CURRICULUM VITAE

Name: Michael Bruce Horowitz, M.D.

Birth Date: 08/08/1962

Birthplace: New York, NY

Citizenship: USA

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Licenses: Florida ME140930

Texas J7520

Georgia 87059 Expires 8/31/2022

NPI: 1881662716

CAQH: 12232608

EDUCATION AND TRAINING

Undergraduate:

1980-1984 Williams College B.A. Biology

Williamstown, MA

Cum Laude with Highest Honors

Honors Thesis: The Regeneration of Mauthner Axons in Goldfish

Graduate:

1984-1988 University of Rochester School of Medicine MD

Rochester, N.Y.

Post Graduate Surgical Training:

7/88-6/89 University of Pittsburgh Medical Center

General Surgery Internship

Pittsburgh, PA

7/89-6/94 University of Pittsburgh Medical Center

Neurological Surgery, Residency

Lunsford, MD

Pittsburgh, PA

Program Directors: L.

Peter Janetta, MD

Program Director:

Richard Simmons, MD

Dade

Post Residency Surgical Fellowship Training:

\7/94-6/95 Neuroendovascular Surgery/Interventional

Exovascular Neurosurgery (COMBINED FELLOWSHIP) UT Southwestern Medical Center

Dallas, TX

Program Directors: Phillip Purdy, MD Duke Samson, MD

RECOGNITION AWARDS:

Top Doctors Pittsburgh: Pittsburgh Magazine. Pittsburgh, Pennsylvania 2005-2016

Top Doctors Jacksonville: Jacksonville Magazine, Jacksonville, Florida 2022, 2023

Top Doctor's USA: Castle Connelly 2005-2022

EMPLOYMENT HISTORY

HCA Florida Neurosurgery 6/22/2020 - Present

Jacksonville Multispecialty Services, LLC

Jacksonville, Florida

HCA Florida Southeast Division 10/1/2022- Present

Medical Director Neurosciences

Neurological Surgeon and Clinical Director of Stroke 9/1/2019 - 5/22/2020

Lee Health System Fort Myers, Florida

Pennsylvania Brain and Spine Institute 4/1/2012 - 8/31/2019

Butler Health System Butler, Pennsylvania

University of Pittsburgh Department of Neurological Surgery University of Pittsburgh Medical Center Pittsburgh, Pennsylvania 8/1/1999 - 11/30/2011

University of Texas Southwestern Department of Neurological Surgery UT Southwestern Medical Center of Dallas Dallas, Texas 7/1/1995 - 7/1/1999

CURRENT EMPLOYED NON-MEDICAL POSITION

Chief Science Officer (CSO)
Cerenetex, Inc.
455 Old Newport Blvd, Suite 101
Newport Beach, CA
92663

US AND OVERSEAS PATENTS

GRANTED

Coated vaso-occlusive device for treatment of aneurysms
 Inventors- Michael Horowitz, M.D. and Christopher Bettinger, PhD Patent number 9,655,999 granted May 2017
 (ANCURE, LLC)

Coated vaso-occlusive device for treatment of aneurysms
 Inventors-Michael Horowitz, M.D. and Christopher Bettinger, PhD Patent number 10,034,966 granted July 31, 2018
 (ANCURE, LLC)

Coated Vaso-Occlusive Device and Methods for Treatment of Aneurysms
 Inventors-Michael Horowitz, M.D. and Christopher Bettinger, PhD
 Patent number EP14779096A
 (ANCURE, LLC)

4. Catheter Based Retrieval Device with Proximal Body Having Axial Freedom of Movement Inventor-Michael Bruce Horowitz, MD Patent number US 10,172,634 granted January 8, 2019 (RETRIEVER MEDICAL, LLC)

 Catheter Based Retrieval Device with Proximal Body Having Axial Freedom of Movement Inventor-Michael Bruce Horowitz, MD
 Patent number US 10,258,357 B1 granted April 16, 2019 (RETRIEVER MEDICAL, LLC)

6. <u>Non-Invasive Systems and Methods for Improved Evaluation of patients Suffering From Undiagnosed Headaches.</u>

Inventors: Bobo, Shah, Chen, **Horowitz**, Hays **Patent number US 20/032218801 A1 granted April 9,2021**(CERENETEX, INC)

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Michael B. Horowitz, MD Page 3

7. <u>Clot Removal Methods and Devices with Multiple Independently Controllable Elements</u>

Inventor: Michael Horowitz, MD, Benjamin Bobo, Brandon Repko, MD

Patent number US 11,382,643 granted July 12, 2022

(RETRIEVER MEDICAL, LLC)

8. Method to Remove a Thrombus

Inventor: Michael Bruce Horowitz, MD

Patent number: US 10,898,215 granted January 26, 2021

(RETRIEVER MEDICAL, LLC)

9. Clot Removal Methods and Devices with Multiple Independently Controllable Elements

Inventor: Michael Bruce Horowitz, MD, Benjamin Bobo, Brandon Repko, MD

Patent number: US 11,583,301 granted February 21, 2023.

(RETRIEVER MEDICAL, LLC)

10. Catheter Based Retrieval Device with Proximal Body Having Axial Freedom of Movement

Inventor: Michael Bruce Horowitz, MD, Benjamin Bobo, Brandon Repko, MD

Patent Number: US 11,589,881 (RETRIEVER MEDICAL, LLC)

11. Catheter Based Retrieval Device with Proximal Body Having Axial Freedom of Movement

Inventor: Michael Bruce Horowitz, MD

Patent number: US 11,633,202 granted April 25, 2023

(RETRIEVER MEDICAL, LLC)

PENDING PATENTS AND PCT/INTERNATIONAL PATENT APPLICATIONS

US 17/981,717

US 17/809,536

PCT/US21/71888

US 17/694,036

US 17/809,528

PCT/US22/73238

US 17/450,977

US 809,517

PCT/US22/73234

US 17/450.978

US 17/809,531

PCT/US22/73236

US 17/659,375

PCT/US22/71735

PENDING PATENT APPLICATIONS IN THE EC, AUSTRALIA (AU) AND HONG KONG (HK)

EC 18867404.8 AU 2018352118 HK 62021026352

ACADEMIC APPOINTMENTS

06/07-08/09	Chief of Neurosurgery University of Pittsburgh Medical Center Pittsburgh, PA
2/07-11/12	Tenured Professor of Neurosurgery and Radiology University of Pittsburgh Medical Center Pittsburgh, PA
2004 – 2007	Associate Professor of Neurosurgery and Radiology with Tenure University of Pittsburgh Medical Center Pittsburgh, PA
2005 – 2012	Co-Director Neurovascular Surgery University of Pittsburgh Medical Center
1999 - 2012	Director Neuroendovascular Surgery University of Pittsburgh Medical Center
1999 - 2012	Associate Director Center for Cranial Nerve Disorders University of Pittsburgh Medical Center
1999 - 2012	Advisory Board Member Stroke Institute University of Pittsburgh Medical Center
2000 - 2004	Associate Professor of Neurosurgery and Radiology University of Pittsburgh Medical Center Pittsburgh, PA
1999 - 2000	Visiting Associate Professor Neurosurgery and Radiology University of Pittsburgh Medical Center Pittsburgh, PA
1996-1999	Assistant Professor of Neurosurgery and Radiology University of Texas Southwestern Medical Center Dallas, TX
1995 - 1996	Instructor, Department of Neurosurgery and Radiology University of Texas Southwestern Medical Center Dallas, TX
1994 - 1995	Assistant Instructor Department of Neurosurgery and Radiology University of Texas Southwestern Medical Center Dallas, TX

CERTIFICATION AND LICENSURE

Specialty Certification:

American Board of Neurological Surgery Oral Examination	1998
National Board of Medical Examiners	1989
American Board of Neurological Surgery Written Examination	1993
CAST NES (Neuroendovascular) Certification	2019

Medical Licensure:

Texas State Medical License	J7520	1995-Present
Florida State Medical License	ME140930	2019-Present
Georgia State Medical License		2020 - Present

PUBLICATIONS

ORCID #: 0000-0002-6261-6455

Refereed Articles:

- Horowitz MB, Hall WA. Central nervous system germinomas: A review. Arch Neurol 1991; 48:652-657.
- 2. Pistoia F, Horton JA, Sekhar L, **Horowitz M**. Imaging of blood flow changes following angioplasty for treatment of vasospasm. AJNR May/June 1991; 12:446-448.
- 3. **Horowitz MB**, Pang D. Acute cerebellitis: A review of the literature and case report. Pediatric Neurosurgery 1991-1992; 17:142-145.
- 4. **Horowitz M**, Yonas H. The management of occipital neuralgia with selective intradural dorsal root sectioning. Cephalalgia 1993; 13:554-560.
- 5. **Horowitz M**, Yonas H. The management of a giant middle cerebral artery fusiform serpentine aneurysm with distal clipping and retrograde thrombosis. Surgical Neurology 1994; 41:221-225.
- 6. **Horowitz M**, Moossy JJ, Julian T, Ferson P. Video assisted thorascopic resection of thoracic disks. Spine 1994; 19:1082-1086.
- 7. **Horowitz M**, Jungreis CA, Quisling RG, Pollack I. Vein of Galen aneurysms: Current management concepts. AJNR 1994; 15:1486-1496.

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- 8. Barr J, **Horowitz M**, Yonas H, Jungreis C, Horton J. Intraoperative selective catheterization and instillation of urokinase following carotid endarterectomy-associated MCA embolic occlusion. Neurosurgery 1995; 36:606-611.
- 9. **Horowitz M**, Kondziolka D. Multiple familial cavernous malformations evaluated over three generations with magnetic resonance imaging. AJNR 1995;16:1352-1355.
- 10. **Horowitz M**, Purdy P, Unwin H, Carstens G, Greenlee R, Hise J, Kopitnik T, Batjer H, Rollins N, Samson D. Treatment of cerebral dural sinus thrombosis using selective transvenous catheterization and urokinase infusion. Annals of Neurology 1995; 38:58-67.
- 11. **Horowitz M**, Comey C, Hirsch W, Marion D, Griffith B, Martinez J. Acute disseminated encephalomyelitis (ADEM) or ADEM-like syndrome in a heart-lung transplant recipient: A case report. Neuroradiology 1995; 37:434-437.
- 12. **Horowitz M**, Yonas H, Albright AL, Jungreis C, Kanal E. Management of moya-moya disease using stable Xenon blood flow. Surgical Neurology 1995; 44(3):251-262.
- 13. **Horowitz MB**, Miller G, Meyer Y, Carstens G, Purdy PD. Use of an intravascular stent in the treatment of internal carotid and extracranial vertebral artery pseudoaneurysms. AJNR 1996; 17:693-696.
- 14. Purdy PD, **Horowitz M**, Mathews D, Walker B, Carstens GJ, Batjer HH, Devous MD, White CL. Calcium- 45 autoradiography and dual isotope SPECT imaging in a canine model of cerebral ischemia and middle cerebral artery occlusion. AJNR 1996; 17:1161-1170.
- 14. Carstens GJ, **Horowitz M**, Purdy PD, Pandaya A. Radiation dermatitis after spinal arteriovenous embolization: A case report. Neuroradiology 1996; 38:S160-S164.
- 15. **Horowitz M**, Fichtel F, Samson D. Intracavernous carotid artery aneurysms: The importance of angiographic dural waisting. Surgical Neurology 1996; 46:549-552.
- 16. **Horowitz M**, Samson D, Purdy P. Does acute electrothrombosis occur following Guglielmi Detachable Coil aneurysm embolization? Observations at surgery. AJNR 1997; 18:510-513.
- 17. **Horowitz M**, Purdy PD, Burns D, Bellotto D. Scanning electron microscopic findings in a successfully embolized human basilar tip aneurysm using the Guglielmi Detachable Coil system. AJNR 1997; 18:688-690.
- 18. D'Alise MD, Fichtel F, **Horowitz M**. Sagittal sinus thrombosis following minor head injury treated with continuous urokinase infusion. Surgical Neurology 1998;49:430-435.
- 19. Horowitz MB, Willet D, Keffer JH. The use of cardiac troponin-I (cTnI) to determine the incidence of myocardial ischemia and injury in patients with aneurysmal and presumed aneurysmal subarachnoid hemorrhage. Acta Neurochirurgica; 140:87-93, 1998.
- 20. **Horowitz MB**, Dutton K, Purdy PD. Assessment of complication types and rates related to diagnostic angiography and interventional neuroradiologic procedures: A 4-year review (1993-1996). Interventional Neuroradiology; 4:27-37, 1998.
- 21. Horowitz MB, Kopitnik TA, Landreneau F, Krumerman J, Thomas G, Batjer HH, Samson DS. Posterior inferior cerebellar artery aneurysms: Surgical results in 38 patients. Neurosurgery; 43:1026-1032, 1998.
- 22. **Horowitz MB**, Purdy PD, Kopitnik T. Subarachnoid hemorrhage during arteriovenous malformation embolization as a result of vessel wall "sandblasting". Surgical Neurology 50:403-7, 1998.

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- 23. **Horowitz MB**, Kopitnik TA, Landreneau F, Ramnani DM, Rushing EJ, George G, Purdy PP, Samson DS. The multi disciplinary approach to traumatic intracranial aneurysms secondary to shotgun and handgun wounds. Surgical Neurology 51:31-42, 1999.
- 24. **Horowitz MB**, Purdy P, Kopitnik T, Dutton K, Samson D. Aneurysm re-treatment following Guglielmi detachable and non-detachable coil embolization: Report of nine cases and review of the literature. Neurosurgery 44:712-720, 1999.
- 25. **Horowitz MB**, Pride GL, Graybeal DF, Purdy PD. Percutaneous transluminal angioplasty and stenting of mid-basilar stenosis: Report of three cases and literature review. Neurosurgery 45(4):925-930, 1999.
- 26. Pride GK, **Horowitz MB**, Purdy PD. Endovascular problem solving with intravascular stents. AJNR 21(3):532-540, 2000.
- 27. White JA, **Horowitz MB.** Dural wasting as a sign of subarachnoid extension of cavernous carotid aneurysms: A follow-up case report. Surgical Neurology 52 (6):607-9, 1999.
- 28. **Horowitz MB**, Purdy PD. The use of stents in the management of neurovascular disease: A historical and present status review. Neurosurgery 46:1335-1343, 2000.
- 29. **Horowitz MB**, Purdy PD, Valentine J, Morrill K. Remote vascular catastrophes following interventional therapy in Type 4 Ehlers-Danlos Syndrome. AJNR 21:974-976, 2000.
- 30. Levy El, **Horowitz MB**, Jungreis CC, Cahill AM. Lingual artery embolization for severe uncontrollable post-operative tonsillar bleeding: Case report. Ear, Nose and Throat 80:208-211, 2001.
- 31. **Horowitz MB**, Levy EI. Endovascular management of wide necked aneurysms. Contemporary Neurosurgery 23(8):1-9, April 2001.
- 32. Levy E, **Horowitz MB**, Jungreis C, Pride GL, Dutton K, Purdy PD. Transluminal stent assisted angioplasty of the intracranial vertebrobasilar system for medically refractory posterior circulation ischemia: early results. Neurosurgery 48(6):1215-1223, 2001.
- 33. **Horowitz MB**, Levy EI, Koebbe C, Jungreis CC. Transluminal stent -assisted coil embolization of a vertebral confluence aneurysm: Technique report. Surgical Neurology 55:291-296, 2001.
- 34. Levy E, Koebbe CJ, **Horowitz M**, Jungreis C, Pride GL, Dutton K, Kassam A, Purdy PD. Rupture of intracranial aneurysms during endovascular coiling: Management and outcomes. Neurosurgery 49:807-813, 2001.
- 35. **Horowitz MB**, Kassam A, Nemoto E, Arimoto J, Jungreis C. An endovascular primate model for the production of a middle cerebral artery ischemic infarction. Interventional Neuroradiology 7:223-228,2001.
- 36. **Horowitz MB**, Albright AL, Jungreis C, Levy EI, Stevenson K. Endovascular management of a basilar artery false aneurysm secondary to endoscopic third ventriculostomy. Neurosurgery 49:1461-1465, December, 2001.
- 37. Koebbe C, **Horowitz MB**, Levy El, Adelson D, Kassam A, Jungreis C. Endovascular particulate and alcohol embolization for near fatal epistaxis from a skull base vascular malformation. Pediatric Neurosurgery 35:257-261, 2001.
- 38. **Horowitz MB**, Kassam AK, Levy E, Lunsford LD. Misinterpretation of parahippocampal herniation for a posterior fossa tumor: Imaging and intraoperative findings. J of Neuroimaging 12:78-79, January 2002.

- 39. Kassam A, Carrau R, **Horowitz M**, Snyderman C, Hirsch BE, Welch WC. The Role of Fibrin Sealants in Cranial-Base Surgery. Medscape Neurology & Neurosurgery; February 2002. Available at: http://www.medscape.com/viewprogram/1280.
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- 43. **Horowitz MB**, Levy EI, Kassam AB, Purdy PD. Endovascular therapy for intracranial aneurysms: A historical and present status review. Surgical Neurology 57:147-159, 2002.
- 44. **Horowitz MB**, Carrau R, Kanal E, Crammond D. The Risks of Tumor Embolization in the Presence of an Unrecognized Patent Foramen Ovale: Case Report. AJNR23:982-984, 2002.
- 45. **Horowitz M**, Whisnant R, Jungreis C, Snyderman C, Kassam A, Levy El. Pre-operative embolization of carotid body tumor using temporary balloon occlusion and ethanol injection: Case report and review of the literature. ENT Journal 81:536-547, 2002.
- 46. **Horowitz M**, Jungreis C, Genevro J. Delayed Rupture of a Previously Coiled Unruptured Anterior Communicating Artery Aneurysm: Case Report. Neurosurgery 51:804-806, 2002.
- 47. Koebbe CJ, **Horowitz MB**, Levy El, Jungreis C, Purdy PP. Intraarterial thrombolysis for thromboemboli associated with endovascular aneurysm coiling: Report of five cases. Interventional Neuroradiology 8:151-158, 2002.
- 48. **Horowitz M**, Jovin T, Welch W, Kassam A. Bow hunter's syndrome in the setting of contralateral vertebral artery stenosis: Evaluation and treatment. Spine 27: E495-498, 2002.
- 49. **Horowitz M**, Bansal S, Dastur K. Aortic Arch Origin of the Left External Carotid Artery and Type II Proatlantal Fetal Anastomosis: Case Report. AJNR 24(3):323-325, March 2003.
- 50. Koebbe C, **Horowitz MB**, Pless M, Levy El. Jungreis CJ. Alcohol embolization of Carotid-Cavernous Indirect Fistulae. Neurosurgery May 2003 52(5):1111-1116.
- 51. Kassam AB, **Horowitz M**, Carrau R, Snyderman C, Welch W, Hirsch B, Chang YF. The Use of Tisseel Fibrin Sealant in Neurosurgical Procedures: Incidence of Cerebrospinal Fluid Leak and Cost Benefit Analysis. Neurosurgery, May 2003 52(5): 1102-1105.
- 52. Park HK, **Horowitz MB**, Jungreis C, Kassam A, Koebbe C, Genevro J, Dutton K, Purdy P. Endovascular treatment of paraclinoid aneurysms: Experience with 73 cases. Neurosurgery July 2003 53(1): 14-24.
- 53. **Horowitz MB**, Ramzipoor K, Nair A, Miller S, Rappard G, Spiro R, Purdy P. Experimental third ventriculostomy performed using endovascular surgical techniques and their adaption to percutaneous intradural neuronavigation (PINS). Neurosurgery August 2003 53(2): 387-391.
- 54. Jungreis CA, Nemoto E, Boada F, **Horowitz MB.** Model of Reversible Cerebral Ischemia in a Monkey Model. AJNR, October 2003 24:1834-186.

- 55. **Horowitz MB**, Crammond D, Balzer J, Jungreis C, Kassam AB. Aneurysm Rupture During Endovascular Coiling: Effects on Cerebral Transit Time and Neurophysiologic Monitoring and the Benefits of Early Ventriculostomy. Minimally Invasive Neurosurgery October 2003 46(5):300-305.
- 56. Kapoor V, Rothfus WE, Grahovac SZ, Kassam A, **Horowitz MB.** Refractory occipital neuralgia- Preoperative assessment with CT- guided nerve block prior to dorsal cervical rhizotomy. AJNR, Am J Neuroadiol, November-December 2003 24 (10):2105-10.
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- 58. Koebbe C, **Horowitz MB.** A Rare Case of a Ruptured Middle Meningeal Aneurysm Causing Intracerebral Hematoma in a Patient with Moyamoya Disease. AJNR, April 2004:25; 574-576.
- 59. **Horowitz MB**, Jovin TG, Gebel JM. Therapeutic basilar artery occlusion for medically refractory basilar artery stenosis: Case Report. Neurosurgery 54:1253-1257, May 2004.
- 60. Kassam A, Nemoto EM, Balzar J, Rao GR, Welch WC, Boada F, Kuwabara H, **Horowitz M**. Assessment of the toxicology of Tisseel fibrin glue on the central nervous system of the non-human primate. ENT, April 2004;83(4); 246-256
- 61. Engh J, Kassam A, Burkhart L, **Horowitz M**. Early and Late Reoperation for Hemifacial Spasm: An Analysis of 41 Microvascular Decompressions." Skull Base: An Interdisciplinary Approach, Vol. 14, Supplement 1, February 2004
- 62. Kassam AB ^{CA}, **Horowitz M**, Chang YF, Peters DG. Altered Arterial Homeostasis and Cerebral Aneurysms (Part I): A review of the literature and justification for a molecular biomarker search. Neurosurgery May 2004; 54(5): 1199-1212.
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- 65. **Horowitz MB,** Horowitz M, Ochs M, Carrau R, Kassam AB. Trigeminal Neuralgia and Glossopharyngeal Neuralgia. JADA 135: 1427-1433, 2004.
- 66. Crago E, Kerr M, Yuan Kong, Baldisseri M, **Horowitz M**, Yonas H, Kassam A. The impact of cardiac dysfunction on outcome in the SAH population. Acta Neurologica 110:248-253, 2004.
- 67. Capitano B, Niclau DP, Potoski BA, Byers K, **Horowitz M**, Venkataramanan R, Paterson DL. Meropenem administered as a prolonged infusion to treat gram-negative central nervous system infections. Pharmacotherapy, June 2004; 24 (6): 803-807.
- 68. Levy E, **Horowitz M**, Jovin T, Kassam A. Successful management of post tumor resection middle cerebral artery thrombosis with angioplasty/stenting and low dose intrarterial/intravenous IIb/IIIa inhibitor infusion: Case report. Neurosurgery 55 (3): E732-E737, September 2004
- 69. **Horowitz MB**, Levy E, Hathaway B, Jovin T, Hirsch B. Endovascular treatment of a petrous internal carotid artery aneurysm presenting with hemotympanum and epistaxis using a coronary stent and detachable platinum coils: Case report. Archives of Otolaryngology- Head and Neck Surgery 131; 61-63, January 2005.

- 70. Park HK, **Horowitz MB,** Jungreis C, Genevro J, Koebbe C, Levy E, Kassam AB. Periprocedural Morbidity and Morality Associated with Endovascular Treatment of Intracranial Aneurysms. AJNR 26:506-514, 2005.
- 71. King JT, **Horowitz MB**, Kassam AB, Yonas H, J, Roberts M. Validity and Reliability of the SF-12 for the Measurement of Health Status in Patients with Cerebral Aneurysms. J Neurosurg 102:489-494, 2005
- 72. King JT, Yonas H, **Horowitz M**, Kassam AB, Roberts M. Failure of communication between patients with cerebral aneurysms and neurosurgeons. Journal Neurology, Neurosurgery, and Psychiatry: 76; 550-554, March 2005.
- 73. Chang WM, **HorowitzMB**, Stetten GD. Intuitive intra-operative ultrasound guidance using the Sonic Flashlight: A novel ultrasound display system. Neurosurgery 56/ONS-434-ONS-437, 2005.
- 74. Nemoto EM, Jungreis CA, Larnard D, Kuwabara **H, Horowitz M,** Kassam A: Hyperthermia and hypermetabolism in focal cerebral ischemia. Adv. Exp. Med, 566: 83-90, 2004.
- 75. **Horowitz M**, Levy E, Sharts M, Albright AL, Pollack I. Endovascular management of ventriculostomy induced anterior cerebral artery false aneurysm in a 3-week-old child with myelomeningocele. Neurosurgery 57:374, 2005.
- 76. **Horowitz MB**, Gupta R, Jovin T. The dual catheter technique for coiling wide necked cerebral aneurysms: An under reported method. Interventional Neuroradiology 11:155-160, 2005.
- 77. Engh JA, **Horowitz M**, Burkhart L, Chang YF, Kassam A. Repeat microvascular decompression for hemifacial spasm. Journal of Neurology, Neurosurgery and Psychiatry 76: 1574-1580; 2005
- 78. **Horowitz M**, Jovin T, Levy E, Anderson W. Emergent basilar artery and bilateral posterior cerebral artery angioplasty, urokinase/IIb/III inhibitor thrombolysis, and stenting for acute basilar artery occlusion secondary to diagnostic cardiac catheterization: Case report. Journal of Neuroimaging 15:315-318, 2005.
- 79. King JT, Kassam AB, **Horowitz MB**, Yonas H, Tsevat J, Roberts M. Mental Health, Anxiety, and Depression in Patients with Cerebral Aneurysms. J. Neurosurg 103:636-641, 2005.
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- 81. Kassam A, **Horowitz MB**, Welch W, Sclabassi R, Carrau R, Snyderman C, Hirsch B. The role of endoscopic assisted microneurosurgery (Image Fusion technology) in the performance of neurosurgical procedures. Minimally Invasive Neurosurgery 48:1991-196, 2005
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- 83. Gupta R, Yi HJ, Jovin TG, **Horowitz MB**. Three unusual arteriovenous fistulas presenting in young children successfully treated with trans-arterial endovascular embolization. Pediatric Neurosurgery. 2005; 41 (6):328-333.
- 84. Zimmer LA, Hirsch BE, Kassam A, **Horowitz M**, Snyderman CH. Resection of a recurrent glomus jugulare via an endoscopic, transnasal- transclival- transpetrous approach to the jugular fossa. Otology and Neurotology 27 (3): 398-402, April 2006.

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- 87. **Horowitz M**, Levy E, Genevro J, Bonaroti G, Jovin T. Intra/extra-aneurysmal stent placement for management of a wide necked and complex bifurcation aneurysms: Eight cases using the waffle cone technique. Neurosurgery April 2006; 58: 258-262
- 88. Levy EI, Ecker RD, **Horowitz MB**, Gupta R, Hanel RA, Sauvageau E, Jovin TG, Guterman LR, Hopkins LN. Stent assisted intracranial recanalization for acute stroke: early results. Neurosurgery 2006; 58 (3):458-463.
- 89. Gupta R, Horowitz M, Gilman S. Neuroform stent assisted reconstruction and coil embolization of a ruptured A1 segment anterior cerebral artery aneurysms. J Neuroimaging; April 2006; 16 (2): 117-119.
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- 91. **Horowitz MB**, Gupta R, Gologorsky Y, Sandhu E. Jovin T, Yi HJ, Genevro J, Levy E, Kassam A. Clinical and anatomic outcomes following endovascular coiling of middle cerebral artery aneurysms: Report on 30 treated aneurysms and review of the literature. Surgical Neurology. July 2006 66:167-171.
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Textbooks Authored or Edited:

1. **Horowitz M,** Levy E. (Editors) Progress in Neurological Surgery: Neuroendovascular Surgery. S. Karger AG, Switzerland, 2005.

Book Chapters:

- 2. **Horowitz M**, Jungreis C, Quisling RG, Pollack I. Vein of Galen Aneurysms. *In* <u>Cerebrovascular Disease</u>. H. Hunt Batjer (Editor). Raven Press. New York. 1996. pp 823-832.
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26. Tomycz ND, Horowitz MB. Inferior Petrosal Sinus Sampling in the Diagnosis of Sellar Neuropathology for Neurosurgery Clinics: Interventional Radiology

PROFESSIONAL ACTIVITIES

Presentations/Invited Lectures:

- 1. Survival of patient with brain aspergillosis following liver transplantation: A role for ABCD (Amphotericin B Colloidal Dispersion) and Excision. Segal R, **Horowitz MB**. The American Association of Neurological Surgeons Meeting, San Diego, CA, 1994.
- 2. Management of Moyamoya disease using stable Xenon-CT blood flow. **Horowitz MB**, Yonas H. Fourth International Workshop on Cerebrovascular Surgery, Chicago, IL, 1995.
- 3. The medical, surgical, and interventional neuroradiologic management of subarachnoid hemorrhage. **Horowitz MB**. Texas Association of Neurological Surgeons, Dallas, Texas, 1995.
- 4. Interesting neuroradiologic cases. Horowitz MB. Diagnostic Radiology Update, Dallas, Texas, 1995.
- Complex conformational coils using nickel titanium alloy and possible application in interventional neuroradiology. Purdy P, Horowitz MB. 34th Annual Meeting of the American Society of Neuroradiology, Seattle, June 1996.
- 6. Neurovascular anatomy and interventional neuroradiology and its clinical applications. **Horowitz MB**. Micro Interventional Systems, Inc., Training Seminar, 1996.
- 7. Incidence of unsuspected blunt carotid artery injury. Panel discussant. AANS Annual Meeting, Denver, CO, 1997.
- 8. An aneurysm scoring index as a predictor of clinical outcome. Purdy P, **Horowitz M**, Kopitnik T, Batjer H, Thomas J, Clamp SJ, McIntire D, Samson D. American Society of Interventional and Therapeutic Neuroradiology Meeting, New York, NY, 1997.
- 9. GDC treatment of intracranial aneurysms and fistulas. American Association of Neuroscience Nurses. Dallas, Texas, May 1997.
- 10. Management of intracranial hemorrhage following thrombolytic therapy. American Academy of Neurology Acute Stroke Management Workshop. Dallas, Texas, June 1997.
- 11. Management of subarachnoid hemorrhage. American Academy of Neurology Acute Stroke Management Workshop. Dallas, Texas, June 1997.
- 12. Evaluation and management of subarachnoid hemorrhage. Continuing Medical Education Series. St. Paul Hospital. Dallas, Texas, June 1997.
- 13. Current Management of Cerebral Aneurysms. Coiling and clipping. One surgeon's view. University of Mississippi. Jackson, Mississippi, October 1997
- 14. Aneurysms and subarachnoid hemorrhage. Journey Through the Nervous System: A Look at Today's Neuroscience Nursing. UT Southwestern Medical School at Dallas, Dallas, TX, October 1997.
- 15. Endovascular management of intracranial aneurysms. University of Pittsburgh Medical Center, Pittsburgh, PA, February 1998.

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- 16. Discussant for "Late Angiographic Follow-up of Surgically Treated Aneurysms: Recurrence, De Novo Formation, and the Fate of Residuals. AANS Annual Meeting, Philadelphia, April, 1998.
- 17. Panelist for Posterior Circulation Aneurysms. AANS Annual Meeting, Philadelphia, April 1998.
- 18. Management of Intracranial Aneurysms Secondary to Gunshot Wounds to the Head. Meeting of the Southern Neurosurgical Society, Hot Springs, WV, June 1998.
- 19. Moderator, Complications of Endovascular Aneurysm Treatment. 11th Annual Interventional Neuroradiology Peer Review Conference, Jackson Hole, Wyoming, July, 1998.
- 20. Visiting Professor Lecturer, Department of Neurosurgery University of Illinois, Chicago, Illinois, August 11-12, 1998.
- 21. Instructor for Practical Course on Interventional Techniques. CNS Annual Meeting, Seattle, October, 1998.
- 22. Current Surgical Management of Anterior Communicating Artery Aneurysms. Dexter M, Horowitz M, Kopitnik T, Samson D. CNS Annual Meeting, Seattle, October, 1998.
- 23. Radial Artery Interposition Grafts for Middle Cerebral Artery Reconstruction: A Series of Seven Cases. Samson D, Dexter M, **Horowitz M**, Kopitnik T. CNS Annual Meeting, October, 1998.
- 24. Endovascular Neurosurgery. Surgical Grand Rounds. UT Southwestern Medical Center, Dallas, Texas. February 3, 1999.
- 25. Cerebral Aneurysms: Advances in Surgical Management. Texas Academy of Physician Assistants 24th Annual Primary Care Conference. Dallas, Texas. March 13, 1999.
- 26. Instructor for Basic Endovascular Techniques. AANS Annual Meeting, New Orleans, April, 1999.
- 27. Large and Giant Aneurysms of the Vertebrobasilar System. Duke Samson, Thomas Kopitnik, **Michael Horowitz**. AANS Annual Meeting, New Orleans, April 1999.
- 28. Operation or Re-operation for Retained/Residual Arteriovenous Malformation. Duke Samson, Hunt Batjer, Thomas Kopitnik, **Michael Horowitz**. AANS Annual Meeting, New Orleans, April 1999.
- 29. Cervical and Intracranial Arterial Stenting. Neurosurgical Grand Rounds, University of Texas Southwestern Medical Center, Dallas, Texas, June 25, 1999.
- 30. Panel Speaker, Surgical Management of Partially Coiled or Recurrent Anterior Circulation Aneurysms. Congress of Neurological Surgeons Annual Meeting, Boston, October 1999.
- 31. Faculty Instructor, Practical Course on Posterior Circulation Aneurysms, Congress of Neurological Surgeons Annual Meeting, Boston, October 1999.
- 32. Faculty Instructor, Practical Course on Methylmethacrylate Vertebroplatsy, Congress of Neurological Surgeons Annual Meeting, Boston, October 1999.
- 33. Neuroendovascular Therapies, Surgical Grand Rounds Lecture, University of Pittsburgh Medical Center, September 22, 1999.
- 34. Carotid, Vertebral and Intracranial Stenting, Neurology/Neurosurgery Grand Rounds, University of Pittsburgh Medical Center, October 6, 1999.

- 35. Carotid Stenting, Internal Medicine Grand Rounds Presentation, University of Pittsburgh Medical Center, September 24, 1999.
- 36. Speaker, An Overview of Trigeminal Neuralgia and Recent Advances in Microvascular Decompression Surgery, Trigeminal Neuralgia Association, Philadelphia, PA, November 20, 1999.
- 37. Trigeminal Neuralgia, Trigeminal Neuralgia Association, Connecticut, March 25, 2000.
- 38. Carotid, Vertebral and Intracranial Stenting. Armstrong County Memorial Hospital, Kittaning, PA, January 6, 2000.
- 39. Effects of Botulinin Toxin on Clinical Outcome of Microvascular Decompression for Hemifacial Spasm, Scarrow AM, Kassam AB, Levy EI, **Horowitz MB**, Yonas H, Jannetta PJ. North American Skull Base Society, Phoenix, AZ, March 17, 2000.
- 40. Effects of Botulinin Toxin on Intraoperative Lateral Spread During Microvascular Decompression for Hemifacial Spasm, Scarrow AM, Kassam AB, Balzer JR, Patel A, Witham T, **Horowitz M**, Jannetta PJ. North American Skull Base Society, Phoenix, AZ, March 17, 2000.
- 41. Trigeminal Neuralgia: Anatomy, Etiology, and Treatment, Trigeminal Neuralgia Association, Pittsburgh, PA, March 18, 2000.
- 42. Carotid and Vertebral Artery Stenting, Citizens General Hospital, New Kensington, PA, April 11, 2000.
- 43. Endovascular Neurosurgery, Grand Rounds, Pittsburgh Eye and Ear Institute, May 3, 2000.
- 44. Trigeminal Neuralgia: Anatomy, Etiology, and Treatment, Trigeminal Neuralgia Association, Harrisburg, PA, May 22, 2000.
- 45. Endovascular Neurosurgery, Medical Grand Rounds, Shadyside Hospital, Pittsburgh, PA, June 1, 2000.
- 46. Glossopharyngeal Neuralgia: A ten year experience in 200 patients, Kassam AB, Patel A, **Horowitz M**, Yonas H, Jannetta PJ. 2000 Congress of Neurological Surgeons Annual Meeting, Sept. 2000.
- 47. Management of Trigeminal Neuralgia: predictors of outcome for microvascular decompression, Tyler-Kabara E, Kassam AB, **Horowitz M**, Urgo L, Hadjipanayis C, Yonas H, Jannetta PJ. 2000 Congress of Neurological Surgeons Annual Meeting, Sept. 2000.
- 48. Impact of Lateral Spread Monitoring on Microvascular Decompression for Hemifacial Spasm. A prospective Analysis of 75 cases. Kassam AB, Scarrow A, **Horowitz M**, Balzer J, Patel A, Yonas H, Jannetta PJ. 2000 Congress of Neurological Surgeons Annual Meeting, Sept. 2000.
- 49. Correlation of Transcranial Doppler and Stable Xenon Computed Tomography Subarachnoid Hemorrhage. Kassam AB, Scarrow A, Yonas H, **Horowitz M**, Roach A, Roach E, Ashton C. 2000 Congress of Neurological Surgeons Annual Meeting, Sept. 2000.
- 50. Anterior Circulation Aneurysms: Treatment Options, Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 25, 2000.
- 51. Endovascular Neurosurgery: State of the Art AVMs, Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 26, 2000.
- 52. Posterior Circulation Aneurysms, Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 27, 2000.

- 53. Management of Trigeminal Neuralgia: Predictors of Outcome for Microvascular Decompression, Tyler-Kabara E, Kassam A, **Horowitz M**, Urgo L, Hadjipanayis C, Yonas H, Jannetta P. Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 27, 2000.
- 54. Management of Atypical Trigeminal Neuralgia: Predictors of Outcome for Microvascular Decompression, Tyler-Kabara E, Kassam A, **Horowitz M**, Urgo L, Hadjipanayis C, Yonas H, Jannetta P. Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 27, 2000.
- 55. Glossopharyngeal Neuralgia: A Ten-Year Experience in 200 Patients, Kassam A, Patel A, **Horowitz M**, Yonas H, Jannetta P. Congress of Neurologic Surgeons Annual Meeting, San Antonio Texas, September 27, 2000.
- 56. Carotid Stenting, Visiting Professor Lecture, Columbia University, New York, New York, October 5, 2000.
- 57. Intra-procedural Rupture of Intracranial Aneurysms During Coil Embolization: Management and Outcomes, Horowitz M, Levy El. Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and ASITN, Waikoloa, Hawaii, February 10, 2001.
- 58. Transluminal Stent-Assisted Angioplasty of the Intracranial Vertebrobasilar System for Medically Refractory Posterior Circulation Ischemia. **Horowitz M**, Levy El. Joint Meeting of the AANS/CNS Section on Cerebrovascular Surgery and ASITN, Waikoloa, Hawaii, February 10, 2001.
- 59. Impact of Botulinium Toxin on Subsequent Microvascular Decompression for the Treatment of Hemifacial Spasm. Kassam A, **Horowitz M**, Scarrow A, Balzer J, Pless M. Nanos Meeting, Rancho Mirage, CA, February 20, 2001.
- 60. Outcomes Following Microvascular Decompression for the Treatment of Hemifacial Spasm in Eight-Seven Consecutive Patients over an Eighteen Month Period. Kassam A, **Horowitz M**, Balzer J, Pless M, SoSo M, Nanos Meeting, Rancho Mirace, CA, February 20, 2001.
- 61. Image Fusion in 100 Skull Base, Vascular, and Microvascular Procedures: Preliminary Results. Kassam A, **Horowitz M**, Carrau R, Snyderman C, Hirsch B, Welch W, Seever, G, RN. Annual Meeting of North American Skull Base Society, Lake Buena Vista, Florida, March 3, 2001.
- 62. Cranial Neuropathies: Pitfalls in Diagnosis and Management. **Horowitz M**, Kassam AB, SoSo M, Pless M, Carrau R, Snyderman C, Hirch B, Ochs M, Burkhart L. 12th Annual Meeting of North American Skull Base Society, Lake Buena Vista, Florida, March 3, 2001.
- 63. Multimodality Neuromodality Neurophysiological Monitoring During Skull Base Surgery. Balzer JR, Kassam AB, Krieger D, Crammond D, Sclabassi RJ, **Horowitz MB**, Carrau R, Snyderman C, Hirsch. 12th Annual Meeting of North American Skull Base Society, Lake Buena Vista, Florida, March 3, 2001.
- 64. Occipital-Cervical Stabilization Techniques Following Craniocervical Surgery. Kassam A, Gerszten PC, Burke JP, Carrau R, Snyderman C, **Horowitz M**. 12th Annual Meeting of North American Skull Base Society, Lake Buena Vista, Florida, March 3, 2001.
- 65. Comparative Analysis of Quality of Life Outcome Scales in Cranial Base Tumor Population and the Development of a new Disease Specific Instrument. Seever G, Kassam A, **Horowitz M**, Carrau R, Snyderman C, Welch W, Pless M. 12th Annual Meeting North American Skull Base Society, Lake Buena Vista, Florida, March 5, 2001.
- 66. Trigeminal Neuralgia. Kassam AB, **Horowitz MH**. Medical Grand Rounds. St. Margaret's Hospital, Pittsburgh, PA, April 5, 2001.

- 67. Neurosurgical Aspects of a Severe Closed Head Injury. Invited lecturer. Traumatic Brain Injuries Litigation Group, American Trial Lawyers Association Annual Convention, Montreal, Canada, July 15, 2001.
- 68. Poor Grade Aneurysm Patients: Management Options. Invited Lecture. Congress of Neurologic Surgeons 51st Annual Meeting. San Diego, CA, October 1, 2001.
- 69. GDC Embolization of Aneurysms, Thrombolysis, and Vasospasm. Invited Lecture. San Antonio, Texas, May 21, 2001.
- 70. Endovascular Management of Vascular Tumors. Advances in Cranial Base Surgery. Pittsburgh, PA, May 4-5, 2001.
- 71. Aneurysm Embolization. University of Pittsburgh School of Nurse Anesthesiologists. Pittsburgh, PA, June 2, 2001.
- 72. Angioplasty and Stent Placement (panelist). 14th Annual Interventional Neuroradiology Peer Review Conference. Jackson Hole, WY, August 2, 2001.
- 73. Carotid Stenting. South Hills/Southwest Medical Society. Pittsburgh, PA, September 25, 2001.
- 74. Vertebrobasilar Artery Stenting. Second Annual Stoke Management Conference. Pittsburgh, PA. October 2001.
- 75. Neurophysiological Monitoring in Microvascular Compression Syndromes. Functional Neurosurgery Meeting. Adelaide, Australia. September, 2001.
- 74. Microvascular Compression Syndromes. Interesting Observations. Functional Neurosurgery Meeting. Adelaide, Australia. September, 2001.
- 75. The INR Suite as a Critical Care Arena. AANS/CNS Section on Cerebrovascular Surgery. Dallas, Texas, February 14, 2002.
- 76. Neurophysiologic Monitoring During Endovascular Coiling of Intracranial Aneurysms. 37th Annual Meeting of the Rocky Mountain Neurosurgical Society and The American Association of Neurological Surgeons, Santa Ana Pueblo, New Mexico, June 17, 2002.
- 77. Endovascular Management of Anterior Communicating Aneurysms: Short Term Results in A Series of 53 Patients. 37th Annual Meeting of the Rocky Mountain Neurosurgical Society and The American Association of Neurological Surgeons, Santa Ana Pueblo, New Mexico, June 17, 2002.
- 78. Microvascular Decompression for Glossopharyngeal Neuralgia: 217 Cases. 37th Annual Meeting of the Rocky Mountain Neurosurgical Society and The American Association of Neurological Surgeons, Santa Ana Pueblo, New Mexico, June 17, 2002.
- 79. PINS 3rd Ventriculostomy. 37th Annual Meeting of the Rocky Mountain Neurosurgical Society and The American Association of Neurological Surgeons, Santa Ana Pueblo, New Mexico, June 17, 2002.
- 80. PINS 3rd Ventriculostomy. Second Annual Pittsburgh Technology Roundtable Meeting. Pittsburgh, PA, July 2, 2002.
- 81. Endovascular Symposium. Panelist. Congress of Neurological Surgeons Annual Meeting. Philadelphia, PA, September 23, 2002

- 82. Endovascular Management of Carotid Artery Disease. AHA Operation Stroke: Medical Perspectives and Therapeutic Interventions. Boardman, Ohio, October 11, 2002.
- 83. Alcohol Treatment of Indirect Carotid Cavernous Fistulas. Joint Section Cerebrovascular Surgery Meeting, Pheonix, AZ, February 2003.
- 84. Endovascular Neurosurgery. Surgical Grand Rounds. Mercy Hospital, Pittsburgh, PA, March 26, 2003.
- 85. Hyperthermia and hypermetabolism in focal cerebral ischemia. International Society of Oxygen Transport to Tissue, Rochester, NY, August 16-20, 2003.
- 86. Thirty Day Procedure Related Morbidity Associated with Endovascular Treatment of Intracranial Aneurysms. American Academy of Neurological Surgery Meeting, Williamsburg, Virginia, October 30, 2003.
- 87. Neuroendovascular Surgery and its Role in Otolaryngology. UPMC ENT Oncology Grand Rounds, Pittsburgh, PA, January 21, 2004.
- 88. Chemotherapy for Head and Neck Cancer. Pittsburgh Cancer Institute Grand Rounds, Pittsburgh, PA, February 10, 2004.
- 89. Neuroendovascular Surgery. UPMC Anesthesia Grand Rounds, Pittsburgh, PA, February 26, 2004.
- 90. Minimally Invasive Endoscopic Surgery of the Cranial Base and Pituitary Fossa. Kassam AB, Snyderman C, Carrau R, Sclabassi R, Hirsch B, **Horowitz MB**. UPMC Presbyterian Hospital, Pittsburgh, Pennsylvania, January 23-24, 2004.
- 91. Intracranial Aneurysms: Coil or Clip? 54th Annual Meeting Congress of Neurological Surgeons, San Francisco, California, October 18, 2004.
- 92. **Horowitz MD**, Levy EI, Sauvageau E, Genevro J, Guterman LR, Hanel RA, Wehman JC, Gupta R, Jovin TG: Intra/extra-aneurysmal stent placement for management of wide-necked aneurysm: Waffle cone technique. *Joint annual meeting of the AANS/CNS cerebrovascular section and American Society of Interventional & Therapeutic Neurology*, Caribe Royale Orlando, Orlando FL, February 17-20, 2006. Poster Presentation.
- 93. Hravnak M, Crago E, Hricik A, **Horowitz MB**. Relationship between serum glucose and outcomes in patients with subarachniod hemorrhage. 2007 American Journal of Critical Care; 16: 303.(AACN Research Abstract Award Winner 2007)
- 94. The Mink G385 Polymorphism Associates with Atrial Arrhythmias after Subarachnoid Hemorrhage Presentation. Abstract Oral Series. 2007 Stroke Council Award and Lecture Presentation.
- 95. Interventional Radiology, Grand Rounds, UPMC Passavant Hospital, November 13, 2007.
- 96. Emergent Management of Neurovascular Events, UPMC Shadyside Hospital, June 14, 2008.
- 97. Stent Assistance in SAH, 5th Annual SNIS meeting, Olympic Valley, CA, July 31, 2008.
- 98. Third Catholic International Neurosurgery Conference and Update, Seoul Korea, February 12-19, 200

FELLOWS TRAINED

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Clinical Fellows:	
2003-2005	Tudor Jovin, M.D., University of Pittsburgh Medical Center, Presbyterian University Hospital, Department of Neurology, 200 Lothrop Street, Suite 811, Pittsburgh, PA 15213
2004-2006	Rishi Gupta, M.D., University of Pittsburgh Medical Center, Department of Neurology, Kaufmann Building, Suite 811, Pittsburgh, PA 15213
2006-2008	Nirov Vora, M.D. University of Pittsburgh Medical Center, Department of Neurology, Kaufmann Building, Suite 811, Pittsburgh, PA 15213
2007-2009	Atzi Aleu, M.D. University of Pittsburgh Medical Center,Department of Neurology, Kaufmann Building, Suite 811, Pittsburgh, PA 15213
2008-2010	Brian Jankowitz, M.D. University of Pittsburgh Medical Center, Department of Neurosurgery, Presbyterian Hospital, Suite B 400, Pittsburgh PA 15213
2008-2010	Ridwan Lin, M.D. University of Pittsburgh Medical Center, Department of Neurology, Kaufmann Building, Suite 811, Pittsburgh, PA 15213
2008-2010	Dean Kostov, M.D. University of Pittsburgh Medical Center, Department of Neurosurgery, Presbyterian Hospital, Suite B 400, Pittsburgh, PA 15213
2008-2010	Hilal Kaanan, M.D. University of Pittsburgh Medical Center, Department of Neurosurgery, Presbyterian Hospital, Suite B 400, Pittsburgh, PA 15213
2010-2012	Mohammed Jumma, M.D. University of Pittsburgh Medical Center, Department of Neurosurgery, Presbyterian Hospital, Suite B 400, Pittsburgh, PA 15213
2010-2012	Syed Zaidi, M.D. University of Pittsburgh Medical Center, Department of Neurosurgery, Presbyterian Hospital, Suite B 400, Pittsburgh, PA 15213
Research Fellows:	
3/1/02-2/28/04	Haw-Kwan Park, M.D., Department of Neurological Surgery, St. Mary's Hospital, The Catholic University of Korea, #62 Yoido-dong, Youngdungpo-gu, Seoul, 150-713 Korea
7/1/04-6/30/05	Hyeong-Joong Yi, MD, Department of Neurological Surgery, Hanyang University Medical Center #17, Haengdang-gingm Sungdong-gu, 133-792, Seoul Republic of Korea
1/07-1/09	Seong-Rim Kim, M.D.Department of Neurosurgery, Holy Family Hospital, The Catholic University of Korea, Sosa-Dong 2, Wonmi-gu, Bucheon, 420-717, Republic of Korea (South Korea

RESEARCH FUNDING

National Institute of Health Funding:

Grant Number	Grant Title	Role & Percentage of Effort	Years	Amount	Source
1 R44 NS 107111-01	Drug Eluting Embolization Coils for Improved Treatment of Intracranial Aneurysms	CO-Investigator	9/1/2018- 2/28/2021	\$1,725,000	National Institute of Health
R43 Small Business Innovation Research (Phase I)	Drug Eluting Coils for Improved Treatment of Brain Aneurysms	Co-Investigator	5/2015- 10/2015	\$225,000	National Institute of Health
R01HL074316	Myocardial Ischemia and Vasospasm in Aneurysmal SAH	PI 25% effort	2004-2009	\$2,273,652	National Institute of Health R01
R01NR004339	Role of 20-HETE on Vasospasm- induced Ischemia after SAH	CO-Investigator 2% effort	2004-2014	\$3,470,058	National Institute of Health

Prior Grant Support:

Funding Source: Howmedica Leibinger

Name of Grant: Image Fusion Technology Systems

Dates: 9/1/01 - 8/31/02

Role on Project: Co-Investigator

% of effort: 5% \$ Award: \$49,020.00

Funding Source: Target Therapeutics, Inc.

Name of Grant: Validation of Canine Venous Pouch Aneurysm Model by Comparison to

Pathological Specimens of Humans

Dates: 7/1/01 - 12/31/02

Role on Project: Co-Investigator

% of effort: 5% \$ Award: \$27,000

Closed Research Projects:

1995- Co-Investigator; A prospective clinical study to evaluate the safety and efficacy of the modified detachment zone and power supply for the Guglielmi Detachable Coil (GDC) (IRB #099126800)

1995- Co-Investigator; Embolization of the internal carotid artery (parent vessel occlusion) associated with cerebral aneurysms with ITC detachable silicone balloons (DSB)(IRB # 089626600)

Curriculum Vitae *08/13/2023*

1999- Co-investigator; Compare the use of N-butylcyanoacrylate-tantalum powder to conventional treatment of preoperative embolization of cerebral AVMs (IRB#049610800)

SERVICE

Hospital Committees

2019-2020	Clinical Director Lee Health System Stroke Service
2007- 2012	Malpractice Committee, University of Pittsburgh Medical Center, Pittsburgh, PA
1999- 2012	Associate Director, Center for Cranial Nerve Disorders, University of Pittsburgh Medical Center, Pittsburgh, PA
1999- 2012	Director, Center for Endovascular Neurosurgery, University of Pittsburgh Medical Center, Pittsburgh, PA
2001-2012	Member UPMC Innovative Practices Committee, University of Pittsburgh Medical Center, Pittsburgh, PA
2002-2012	Chair, UPMC Presbyterian Technology Assessment Committee, Neuro/ENT/Ophthamology/Musculoskeletal Services (NEOMS) Committee
1998-1999	Co-medical director Zale-Lipshy University Hospital Intensive Care Unit
1995-1999	UT Southwestern Medical Center, Dallas, Texas Surgical Case Review Committee
1995- 1999	UT Southwestern Medical Center, Dallas, Texas Quality Assurance, Risk Management, Medical Records Committee

Academic Committees

1996-2001	Congress of Neurological Surgeons International Committee, Member of Executive Council
1995-1999	Editor, UTSW Department of Neurosurgery monthly vascular newsletter (Cerebrovascular Rounds)