Diet for the Treatment of Malignant Gliomas. Third International Symposium: Dietary Therapies for Epilepsy and other Neurologic Disorders, Hilton Chicago Indiana Lakes Resort, September 19-22, 2012.
 260. Maroon JC, El-Kadi H, Bost JW, et al: Clinical evaluation of TruFUSE® lumbar facet fusion system. Congress of Neurological Surgeons Annual Meeting Poster Session, Chicago, IL, October, 2012.
 261. Maroon JC, El-Kadi H, Bost JW, et al: Lumbar fusion with allograft clinical outcome in different age groups. Congress of Neurological Surgeons Annual Meeting Poster Session, Chicago, IL, October, 2012.
 262. Maroon JC, Bost JW, et al: Outcomes following ACDF in professional athletes.

- Congress of Neurological Surgeons Annual Meeting Poster Session, Chicago, IL, October, 2012.
260. Maroon JC: Immunoexcitotoxicity and chronic traumatic encephalopathy. Outside Counsel Conference. Herberman Conference Center, Pittsburgh, PA, November 14, 2012.
261. Maroon JC: Head injury, rehabilitation program (NFL). The Dan Marisi Memorial Lecture, International Council of Motor Sport Sciences Annual Congress, Orlando Convention Center, Orlando, FL, November 28, 2012.
262. Maroon JC: Evolution of spinal minimally invasive surgery. 6th Minimally Invasive Spinal Surgery and Navigation: Hands-on Symposium, Weill Cornell Medical College, New York, NY, November 29, 2012.
263. Maroon JC: Concussion Update—Lessons from the NFL: Present and Future Developments. Symposium on Mild Head Injury, Concussion and Return to Activities: update 2013, The University of Chicago Medicine and Biological Sciences, Chicago, IL, January 25, 2013.
264. Maroon JC: Concussions and Sports—Diagnosis, Testing and Post-Concussion Assessment. ProAssurance Defense Counsel Meeting, Miami, FL, March 20, 2013.
265. Maroon JC: Concussion Update – Immunoexcitotoxicity the Common Etiology of PCS, CTE and PTSD. Symposium 2013 – The Cranio-Cervical Syndrome. The Millennium Broadway Hotel, New York, NY, April 6, 2013.
266. Maroon JC: Neurological Issues in Retired NFL Players. The Health, Body and Mind Screening Event, The Pittsburgh Steelers and The NFL Player Care Foundation, UPMC Southside Training Complex, Pittsburgh, Pennsylvania, June 1, 2013.
267. Maroon JC: Chronic Traumatic Encephalopathy (CTE): What Do We Know and What Are We Learning? Emerging Frontiers in Concussion. UPMC Center for Sports Medicine, Pittsburgh, Pennsylvania, June 7-9, 2013.
268. Maroon JC, Bost JW, Winkelman R, Amos A, Mathyssek C: Chronic Traumatic Encephalopathy (CTE): What Do We Know and What Are We Learning? (Poster Session). Emerging Frontiers in Concussion. UPMC Center for Sports Medicine, Pittsburgh, Pennsylvania, June 7-9, 2013.
269. Maroon JC: How to Activate Your Genes to Live Longer and Healthier. Women's Health Conversations. Consol Energy Center, Pittsburgh, PA. September 12, 2013.

VISITING PROFESSOR

1. University of Cincinnati, March 27-18, 1984, Diagnosis and Treatment of Pituitary Tumors.
2. Indiana University and Indiana State Medical Association, October 19-24, 1984, Surgical Approaches to the Orbit.
3. Harvard University, November 5-9, 1984, Optic Nerve and Sports Medicine.
4. Northwestern University April 4-5, 1985, Treatment of Orbital and Parasellar Tumors.
5. Cleveland Clinic, November 14-15, 1985, Surgical Approaches to the Orbit.
6. University of Cincinnati, January 8-10, 1986, Percutaneous Lumbar Discectomy.
7. Dartmouth University, December 12, 1986, Percutaneous Discectomy.
8. West Virginia University, December 11, 1987, Treatment of Cervical and Lumbar Spine Disorders.
9. Medical College of Pennsylvania, December 15, 1987, Microsurgical and Percutaneous Approaches to Herniated Lumbar Discs.
10. Wayne State University, May 1990, Treatment of Cervical and Lumbar Spine Disorders.
11. University of Pittsburgh Medical Center, December 1995.
12. Stanford University Medical Center, January 15, 1998, Surgical Approaches to Orbital Tumors.
13. University of Miami Medical Center, January 14-15, 1999, Minimally Invasive Surgery of the Spine, Orbital Surgery by the Neurosurgeon, Balance and the Neurosurgeon: Attainable or an Oxymoron?
14. University of Indiana, March 13-14, 1999, Head Injuries in Athletes - Evaluation and Neuropsychological Testing.
15. Hebrew University Medical School, Jerusalem, March 12-17, 2000, Minimally Invasive Surgery of the Spine.
16. Celebration Hospital, Celebration, FL., September 27, 2002: "Balance in a Physician's

Life.”

17. University at Buffalo Neurosurgery, Buffalo, NY, November 19, 2004: “The Role of Neurocognitive Testing in Athletic Cerebral Concussion.”
18. Stanford University Medical Center, Palo Alto, CA, February 4, 2005: “Neurocognitive Testing in Athletes with Concussion (MTBI). A New Standard of Care.
19. Stanford University Medical Center, Palo Alto, CA, February 4, 2005. “The Role of Inflammation in Intervertebral Disc Disease.”
20. Fifth Annual G. Robert Nugent Lectureship, West Virginia University School of Medicine, May 7, 2005. “A Neurosurgeon’s Journal: Successes, Failures and Lessons (Hopefully) Learned.
21. Weill-Cornell Medical Center, New York, NY, November 26, 2007. “A Neurosurgeon's Life: Success, Failure and a Prescription for a Balanced Life”.
22. University of Illinois, Chicago, IL, January 12, 2008. “A Surgeon's Story: Successes, Failures and a Prescription for a Balanced Life.
23. Barrows Neurological Institute, Phoenix, AZ, January 18, 2008. “A Neurosurgeons Diary--Successes, Failures and a Rx for a Balanced Life.”
24. Cleveland Clinic Neurologic Institute and Department of Neurosurgery, April 14, 2010. “New Developments in the Management of Sports Related Concussions.
25. Walter Reed Army Medical Center, April 23, 2010. “New Developments in the Management of Sports Related Concussion” and “Balancing Your Diet and Your Life-The Science of Epigenetic and Nutragenomics”.
26. Rush University Medical Center, September 29, 2011. “Is Balance in Neurosurgery an Oxymoron?” and “Recent Advances in Concussion Management in the NFL”.
27. Northshore University Health System, Department of Neurosurgery Academic Day, April 20, 2012. “Neuro Inflammation in Post-Concussion Syndrome, PTSD and Chronic Traumatic Encephalopathy: A Rationale for Treatment”.

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kph