

# **CURRICULUM VITAE**

## **BRIAN R. COPELAND, M.D.**

### **PERSONAL INFORMATION**

Business Address: 4011 Orchard Drive, Suite 4004  
Midland, MI, 48640-6189

Business Phone: 989-837-6374  
989-837-6480 (fax)  
866-284-7279

Professional Entity: Brian R. Copeland, M.D., P.C.  
4011 Orchard Drive, Suite 4004  
Midland, MI 48640-6189

### **LICENSURE**

State of California: G44XXX, 1981  
State of Michigan: 43010XXXXX, 2000  
BNDD: AC100XXXX, 1981  
X-ray supervisors, California, 1983

### **CERTIFICATION**

1980 United States Board of Medical Examiners  
1983 American Board of Neurological Surgeons  
1984 Fellowship, American College of Surgeons

### **EDUCATION**

1967-1971 B.A., Dartmouth College, Hanover, NH  
1971-1975 M.D., Columbia University, New York, NY  
1975-1976 General Surgery Intern, University of Minnesota Hospitals, Minneapolis, MN  
1975-1976 General Surgery Resident, University of Minnesota Hospitals, Minneapolis, MN  
1977-1979 Assistant Resident Neurosurgery, Columbia-Presbyterian, New York, NY  
1979 Senior House Officer (locums), National Hospital for Nervous and Mental  
Disease, Queen's Square, London, England  
1979-1980 Senior Resident Neurosurgery, Columbia-Presbyterian, New York, NY  
1980-1981 Chief Resident Neurosurgery, Columbia-Presbyterian, New York, NY

## **AWARDS AND HONORS**

1971	Distinction in Computer Science, Math Dept., Dartmouth College, Hanover, NH
1972 -1975	Joseph Collins Fellow, Columbia University, New York, NY, P&S
1972-1975	Rudin Fellow, Columbia University, New York, NY, P&S
1976-1977	Clinical Fellow in Surgery, University of Minnesota

## **ACADEMIC APPOINTMENTS**

1981-2000	Assistant Clinical Professor, Department of Neurosurgery, University of California, San Diego, California
1982-2000	Adjunct Assistant Professor, The Scripps Research Institute, Department Of Molecular and Experimental Medicine, La Jolla, California
2000-2005	Adjunct Associate Professor, The Scripps Research Institute, Department Of Molecular and Experimental Medicine, La Jolla, California

## **RADIOSURGERY TRAINING**

1989	Linac, Scripps Clinic, La Jolla, CA
1995	Leksell Gamma Knife Training Course, Scripps Memorial Hospital, La Jolla, CA, physics, computer, clinical
2000	Brain Lab, Saginaw, MI
2003	Gamma Knife Model C Applications, University of Pittsburgh, Indications, Disease entities, Dosages, Complications, Clinical Cases
2004	Advanced Gamma Planning, Norcross, GA, Physics, Administration, Techniques
2005	Advanced Gamma Knife Training, Stockholm, Sweden, Calculation techniques, Planning techniques, Wizard, QA
2007	Gamma Knife Perfexion, Stockholm, Sweden, Software platform, Sector concepts Engineering considerations, QA, Planning
2007	Perfexion Clinical Applications, Marseille France, Acoustics, Trigeminal Neuralgia, Metastasis, Meningioma

## **PRACTICE EXPERIENCE**

1981-1984	Private Practice, Neurosurgical Medical Clinic, San Diego, CA
1982-1992	Staff Neurosurgeon, Scripps Clinic, La Jolla, CA
1992-2000	Head, Division of Neurosurgery, Scripps Clinic, La Jolla, CA
2000-2009	Chief of Neurosurgery, MidMichigan Medical Center, Midland, MI
2003-present	Director MidMichigan Gamma Knife, Midland, MI
2009-present	Senior Staff Neurosurgeon

## **PROFESSIONAL ORGANIZATIONS**

Michigan Medical Association  
Midland Medical Society  
Michigan Association of Neurosurgeons  
American Association of Neurological Surgeons  
American College of Surgeons  
Congress of Neurological Surgeons  
Tri City Neuroscience Society  
AANS Section on Tumors  
American Association for Advancement of Science

## **HOSPITAL AFFILIATIONS**

2000-present MidMichigan Medical Center, Midland, MI (Chief 2000-2009)  
1981-2000 Green Hospital, Scripps Clinic, La Jolla, CA (Chief 1994-2000)  
1981-2000 Children's Hospital, San Diego, CA  
1981-2000 Sharp Memorial Hospital, San Diego, CA, staff neurosurgeon  
1981-2000 Scripps Memorial Hospital, La Jolla, CA  
1981-1992 Mercy Hospital, San Diego, CA, Staff Neurosurgeon  
1981-1987 Bay General Hospital, San Diego, CA, Staff Neurosurgeon  
1981-1988 Chula Vista Community Hospital, San Diego, CA, Staff Neurosurgeon  
1986-1989 Paradise Valley Hospital, San Diego, CA, Staff Neurosurgeon

## **PROFESSIONAL ACTIVITIES**

1977-1979 Consultant in Neurosurgery, State of NY Dept. of Health, New York, NY  
1979-1980 Residents Committee, Presbyterian Hospital, New York, NY  
1982-1984 Officer, San Diego Academy of Neurological Surgery, San Diego, CA  
1986-1992 Board of Directors, Center for Neurologic Study, San Diego, CA  
1989-1991 Chairman, Department of Neuroscience, Children's Hospital, San Diego, CA  
1986-2000 Investigational Review Board, Scripps Clinic, La Jolla, CA  
1992-1998 Advisory Panel, Codman Scientific; developing hardware and software (SAIC)  
for frameless stereotactic system, beta test site supervisor  
2000-2006 Chairman, Department of Neuroscience, MidMichigan Medical Center, Midland, MI  
2008-present President, Midland County Medical Society, Midland, MI

## POSTGRADUATE COURSES, SYMPOSIUMS

1. "Pediatric Trauma," Hotel Intercontinental, Blunt and Penetrating Head Injury in Children, Faculty, September 5, 1986.
2. "Practical Application of Recent Advances in the Neurosciences," Course Director, Scripps Clinic, San Diego, CA, October 25-26, 1986.
3. "Thrombolytic Therapy in Acute Ischemic Stroke," Faculty, 1988.
4. "Oxygenated Fluorocarbons in Cerebral Ischemia," Scientific Advisor Panel, Johnson & Johnson, February 28, 1989.
5. Scientific Advisory Panel, Codman Instruments; Washington DC, March 7, 1992.
6. "Recent Advances in Neurology and Neurosurgery," Mt. Pleasant, MI, Nov. 1-2, 2003.

## PUBLICATIONS

### Abstracts

1. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Hanson SR, Harker LA: Experimental acute thrombotic stroke in a baboon model. XIIIth World Congress of Neurology, Hamburg, Germany, J Neurol 232:56 (04:13:04), 1985.
2. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Harker LA: Thrombolytic therapy in a baboon model of acute stroke. VIIIth International Congress on Fibrinolysis, Wien, Germany, Astra. 215, 1986.
3. Copeland BR, Waltz TA, Abbott G, Dalessio DJ: Plenary Session IV, Treatment of trigeminal neuralgia by intracisternal glycerol injection, Abstract Form, 1986.
4. del Zoppo GJ, Copeland BR, Hacke W, Anderchek KA: t-PA does not alter neurological outcome following focal cerebral ischemia and reperfusion. Fibrinolysis 4 (Suppl 3):18, 1990.
5. del Zoppo GJ, Copeland BR, Anderchek KA: Plasma fibrinogen and t-PA antigen levels following experimental acute focal cerebral ischemia. Fibrinolysis 4 (Suppl 3):147, 1990.
6. del Zoppo GJ, Yui J-Q, Morrissey JH, Copeland BR: Tissue factor localization in the cerebral gray matter and microvasculature of the nonhuman primate. Thromb Haemost 65:682, 1991.
7. Copeland BR, Mehta R, Kotecha R, Vedula R, Langrill L: Gamma knife treatment for trigeminal neuralgia. Presented: Trigeminal Neuralgia Association, September 17, 2006.

## Articles

1. Kvam DA, Loftus CM, Copeland BR, Quest DO: Seizures during the immediate postoperative period. *Neurosurgery* 12(1): 14-17, 1983.
2. Loftus CM, Copeland BR, Carmel PW: Cystic supratentorial gliomas: Natural history and evaluation of modes of surgical therapy. *Neurosurgery* 17(1):19-24, 1985.
3. Waltz TA, Dalessio DJ, Ott KH, Copeland BR, Abbott G: Trigeminal cistern glycerol injections for facial pain. *Headache* 25(7):354-357, 1985.
4. del Zoppo GJ, Copeland BR, Harker LA, Waltz TA, Zyroff J, Hanson SR, Battenberg E: Experimental acute thrombotic stroke in baboons. *Stroke* 17(6): 1254-1265, 1986.
5. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Harker LA: Urokinase therapy in a baboon model of acute thrombotic stroke. *Stroke* 17:638-643, 1986.
6. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Plow EF, Harker LA: The beneficial effect of intracarotid urokinase on acute stroke in a baboon model. *Stroke* 17(4): 638-643, 1986.
7. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Harker LA: Thrombolytic therapy in a baboon model of acute stroke. XIth International Joint Conference on Stroke and Cerebral Circulation, San Francisco, *Stroke* 17:133(31), 1986.
8. Hacke W, del Zoppo GJ, Copeland BR, Aung MH, Harker LA: Somatosensory evoked potentials and transcranial motor pathway stimulation in the baboon stroke model. *Neurology* 37-I:363, 1987.
9. Waltz TA, Dalessio DJ, Copeland BR, Abbott G: Percutaneous injection of glycerol for treatment of trigeminal neuralgia. *Clin J Pain* 5:195-198, 1989.
10. Barba D., Kitchen L, Copeland BR: Pediatric head trauma. In: *Decision making in trauma management: A multidisciplinary approach*. Mancini Klein, BC Decker, publisher, 1989.
11. Peterson BM, Keller K, Waltz TA, Rodarte A, Copeland BR, Altenau L: Hypertonic saline in the management of severe pediatric head trauma. June, 1989.
12. del Zoppo GJ, Copeland BR, Anderchek KA, Hacke W: Intracerebral hemorrhage and infarction volume following recombinant tissue plasminogen activator in an acute stroke model. *J. Cereb Blood Flow Metab* 9:S280, 1989.
13. del Zoppo GJ, Copeland BR, Anderchek KA, Hacke W, Koziol J: Hemorrhagic transformation following tissue plasminogen activator in experimental cerebral infarction. *Stroke* 21:596-601, 1990.
14. Wilson NW, Copeland BR, Bastian JF: Posttraumatic meningitis in adolescents and children. *Pediatric Neurosurgery* 16:17-20, 1990.

15. del Zoppo GJ, Schmid-Schonbein G, Copeland BR, Mori E, Chang C-M: Polymorphonuclear leukocytes occlude capillaries following middle cerebral artery occlusion and reperfusion in baboons. *Stroke* 22:1276-1283, 1991.
16. del Zoppo GJ, Anderchek KA, Koziol JA, Copeland BR, Hacke W: Intracerebral hemorrhage and infarction volume following recombinant tissue plasminogen activator (t-PA) in an acute stroke model: Thrombolytic Therapy. Springer-Verlag, Heidelberg, pp 259-265, 1991.
17. Ken JG, Sobel DF, Copeland BR, Davis J, Kortman KE: Choroid plexus papillomas of the foramen of luschka: MR appearance. *Am J Neuroradiol* 12:1201-1203, 1991.
18. del Zoppo GJ, Yu JQ, Copeland BR, Thomas WS, Schneiderman J, Morrissey JH: Tissue factor localization in nonhuman primate cerebral tissue. *Thromb Haemost* 68(6):642-647, 1992.
19. Mori E, del Zoppo GJ, Chambers D, Copeland BR, Arfors K: Inhibition of polymorphonuclear leukocyte adherence suppresses no reflow after focal cerebral ischemia. *Stroke* 23:712-718, 1992.
20. del Zoppo GJ, Mori E, Chamber JD, Copeland BR, Arfors K-E: Inhibition of polymorph nuclearleukocyte adherence by IB4 enhances reflow after focal cerebral ischemia. *Stroke* 23:152, 1992.
21. Thomas WS, Mori E, Copeland BR, Yu JQ, Morrissey JH, del Zoppo GJ: Tissue factor contributes to microvascular defects after focal cerebral ischemia. *Stroke* 24:847-853, 1993.
22. Gallen CC, Sobel DF, Waltz T, Aung M, Copeland B, Schwartz BJ, Hirschhoff EC, Bloom FE: Noninvasive presurgical mapping of somatosensory cortex. *Neurosurgery* 33:260-268, 1993.
23. Sobel DF, Gallen CC, Schwartz BJ, Waltz T, Copeland B, Yamada S, Hirschhoff EC, Bloom FE: Locating the central sulcus: Comparison of MR anatomic and magnetoencephalographic functional methods. *AM J Neuroradiol* 14:915-925, 1993.
24. Saven A, Kawasaki H, Carrera CJ, Waltz T, Copeland B, Zyroff J, Kosty M, Carson DA, Beutler E, Piro LD: 2-Chlorodeoxyadenosine-dose escalation in nonhematologic malignancies. *J Clin Oncol* II (4): 671-678, 1993.
25. Gallen CC, Sobel DF, Schwartz B, Copeland B, Waltz T, Aung M: Magnetic source imaging. Present and future. *Invest Radiol* 28(Suppl 3):S153-S157, 1993.
26. Okada Y, Copeland BR, Mori E, Tung M-M, Thomas WS, del Zoppo GJ: P-selectin and intercellular adhesion molecule-1 expression after focal brain ischemia and reperfusion. *Stroke* 25:202-211, 1994.

27. Okada Y, Copeland BR, Fitridge R, Koziol JA, del Zoppo GJ: Fibrin contributes to microvascular destructions and parenchyma changes during early focal cerebral ischemia and reperfusion. *Stroke* 25:1847-1853, 1994.
28. Ember JA, del Zoppo GJ, Mori E, Thomas WS, Copeland BR, Hugli TE: Polymorphonuclear leukocyte behavior in a nonhuman primate focal cerebral ischemic model. *J Cereb Blood Flow Metab* 14:1046-1054, 1994.
29. Gallen CC, Schwartz BJ, Buchholz RD, Malik G, Barkely GL, Smith J, Tung H, Copeland B, Bruno L, Assam S, Hirschkoff E, Bloom F: Presurgical localization of functional cortex using magnetic source imaging. *J. Neurosurg* 82(6):988-994, 1995.
30. Mori E, Copeland BR, Thomas WS, Koziol JA, del Zoppo GJ: Effect of tirilazad mesylate on middle cerebral artery occlusion/reperfusion in nonhuman primates. *Cerebrovasc Dis* 5:342-349, 1995.
31. Maciunas RJ, Berger MS, Copeland B, Mayberg MR, Seiker R, Allen GS: A technique for interactive image-guided neurosurgical intervention in primary brain tumors. *Neurosurg Clin N Am*, April:245-266, 1996.
32. Sobel DF, Dalessio D, Copeland B, Schwartz B: Cerebral aneurysm thrombosis, shrinkage, and then disappearance after subarachnoid hemorrhage. *Surg Neurol* 45:133-137, 1996.
33. Okada Y, Copeland BR, Hamann GF, Koziol JA, Cheresch DR, del Zoppo GJ: Integrin Alpha-v Beta-3 is expressed in selected microvessels after focal cerebral ischemia. *Am J Pathol* 149:37-44, 1996.
34. Copeland B: Brain tumors. In: *Encyclopedia of Human Biology*, 2<sup>nd</sup> edition, Vol. 2, 255-260, 1997.
35. Tagaya M, Liu K-F, Copeland BR, Seiffert D, Engler R, Garcia, JH, del Zoppo GJ: DNA scission after focal brain ischemia temporal differences in two species: *Stroke*. 28:1245-1254, 1997.
36. Abumiya T, Lucero J, Heo JH, Tagaya M, Koziol JA, Copeland BR, del Zoppo GJ: Activated microvessels express vascular endothelial growth factor and integrin alpha-nu-beta during focal cerebral ischemia. *J Cereb Blood Flow Metab* 328:1245-1254, 1997.
37. del Zoppo G, Copeland B: It's time for a newsletter on thrombolytic therapy. *Thrombolysis Update* I (1):1-4, 1998.
38. Heo JH, Lucero J, Abumiya T, Koziol JA, Copeland BR and del Zoppo GJ: Matrix metalloproteinase's increase very early during experimental focal cerebral ischemia. *Journal of Cerebral Blood Flow & Metabolism* 19: 624-633, 1999.

39. Abumiya T, Lucero J, Heo J-H, Tagaya M., Koziol JA, Copeland BR, del Zoppo, GJ: Activated microvessels express vascular endothelial growth factor and integrin alpha3 during focal cerebral ischemia. *J. Cereb. Blood Flow Metab.* 19:1038, 1999.
40. Asahi M, Asahi K, Jung J-C, del Zoppo GJ, Fini ME, Lo EH: Role for matrix metalloproteinase 9 after focal cerebral ischemia: Effects of gene knockout and enzyme inhibition with BB-94. *J. Cereb. Blood Flow Metab.* 20:1681, 2000.
41. Tagaya M, Haring H-P, Stuiiver I, Wagner S., Copeland BR, Seiffert D, del Zoppo, GJ: Rapid loss of microvascular integrin expression during focal brain ischemia reflects neuron injury. *J Cereb Blood Flow Metab* 21: 835-846, 2001.
42. Hosomi N, Lucero J, Heo JH, Koziol JA, Copeland BR, del Zoppo GJ: Rapid differential endogenous plasminogen activator expression after acute middle cerebral artery occlusion. *Stroke* 32:1341, 2001.
43. Tagaya, M, Haring HP, Stuiiver I, Wagner S, Abumiya T, Lucero J, Lee P, Copeland BR, Seiffert D, del Zoppo GJ: Rapid loss of microvascular integrin expression during focal brain ischemia reflects neuron injury. *J. Cereb. Blood Flow Metab.* 21:835, 2001.

## PRESENTATIONS

1. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Harker LA: Thrombolytic therapy in a baboon model of acute stroke. Presented: Xth International Congress on Thrombosis and Hemostasis, San Diego, CA, July 1985.
2. del Zoppo GJ, Copeland BR, Waltz TA, Zyroff J, Hanson SR, Harker LA: Thrombosis in a baboon model of acute stroke. Presented: Xth International Congress on Thrombosis and Hemostasis, San Diego, CA, July 1985.
3. del Zoppo GJ, Copeland BR, Hacke W, Dietrich JE, Harker LA: Intracerebral hemorrhage following t-PA in infusion in a primate stroke model. Presented: XIIIth International Joint Conference on Stroke and Cerebral Circulation, AHA, San Diego, CA, *Stroke* 19:134(21), 1988.
4. Gallen CC, Aung MA, Waltz TA, Copeland BR, Schwartz BJ: Rapid noninvasive presurgical neuromagnetic mapping of somatosensory cortex. Presented: Western EEG Society, February 13, 1992.
5. Gallen CC, Schwartz BJ, Waltz TA, Copeland BR, Sobel DS, Aung MA, Bloom FA: Magnetic source imaging (MSI): Direct intraoperative verification of neuromagnetic localizations of somatosensory evoked and slow wave fields using a large array biomagnetometer. Presented: Society for Neuroscience, April 30, 1992.

6. del Zoppo GJ, Abumiya T, Copeland BR, Hamann GF, Heo JH, Hosomi N, Lucero J, Okada Y, Tagaya M, Wagner S: Micro vascular integrin-matrix responses to focal cerebral ischemia are rapid and reflect neuron injury. Presented: Keio University, Japan, September 1, 1999.
7. Copeland BR, Mehta R, Kotecha R, Vedula R, Langrill L: Dose Rate and Efficacy in Gamma Knife Radio surgery for Trigeminal Neuralgia. Presented: Leksell Gamma Knife Society, Seoul, South Korea, May 22, 2006.
8. Copeland BR, Kotecha R: Factors influencing outcome and complications in Gamma Knife treatment of trigeminal neuralgia. Presented: Leksell Gamma Knife Society, Quebec, Canada, May 2008.
9. Copeland BR, Mehta R, Ouillette D: Factors influencing outcome and complications in 158 classic trigeminal neuralgia patients undergoing first time treatment with gamma knife radiosurgery. Presented: Scientific Committee of the 14<sup>th</sup> International Gamma Knife Society, Quebec City, Canada, May 18-22, 2008.

### **Editorial Comment**

1. Copeland BR, Waltz TA: Glycerol injections [Letter to the Editor]. N Eng J Med 316:693, 1986.
2. Copeland BR, del Zoppo GJ: Early reperfusion in the anesthetized baboon reduces brain damage following middle cerebral artery occlusion: Quantitative analysis of infarction volume. Stroke 28:637-638, 1997.
3. Copeland BR: Surgical versus Nonsurgical Treatment for Back Pain. [Letter to the Editor]. N Eng J Med 357:1255, 2007.