

# William Woodrow Sutherling

## Curriculum Vitae

OFFICE ADDRESS: Epilepsy and Brain Mapping Center  
10 Congress St., Suite 505  
Pasadena, CA 91105

Office Phone #: (626)-792-7300  
FAX #: (626)-792-7336

### EDUCATION

1968 B.S. Georgetown University, Washington, D.C.  
1968-1969 Military. U.S. Navy Supply Corps School, Athens, GA  
1976 M.D. University of Virginia Medical School, Charlottesville, Virginia  
1976-77 Internship. Internal Medicine - George Washington University  
Medical Center, Washington, D.C.  
1977-80 Residency. Neurology - University of Virginia Medical Center,  
Charlottesville, Virginia  
1980-81 Fellowship. Electroencephalography - Mayo Clinic, Rochester, Minnesota  
1981-82 Fellowship. Epilepsy - Reed Neurological Research Center,  
University of California, Los Angeles, California  
1983-1988 Teacher Investigator Development Award. Nat Inst Neurol Dis Stroke, NIH

### POSITIONS

#### *PRESENT:*

1997 - present Director, Epilepsy Brain Mapping Monitoring Unit, Huntington Hospital, Pasadena  
1997 - present Medical Director, Epilepsy and Brain Mapping Program, NAEC Level 4  
Comprehensive Epilepsy Center, Pasadena, Affiliated Huntington Hosp, CalTech  
2011 - present Ad hoc Member Neuro A Study Section  
1989 - present Member, Brain Research Institute, UCLA

#### *PAST:*

2001 - 2010 Member BDCN1 Study Section, National Institutes of Health  
2000 - 2008 Visiting Assistant Professor, Department of Physics and Astronomy, University of  
New Mexico, Albuquerque, New Mexico  
1997 - 2008 Director, Neuromagnetism Laboratory, Huntington Medical Research Institutes,  
affiliated with California Institute of Technology, Pasadena  
1992 - 1996 Medical Director, Epilepsy and Brain Mapping Program,  
Good Samaritan Hospital, Los Angeles  
1992 - 1996 Medical Director, Neuromagnetism laboratory, Neurosciences Institute,  
Good Samaritan Hospital, Los Angeles  
1992 - 1996 Medical Director, Telemetry Unit, Good Samaritan Hospital, Los Angeles  
1989-1999 Member, Neurology A Study Section, National Institutes of Health  
1989-92 Associate Professor of Neurology in Residence, Reed Neurol Res. Center, UCLA  
1986-2006 Principal Investigator, RO1 NS20806 "Magnetoencephalography in Epilepsy  
1985-92 Director, Adult and Pediatric Epilepsy Subdural Grid Program, UCLA  
1984-92 Director, Neuromagnetism Laboratory, UCLA School of Medicine  
1981-89 Assistant Professor of Neurology in Residence, Reed Neurol Res. Center, UCLA

### BOARD CERTIFICATION AND LICENSURE

National Boards in Medicine - Parts I, II, and III, 1976  
Diplomate, American Board of Clinical Neurophysiology (formerly ABQEEG), December 1981  
Diplomate, American Board of Psychiatry & Neurology, Adult Neurology, April 1982, #23523  
Diplomate, American Board of Psychiatry & Neurology, added Qualifications in Clinical  
Neurophysiology, 1994, #0460; Recertified August 26, 2004. Maint Cert passed May 8, 2015.  
Diplomate, American Board of Psychiatry & Neurology, added Qualifications in Epilepsy, 2013, #0435.  
Industrial Medical Council, State of California, 1992, #090523  
California: Medical License #G45896; DEA #AS1221059; Minnesota 1981; Virginia 1977-81  
Qualified Medical Evaluator, Department of Industrial Relations, Industrial Medical Council,  
State of California, #907680 and #006104

**DISTINCTIONS**

Teacher-Investigator Development Award, NINCDS, 1983-88  
Alpha Omega Alpha Medical Honor Society, 1974-pres  
Merritt-Putnam Award, Epilepsy Foundation of America, 1982-83  
Faculty Clinical Teaching Award, Department of Neurology, UCLA, 1983  
Distinguished Service Medal, Pacific Campaign, U.S. Navy, 1969-71

**SOCIETIES**

American Academy of Neurology, Fellow  
American Epilepsy Society, Fellow  
American Electroencephalographic Society, Fellow  
American Medical Association  
California Medical Association  
Los Angeles County Medical Association  
American Association for the Advancement of Science  
New York Academy of Sciences (past)  
Society for Neuroscience (past)  
American Association of Electrodiagnostic Medicine (past)  
American Society for Neurological Investigation (past)  
American Society of Neuroimaging (past)

**MILITARY SERVICE**

Lieutenant, Supply Corps, U.S. Navy, 1968-1971; Disbursing Officer and Ship's Store Officer, U.S.S. William H. Standley (DLG-32); Pacific Campaign, 1969-71

**ADMINISTRATIVE SERVICE**

Section Head, Neurology, Department of Medicine, Huntington Hospital, 2011-2014  
Ex officio Member, Medicine Department Committee, 2011-present.  
Board Member, National Association of Epilepsy Centers 2010-2014  
Board Member, Institutional Review Board, Huntington Hospital, 2000-2011  
Epilepsy Foundation America of LA, Orange C, San Bernadino, Ventura, Boards, 1999-present  
Brain Mapping Assessment Panel, American Academy of Neurology, 1990, 1997  
American Board of Qualification Clinical Neurophysiology, Associate Examiner, 1982-1990  
MEG Assessment Panel, Facilitator, American Academy of Neurology, 1990  
MEG Subcommittee, Chairman, American Society of Clinical Neurophysiology, 1990-92  
Brain Mapping Assessment Panel, American Society of Clinical Neurophysiology, 1990  
Department of Neurology, UCLA School of Medicine 1981-1992  
Member, Residency Training Committee  
Secretary-Treasurer, Neurology Group Executive Committee  
Member, Academic Senate Legislative Assembly  
Societies  
Committee on Board Certification, American Board Qualification in Clinical Neurophysiology  
Council, American EEG Society  
Practice Committee, American Epilepsy Society  
Membership Committee, American Epilepsy Society  
Committee on Mapping of Evoked Potential Fields and Generators,  
International Federation of Societies of Electroencephalography and Clinical Neurophysiology

**TEACHING**

Electroencephalography and Clinical Neurophysiology, UCLA, 1981-1992  
Functional Anatomy Human Cortex cortical stimulations evoked fields, UCLA 1985-1992  
Clinical Neurology Medical Students, UCLA, 1981-1992  
**Graduate Student:** Warren Merrifield, PhD, Physiological Psychology, Univ of Loma Linda  
**Graduate Student:** Massoud Akhtari, PhD. Condensed Matter Physics, Univ New Mex, 9/1/2001  
**Graduate Student:** Steve Taylor, PhD. Electrical Engineering, Drexel Univ, June 1997  
**Post doctoral Fellow:** Christoph Baumgartner, MD, MS., Neuromag lab, UCLA, 1987-1989  
**Post doctoral Fellow:** Nobukazu Nakasato, MD, PhD, Neuromag lab, UCLA, 1988-1990  
**Graduate Student:** Daniel Barth, PhD. Physiological Psychol, Neuromag lab, UCLA, June 1984  
**Epilepsy Fellow:** Tatiana Maleeva, MD (combined EBMP-USC program) 2000-2001  
**Epilepsy Fellow:** Yafa Minazad, DO (combined EBMP-USC program) 2001-2002

**RESEARCH SUPPORT**

Merritt-Putman Award, "Focal Evoked Potentials in Temporal Lobe Epilepsy", W. Sutherland, Principal Investigator, 50%, Epilepsy Foundation of America  
July 1, 1982 - June 30, 1983

Teacher-Investigator Development Award, NINCDS, NS00678, "Magnetoencephalography and Evoked Potentials in Epilepsy", W. Sutherland, Principal Investigator, 100%  
July 1, 1983 - June 30, 1988

NINCDS, NS20806, "Magnetoencephalography in Epilepsy", W. Sutherland, Principal Investigator, 50%  
July 1, 1984 - June 30, 1986

Small Business Innovation Research Program, NINCDS, NS20049, "Improved Sensitivity Neuromagnetometer", Duane Crum, Principal Investigator; W. Sutherland, Advisor  
April, 1984 - March, 1986

NINCDS, NS15654, "Neuroscience Research Using Emission Tomography", Michael Phelps, Principal Investigator; Functional Anatomy subproject, W. Sutherland, 2%  
1988 - 1991

General Electric Company, "MEG Development", W. Sutherland, Principal Investigator  
July 1, 1986 - June 30, 1989

UCLA/Neuropsychiatric Institute Biomedical Research Study Grant, "T-Complex in Epilepsy", W. Sutherland, Principal Investigator, 25%  
July 1, 1982 - June 30, 1983

Research Society for Parkinson's Disease and Movement Disorders, "Magnetic analysis of cerebral current propagation patterns", W. Sutherland, Principal Investigator, 5%  
February 1, 1984 - January 31, 1986

Grass Foundation Equipment Grant, "Magnetoencephalography in Epilepsy", W. Sutherland, Principal Investigator April 30, 1984 - April 29, 1985

UCLA Academic Senate Research Grant, "Magnetoencephalogram in Epilepsy", W. Sutherland, Principal Investigator  
October 2, 1984 - April 1, 1985

NINCDS, NS20806, "Magnetoencephalography in Epilepsy", W. Sutherland, Principal Investigator, 50%  
July 1, 1986 - June 30, 1988

Research Society for Parkinson's Disease and Movement Disorders, "Multichannel Analysis of Magnetic Field and Electric Potential Field Extracranially", W. Sutherland, Principal Investigator, 5%  
February 1, 1985 - January 31, 1986

UCLA Academic Senate Research Grant, "Magnetoencephalography in Epilepsy and Cortical Localization", W. Sutherland, Principal Investigator Dec 16, 1986 - June 30, 1987

NINCDS, NS20806, "Magnetoencephalography in Epilepsy", W. Sutherland, Principal Investigator, 70%  
July 1, 1988 - June 30, 1991

NINCDS, NS20707, "Measures of Vocal Dysfunction in Neurological Disorders", D. Hanson, Principal Investigator; W. Sutherland, Neurology Advisor, 15%  
April 1, 1988 - March 30, 1990

UCLA Academic Senate Research support, "Functional Anatomy of Human Sensorimotor Cortex", W. Sutherling, Principal Investigator  
September 3, 1988 - June 30, 1989

UCLA/Neuropsychiatric Institute Biomedical Research Study Grant, "Functional Anatomy of Sensorimotor and Speech Cortex in Humans" W. Sutherling, Principal Investigator  
October 1, 1988 - September 30, 1989

NINDS NS20806, "Magnetoencephalography in Epilepsy", W. Sutherling, Principal Investigator, 70%  
July 1, 1991 - June 30, 1994

UCLA Academic Senate Research Grant, "Localization and quantification of Cortical Representation of Human digits", W. Sutherling, Principal Investigator  
July 1, 1991 - June 30, 1992

General Electric Company, "Realistic model of the human head for localization of pathological brain function using physical analysis of magnetic and electric data", W. Sutherling, Principal Investigator  
Dec 15, 1991 - Dec 14, 1993

NIH NINDS NS20806, "Magnetoencephalogram in Epilepsy," W. Sutherling,  
Principal Investigator, 50% April 1, 1995 - March 31, 1998

Lincey Foundation 1996

Huntington Memorial Hospital Research Grant

NIH, National Center For Research Resources 1-S10-RR13276, "80 Channel Whole Head SQUID Neuromagnetometer," W. Sutherling, Principal Investigator, September 8, 1997

The Zielstra Foundation grant "MEG recording of human focal epileptic seizures"  
W. Sutherling, PI, June 1, 2001 – May 31, 2002

NIH RO1 NS20806-16 Magnetoencephalogram in Epilepsy.  
W. Sutherling, PI, April 1, 2002 – Mar 30, 2006

Bacon Foundation MEG grant "Simultaneous recording from ECoG and MEG"  
W. Sutherling, PI, February 1, 2002 – January 31, 2003

Zeilstra Foundation grant for MEG. W. Sutherling, PI, May 1, 2002-April 30, 2003.

NIH. Neuroimaging. PO1. A Toga, PI, UCLA, collaborator.

NIH. Modeling EEG with multipolar sources. R01. Richard Leahy, PI, USC, collaborator.

Research grant support, 7/1/82-3/31/06

## BIBLIOGRAPHY

### RESEARCH PAPERS

1. Brickley JJ, **Sutherling** WW, Messenheimer JA, Lee SI, Johnson RM. A multivariate evoked potential measure applied to human epilepsy. *Neurosci Ltrs* 1980;18:353-360.
2. Barth D, **Sutherling** WW, Engel J, Beatty J. Neuromagnetic localization of epileptiform spike activity in the human brain. *Science* 1982;218:891-894.
3. Barth DS, **Sutherling** WW, Engel J, Beatty J. Neuromagnetic evidence of spatially distributed sources underlying epileptiform spikes in the human brain. *Science* 1984;223:293-296.
4. **Sutherling** WW, Nuwer MR, Cahan LD, Crandall PH, Engel J. The T-complex before and after temporal lobectomy. *Adv Epileptol* 1984;15:475-481.
5. Barth DS, **Sutherling** WW, Beatty J. Fast and slow magnetic phenomena in focal epileptic seizures. *Science* 1984;226:855-857.
6. Barth, DS, **Sutherling** WW, Engel J, Beatty J. Neuromagnetic localization of single and multiple sources underlying epileptiform spikes in human brain. *Adv Epileptol* 1984;15:379-384.
7. Cahan LD, **Sutherling** WW, McCullough MA, Rausch R, Engel J, Crandall PH. Review of the 20-year UCLA experience with surgery for epilepsy. *Cleveland Clin Q* 1984;51:313-318.
8. Engel J, **Sutherling** WW, Cahan L, Crandall PH, Kuhl DE, Phelps ME. The role of positron emission tomography in the surgical therapy of epilepsy. *Adv Epileptol* 1984;15:427-432.
9. Nuwer MR, Engel J Jr, **Sutherling** WW, Babb TL. Monitoring at the University of California, Los Angeles. *Electroenceph clin Neurophysiol* 1985;37(S):385-401.
10. Barth DS, **Sutherling** WW, Broffman J, Beatty J. Magnetic localization of a dipolar current source implanted in a sphere and a human cranium. *Electroenceph clin Neurophysiol* 1986;63:260-273.
11. Barth DS, **Sutherling** WW, Beatty J. Intracellular currents of interictal penicillin spikes: Evidence from neuromagnetic mapping. *Brain Research* 1986;368:36-48.
12. **Sutherling** WW, Crandall PH, Engel J, Darcey TM, Cahan LD, Barth DS. The magnetic field of complex partial seizures agrees with intracranial localizations. *Ann Neurol* 1987;21:548-558.
13. **Sutherling** W, Barth D. Selective EEG electrode triggering of averaged magnetic data reduces the constraints of the inverse problem of neuromagnetic localization: a principle of relativity in the nervous system due to finite conduction delays. *Physics Medicine Biology* 1987;32:143-144.
14. Barth DS, **Sutherling** W. Current source-density and neuromagnetic analysis of the direct cortical response in rat cortex. *Brain Research* 1988;450:280-294.

15. **Sutherling** W, Crandall LD, Cahan LD, Barth DS. The magnetic field of epileptic spikes agrees with intracranial localizations in complex partial epilepsy. *Neurology* 1988;38:778-786.
16. **Sutherling** W, Crandall P, Darcey T, Becker D, Levesque M, Barth D. The magnetic and electric fields agree with intracranial localizations of somatosensory cortex. *Neurology* 1988;38:1705-1714.
17. **Sutherling** WW, Barth DS. Neocortical propagation in temporal spike foci on MEG and EEG. *Ann Neurol* 1989;25:373-381.
18. Barth DS., Baumgartner C, **Sutherling** WW. Neuromagnetic field modeling of multiple brain regions producing interictal spikes in human epilepsy. *Electroenceph clin Neurophysiol* 1989;73:389-402.
19. Baumgartner C, **Sutherling**, WW, Di, S, Barth, DS. Investigation of multiple simultaneously active brain sources in the electroencephalogram. *J Neurosci Meth* 1989;30:175-184.
20. **Sutherling** WW, Risinger MW, Crandall PH, Becker DP, Baumgartner C, Cahan LD, Wilson C, Levesque MF. Focal functional anatomy of dorsolateral fronto-central seizures. *Neurology* 1990;40:87-98.
21. Engel J, Henry TR, Risinger MW, Mazziotta JC, **Sutherling** WW, Levesque MF, Phelps ME. Presurgical evaluation for partial epilepsy: Relative contributions of chronic depth-electrode recordings versus FDG-PET and scalp-sphenoidal ictal EEG. *Neurology* 1990;40:1670-1677.
22. **Sutherling** WW, Barth DS. Magnetoencephalography in Clinical Epilepsy Studies: The UCLA experience. *Advances in Neurology* 1990;54:231-245. (Reprinted in Sato S, ed. *Magnetoencephalography*. New York: Raven Press, 1990).
23. Barth DS, **Sutherling**, WW. Neuromagnetic studies of evoked and spontaneous activity in animals. *Advances in Neurology* 1990;54:119-131. (Reprinted in Sato S, ed. *Magnetoencephalography*. New York: Raven Press, 1990).
24. Baumgartner C, Barth, DS, Levesque M, **Sutherling** WW. Functional anatomy of human hand sensorimotor cortex from spatiotemporal analysis of electrocorticography. *Electroenceph clin Neurophysiol* 1991;78:56-65.
25. Baumgartner C, **Sutherling** WW, Di, S, Barth, DS. Spatiotemporal modeling of cerebral evoked magnetic fields to median nerve stimulation. *Electroenceph clin Neurophysiol* 1991;79:27-35.
26. Henry TR, **Sutherling** WW, Engel J Jr, Risinger MW, Levesque MF, Mazziotta JC, Phelps ME. Interictal cerebral metabolism in partial epilepsies of neocortical origin. *Epilepsy Res* 1991;10:174-182.
27. **Sutherling** WW, Levesque MF, Crandall PH, Barth DS. Localization of partial epilepsy using magnetic and electric measurements. *Epilepsia* 1991;32(5):29-40.
28. Baumgartner C, Barth, DS, Levesque M, **Sutherling** WW. Human hand and lip sensorimotor cortex as studied on electrocorticography. *Electroenceph clin Neurophysiol* 1992;84:115-126.

29. **Sutherling** WW, Levesque M, Baumgartner C. Cortical sensory representation of the human hand: Size of finger regions and non-overlapping digit somatotopy. *Neurology* 1992;42:1020-1028.
30. Baumgartner C, Doppelbauer A, **Sutherling** WW, Zeitlhofer J, Lindinger G, Lind C, Deecke L. Human somatosensory cortical finger representation as studied by combined neuromagnetic and neuroelectric measurements. *Neurosci Ltrs* 1991;134:103-108.
31. Baumgartner C, Doppelbauer A, Deecke L, Barth DS, Zeitlhofer J, Lindinger G, **Sutherling** WW. Neuromagnetic investigation of somatotopy of human hand somatosensory cortex. *Exp Brain Res* 1991;87:641-648.
32. Baumgartner C, Doppelbauer A, **Sutherling** WW, Lindinger G, Levesque MF, Aull S, Zeitlhofer J, Deecke L. Somatotopy of human hand somatosensory cortex as studied in scalp AD. *Electroenceph clin Neurophysiol* 1993;88:271-9.
33. Clark, GT, Kuboki, T, Akhtari, M and **Sutherling**, WW. A Removable Dental Device for 3-D Co-Registration of MEG based Cortical Activity and MRI based Brain Anatomy 1993;
34. Roper SN, Levesque MF, **Sutherling** WW, Engel J Jr. Surgical treatment of partial epilepsy arising from the insular. *J Neurosurg* 1993;79:266-9.
35. Levesque MF, **Sutherling** WW, Crandall PH. Surgery of central sensory motor and dorsolateral frontal lobe. *Stereotact Funct Neurosurg* 1992;58:168-71.
36. Gharib, S., **Sutherling**, WW, Nakasato, N, Barth, DS, Baumgartner, C., Alexopoulos, N., Taylor, S., Rogers, RL. MEG versus ECoG localization accuracy test. *Electroenceph Clin Neurophysiol* 1995;94:109-114.
37. Akhtari, M., McNay, D., Mandelkern, M., Teeter, B., Cline, H.E., Mallick, J., Clark, G., Tatar, R., Lufkin, R., Chan, K., Rogers, R.L., **Sutherling**, W.W. Somatosensory evoked response source localization using actual cortical surface as the spatial constraint. *Brain Topography*. 1994, 7: 63-69.
38. Nakasato N., Levesque MF, Barth DS, Baumgartner C, Rogers RL, **Sutherling** WW. Comparisons of MEG, EEG, and ECoG Source Localization in neocortical partial epilepsy in humans. *Electroenceph Clin Neurophysiol* 91 (1994) 171-178.
39. Vickrey BG, Hays RD, Rausch R, **Sutherling** WW, Engel J Jr, Brook RH. Quality of Life of Epilepsy Surgery patients as compared with outpatients with hypertension, diabetes, heart disease, and/or depressive symptoms. *Epilepsia* 1994;35:597-607.
40. McNay D, Michielssen E, Akhtari M, Rogers RL, **Sutherling** WW. Multiple source localization using genetic algorithms. *J Neurosci Meth* 1996;64:163-172.
41. **Sutherling**, WW, Levesque, MF. Electrical Stimulation of the Supplementary Sensorimotor Area. *Advances in Neurology* 1996;70:211-215. (Reprinted in Hans O. Lueders (Ed.) *Supplementary Motor Area*. Philadelphia:Lippincott-Raven, 1996)
42. Seymour KJ, Bluml S, Sutherling J, **Sutherling** W, Ross BD. Identification of Cerebral Acetone by <sup>1</sup>H-MRS in Patients with Seizures Controlled by Ketogenic Diet. *Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA)* 1999;6:1-3.

43. Akhtari M, Bryant H, Mamelak A, Heller L, Shih J, Mandelkern M, **Sutherling W**. Conductivities of three-layer human skull. *Brain Topography* 2000;13(Fall):1-4.
44. **Sutherling W**, Akhtari M, Mamelak AN, Mosher J, Arthur D, Sands S, Weiss P, Lopez N, DiMauro M, Flynn E, Leahy R. Dipole localization of human induced focal afterdischarge seizure in simultaneous magnetoencephalography and electrocorticography. *Brain Topography* 2001;14:101-116.
45. Akhtari M, Bryant H, Mamelak A, Heller L, Shih J, Mandelkern M, Matlachov A, Ranken D, Best E, Lee R, **Sutherling W**. Conductivities of three-layer live human skull. *Brain Topography* 2002;14(3):151-167.
46. Shattuck DW, **Sutherling W**, Leahy RM. Improved cortical MRI segmentation of brains with intracranial grid electrodes. *NeuroImage* 2001;13(6):S244.
47. Mamelak AN, Lopez N, Akhtari M, **Sutherling W**. Magnetoencephalography-directed surgery in patients with neocortical epilepsy. *Journal of Neurosurgery* 2002;97:865-873.
48. Akhtari M, Bryant HC, Emin D, Merrifield W, Mamelak AN, Flynn ER, Shih JJ, Mandelkern M, Matlachov A, Ranken DM, Best ED, DiMauro MA, Lee RR, **Sutherling WW**. A model for frequency dependence of conductivities of the live human skull. *Brain Topography* 2003;16(1):39-55.
49. Ossadtchi A, Mosher J, Thyerlei D, **Sutherling W**, Leahy R. Automated interictal spike detection and source localization in MEG using ICA and spatio-temporal clustering. *Clinical Neurophysiology* 2004;115(3):508-522.
50. Pantazis D, Merrifield W, Darvas F, **Sutherling W**, Leahy RM. Identification of the language dominant hemisphere using MEG cortical imaging and permutation tests. *Neuroimage*. 2005;
51. Rizzuto DS, Mamelak AN, **Sutherling WW**, Fineman I, Andersen RA. Spatial selectivity in human ventrolateral prefrontal cortex. *Nature Neuroscience* 2005;8(4):415-417.
52. A. Ossadtchi, J.C. Mosher, **W. Sutherling**, R. E. Greenblatt, R.M. Leahy, "Hidden Markov modeling of spike propagation from interictal MEG data," *Physics and Medicine in Biology* 2005; 50: 3447-3469.
53. Merrifield W, **Sutherling WW**, Mamelak AN. Statistical parameters of epileptiform brain activity differentiate frontal and temporal lobe patients. *Epilepsy Res.* 2007 Apr;74(1):74-8. Epub 2007 Mar 1.
54. Merrifield WS, Simos PG, Papanicolaou AC, Philpott LM, **Sutherling WW**. Hemispheric language dominance in magnetoencephalography: Sensitivity, specificity and data reduction techniques. *Epilepsy Behav.* 2007 Feb;10(1):120-8. Epub 2006 Dec 12.
55. **Sutherling WW**, Mamelak AM, Thyerlei D, Maleeva T, Minazad Y, Philpott L, Lopez N. Prospective, observational case-series of influence of MSI on intracranial EEG plans in epilepsy. *Neurology* 2008 Sep;71:990-996.
56. Rutishauser U, Tudusciuc O, Neumann D, Mamelak AN, Heller AC, Ross IB, Philpott L, **Sutherling WW**, Adolphs R. Single-unit responses selective for whole faces in the human amygdala. *Curr Biol.* 2011 Oct 11;21(19):1654-60.



**CASE REPORTS, REVIEWS AND BOOK CHAPTERS**

1. **Sutherland** WW, Hershman LM, Miller JQ, Lee SI. Seizures induced by playing music. *Neurology* 1980;30:1001-1004.
2. Lee SI, **Sutherland** WW, Persing JA, Butler AB. Language-induced seizure; A case of cortical origin. *Arch Neurol* 1980;37:433-436.
3. Kleinman G, **Sutherland** WW, Martinez M, Tabsh K. Malfunction of ventriculo-peritoneal shunts during pregnancy. *Obst Gynec* 1983;6:753-755.
4. Crandall PH, Cahan CD, **Sutherland** WW, Engel J Jr, Rausch R. Surgery for intractable complex partial epilepsy. In: Porter RJ, Morselli PL, eds. *The Epilepsies*, Ch 15. London: Butterworth & Co, 1985:307-321.
5. **Sutherland** WW. Identifying and referring patients for surgery. *J clin Ther* 1985;7:266-271.
6. Beatty J, Barth DS, **Sutherland** WW. Magnetically localizing the sources of epileptic discharges within the human brain. *Naval Res Rev* 1985;4:1-10.
7. Beatty J, Barth DS, **Sutherland** WW. Neuromagnetic localization of intracranial current sources in the epilepsies: introduction. In: Weinberg H, Stroink S, Katila T, eds. *Biomagnetism: Applications and Theory*. New York: Pergamon Press, 1985:235-236.
8. Barth DS, **Sutherland** WW, Beatty J. Animal neuromagnetometry and its specific applications to the study of focal epileptic phenomena. In: Weinberg H, Stroink S, Katila T, eds. *Biomagnetism: Applications and Theory*, New York: Pergamon Press, 1985:237-247.
9. **Sutherland** WW, Barth DS, Beatty J. Magnetic fields of epileptic spike foci: equivalent localization and propagation. In: Weinberg H, Stroink S, Katila T, eds. *Biomagnetism: Applications and Theory*, New York: Pergamon Press, 1985:249-260.
10. Crandall PH, **Sutherland** WW. Tactical Considerations Leading to Surgical Treatment of the Partial Epilepsies. In: Dichter M, ed. *Mechanisms of Epileptogenesis: Transition from Interictal to Ictal Activity*. Plenum Press, 1991 (in press).
11. **Sutherland** W, Crandall P, Levesque M, Darcey T, Barth D. Physical interpretation of the frontal lobe seizure: The dipole approximation and sensorimotor cortex. In: Chauvel P, Delgado-Escueta A, Halgren E, Bancaud J, eds. *Frontal Lobe Seizures & Epilepsies*. New York: Raven Press, 1991;339-347.
12. **Sutherland** WW, Levesque MF, Crandall PH, Barth DS. A complete physical description of the dynamic electric currents of human partial epilepsy and essential cortex using MEG, EEG, chronic ECoG grid recordings, and direct cortical stimulations. In: Lüders H, ed. *Epilepsy Surgery*. New York: Raven Press, 1992;429-450.
13. **Sutherland** WW, Levesque MF, Peacock W, Shields D, Shewmon A. Presurgical Evaluation: Los Angeles, California, Epilepsy Surgery Program, UCLA. In: Lüders H, ed. *Epilepsy Surgery*. New York: Raven Press, 1992; 792-795.
14. Ojemann G, **Sutherland** W, Lesser R, Dinner D, Jayakar P, Saint Hilaire J-M. Cortical stimulations. In: Engel J, ed. *Surgical Treatment of the Epilepsies*. New York: Raven Press, 1992; 399-414.

15. Lesser R, Awad I, Goldring S, **Sutherling W**, Resnick T. Technique and interpretation of subdural grid electrodes. In: Engel J, ed. *Surgical Treatment of the Epilepsies*. New York: Raven Press, 1992; 377-386.
16. Engel J Jr; Henry TR; Risinger MW; **Sutherling WW**; Chugani HT. PET in relation to intracranial electrode evaluations. *Epilepsy Res Suppl* 1992;5:111-20.
17. Engel J, Levesque M, Crandall PH, Shewmon DA, Rausch R, **Sutherling W**. The Epilepsies. In RG Grossman (Ed.) *Principles of Neurosurgery*. Raven Press, New York. 1991:319-358.
18. Akhtari M, McNay D, Levesque M, Rogers R, Brown C, Mandelkern M, **Sutherling W**. Evaluation of source localization models for somatosensory evoked MEG with PET verification. In: Aine C, Okada, Y, Stroink, G, Swithenby, SJ, Wood, CC, editor. *Biomag96: Proceedings of the Tenth International Conference on Biomagnetism*. New York: Springer-Verlag; 2000. p. 1122-1125.
19. Taylor S, Rogers R, McNay D, Levesque M, Akhtari M, **Sutherling W**. Optimization of conductivity and permeability parameters for brain, CSF, skull and scalp, using implanted sources in the human cranium. In: Aine C, Okada, Y, Stroink, G, Swithenby, SJ, Wood, CC, editor. *Biomag96: Proceedings of the Tenth International Conference on Biomagnetism*. New York: Springer-Verlag; 2000. p. 358-360.
20. **Sutherling W**, Akhtari M, Mamelak A, Mosher J, Arthur D, Lopez N, Leahy R, Nichols J, Sarafian J, Merrifield W, Padilla R, Eto R, Flynn E. Neuromagnetism of clinical epilepsy. In Rho JM, Sankar R and JE Cavazos, eds. *Epilepsy: Scientific Foundations of Clinical Management*. Marcel Dekker: New York. 2002 (in press).
21. **Sutherling W**. "Parent to epilepsy expert about Diastat™". *Parents' Page, A periodic newsletter of the Parent & Family Network Program of the Epilepsy Foundation of Los Angeles, Orange, San Bernardino and Ventura Counties*. 2002;5:1-3.
22. **Sutherling W**. Magnetoencephalography in Epilepsy. In Kuzniecky and Jackson G (eds). *Magnetic Resonance in Epilepsy and Other NeuroImaging Techniques*. Elsevier, New York. 2004.
23. **Sutherling W**. Magnetoencephalography. In Aminoff MJ (ed). *Electrodiagnosis in Clinical Neurology*. 5<sup>th</sup> Edition. Elsevier: Churchill Livingstone, Philadelphia. 2005: 219-230.
24. Dyve S, Serensen L, Mamelak AN, **Sutherling WW**, Cascino GD. Neuroradiologic evaluation for epilepsy surgery. In Winn R (Ed) *Youman's Neurological Surgery*. 6<sup>th</sup> Edition. 2011. pp 55-1 to 55E2
25. Sindhu KK, **Sutherling WW**. Role of Lead in the Central Nervous System: Effect on Electroencephalography, Evoked Potentials, and Nerve Conduction. *The Neurodiagnostic Journal*. 2015;55(2):107-121.

**ABSTRACTS**

- Sutherling WW, Wilkinson EC, Brickley JJ, Sackellares JC, Johnson RN, Lee SI. Sodium valproate-induced changes of the VEP to paired flash stimuli in photosensitive epilepsy. *Electroenceph clin Neurophysiol* 1980;50:168.
- Hershman LM, Wilkinson EC, Sutherling WW, Lee SI. Specific and non-specific VEPs in normals and photosensitive epilepsy. *Electroenceph clin Neurophysiol* 50:157P, 1980.
- Faught E, Sutherling WW, Wilkerson EC, Lee SI. Effects of sodium valproate on visual evoked potentials to stimulus trains in patients with photosensitive epilepsy. *Epilepsia* 1980;21:185-186.
- Barth DS, Sutherling WW, Engel J, Beatty J. Neuromagnetic localization of interictal discharge in partial complex epilepsy. *Soc Neurosci* 1982;8:976(279.11).
- Sutherling WW, Barth DS, Engel J, Beatty J. Precise localization by neuromagnetic techniques (magnetoencephalography). Presented at the 35th Annual Meeting of the American Academy of Neurology, San Diego, 1983.
- Sutherling WW, Nuwer MR, Cahan LD, Crandall PH, Engel J. T-complex before and after temporal lobectomy. Presented at the 15th Epilepsy International Symposium, Washington, D.C., 1983.
- Sutherling WW, Barth DS, Engel J, Beatty J. The magnetoencephalogram (MEG): Description of procedure and detailed application to two patients with epilepsy. Presented at the 15th Epilepsy International Symposium, Washington, D.C., 1983.
- Barth DS, Sutherling WW, Beatty J, Engel J. Neuromagnetic localization of interictal discharge in partial complex epilepsy. *Neurosci Abstracts* 1982;8:976.
- Barth DS, Sutherling WW, Engel J, Beatty J. Paroxysmal artifacts in the magnetoencephalogram (caveats). Presented at the 15th Epilepsy International Symposium, Washington, D.C., 1983.
- Barth DS, Sutherling WW, Engel J, Beatty J. Magnetoencephalography (MEG) reveals multiple sources underlying the interictal spike in partial complex epilepsy. Presented at the 15th Epilepsy International Symposium, Washington, D.C., 1983.
- Barth DS, Sutherling WW, Engel J, Beatty J. Cortical spread patterns of the interictal spike complex in humans are revealed by magnetoencephalography (MEG). Presented at the Annual Meeting of Society for Neuroscience, Boston, 1983.
- Sutherling WW. Magnetoencephalography. *Bul clin Neurosc* 1985; 50:23.
- Cahan LD, Sutherling WW, Engel J Jr, Crandall PH. A protocol for evaluation of patients for surgery for epilepsy. Presented at the Annual Meeting of American Association of Neurological Surgeons, Denver, CO, April, 1986.
- Sutherling WW, Barth DS. Multichannel magnetic recording of single epileptic spikes shows spatially restricted dipolar patterns. *Epilepsia* 1986;27:643.
- Sutherling WW. Magnetoencephalographic localization in human complex partial seizures. Functional Localization: A challenge for Biomagnetism, Institute for Scientific Interchange, Turin, Italy, September, 1986.
- Sutherling WW, Cahan LS, Engel J, Crandall PH, Barth DS. Magnetic spike localization of the human epileptic focus agrees with simultaneous direct cortical recording. *Neurology* 1986;36:127.
- Sutherling WW, Barth DS, Crandall PH. Magnetic localization of the somatosensory evoked response agrees with scalp EEG and direct cortical recordings in patients with complex partial epilepsy. *Neurology* 1987;37:376.
- Sutherling WW, Risinger MW, Wilson CL, Cahan LS, Babb T, Crandall PH. Cortical seizure onsets on subdural electrodes in complex partial epilepsy. *Neurology* 1987;37:245.
- Sutherling WW, Barth DS. Simultaneous multichannel magnetic field measurements show approximately dipolar patterns of the interictal spike in complex partial epilepsy without apparent dipolar patterns in the scalp electric field. Presented at the 6th International Conference on Biomagnetism, Tokyo, Japan, August, 1987.

- Sutherling WW. Measurements of the extracranial magnetic fields of the brain have complementary advantages to scalp electric field measurements. Presented at the 17th Epilepsy International Congress, Jerusalem, September, 1987.
- Sutherling WW, Risinger MW, Wilson CL, Crandall PH. The anatomy of transient transcortical motor aphasia after focal excision for epilepsy. *Epilepsia* 1987;28:592.
- Risinger MW, Sutherling WW, Wilson CL, Cahan LD, Crandall PH. Comprehension deficits with electrical stimulation of Wernicke's area. *Neurology* 1988;38:185.
- Risinger MW, Sutherling WW, Wilson CL, Cahan LD, Crandall PH. Chronic subdural grid recordings in patients with complex partial seizure disorders: A comparison of ictal and interictal recordings. *Epilepsia* 1987;28:599.
- Henry TR, Engel J, Sutherling WW, Risinger MW, Phelps ME. Correlation of structural and metabolic imaging with electrographic localization and histopathology in refractory complex partial epilepsy. *Epilepsia* 1987;28:601.
- Sutherling W, Risinger M, Wilson C, Levesque M, Crandall P. Seizures from the intermediate region of the dorsolateral frontal lobe. *Epilepsia* 1988;29:211.
- Sutherling W, Risinger M, Darcey T, Levesque M, Crandall P, Barth D. Cortical confirmation of MEG and EEG prediction of frontal lobe seizure localization. *Epilepsia* 1988;29:663.
- Sutherling W, Risinger M, Levesque M, Crandall P, Darcey T, Barth D. Cortical seizure onsets show tangential dipolar patterns in frontal lobe epilepsy. *Epilepsia* 1988;29:702.
- Sutherling W, Baumgartner C, Levesque M, Crandall P, Barth D. Detection of MEG spikes in complex partial epilepsy: Necessary conditions on simultaneous cortical recordings. *Epilepsia* 1988;29:656.
- Sutherling W, Risinger M, Levesque M, Crandall P. Seizures from the posterior dorsolateral frontal lobe. *Epilepsia* 1988;29:685.
- Baumgartner C, Di S, Sutherling WW, Barth DS. Spatiotemporal neuromagnetic analysis of the human epileptic spike complex. *Epilepsia* 1988;29:672.
- Sutherling W, Risinger M, Levesque M, Baumgartner C, Crandall P, Ladefoged P. Anatomical differences of articulation changes during cortical stimulation. Presented at the 41st Annual Meeting of the American Academy of Neurology, Chicago, October 21, 1988.
- Sutherling WW, Baumgartner C, Darcey TM, Barth DS. Localization of lateral fronto-central seizures in relation to sensorimotor cortex. Presented at the 7th International Conference on Biomagnetism, New York, August 14-18, 1989.
- Baumgartner C, Sutherling WW, Barth DS. Spatiotemporal modeling of somatosensory evoked magnetic fields. Presented at the 7th International Conference on Biomagnetism, New York, August 14-18, 1989.
- Barth DS, Baumgartner C, Sutherling WW. Neuromagnetic field modeling of multiple brain regions producing interictal spikes in human epilepsy. Presented at the 7th International Conference on Biomagnetism, New York, August 14-18, 1989.
- Di S, Baumgartner C, Sutherling W, Barth DS. In vivo neuromagnetic study of normal and pathological intracellular current in rat cortex. Presented at the 7th International Conference on Biomagnetism, New York, August 14-18, 1989.
- Sutherling, W, Baumgartner C, Levesque M, Crandall P, Barth D. Quantification of cortical surface area of human interictal spike and seizure foci using MEG and EEG, confirmed by ECoG. Presented at the 18th International Epilepsy Congress, New Delhi, October 17-22, 1989.
- Sutherling W., Risinger M. Baumgartner, Crandall P, Wilson C, Levesque M. Frontal lobe complex partial seizures with forced thought, speech arrest, and laughter: localization by MEG, EEG, SEEG, and ECoG. Presented at the 18th International Epilepsy Congress, New Delhi, October 17-22, 1989.

- Sutherling W, Baumgartner C, Levesque M, Crandall P, Barth D. Non-invasive estimates of the size of the human temporal lobe interictal spike focus by MEG and EEG. Presented at the American Epilepsy Society, Boston, December 4, 1989.
- Baumgartner C, Barth D, Levesque M, Crandall P, Sutherling W. Detection sensitivity of spontaneous MEG spike recordings in frontal lobe epilepsy. Presented at the American Epilepsy Society, Boston, December 4, 1989.
- Baumgartner C, Barth DS, Levesque M, Sutherling WW. Functional anatomy of frontal lobe seizures as investigated on ECoG and MEG. Presented at the American Epilepsy Society, San Diego, November 14, 1990.
- Muresan L, Nakasato N, Barth D, Sutherling W. Quantification of the spike zone in temporal lobe complex partial epilepsy using multichannel magnetoencephalography. Presented at the American Epilepsy Society, San Diego, November 14, 1990.
- Nakasato N, Muresan L, Barth D, Sutherling W. MEG and EEG spike mapping and dipole localization in temporal lobe complex partial epilepsy. Presented at the American Epilepsy Society, San Diego, November 14, 1990.
- Muresan L, Nakasato N, Sutherling W. Dipole localization in Opercular Epilepsy using the magnetoencephalogram. *Neurology* 1991;41(suppl):262.
- Baumgartner C, Barth DS, Levesque MF, Sutherling WW. Detection of epileptiform discharges on magnetoencephalography in comparison to invasive measurements. Presented at the *8th International Conference on Biomagnetism*, Münster, Germany, August 20, 1991.
- Sutherling W, Nakasato N, Muresan L, Vinet L, Baumgartner C, Barth D. Comparison of EEG, ECoG, MRI, and 7 versus 31 channels of MEG for non-invasive localization of the somatosensory evoked response. Presented at the *8th International Conference on Biomagnetism*, Münster, Germany, August 19, 1991.
- Muresan L, Nakasato N, Vinet J-F, Sutherling W. Identification of 1 versus 2 dipoles by MEG. Presented at the *8th International Conference on Biomagnetism*, Münster, Germany, August 20, 1991.
- Nakasato N, Muresan L, Vinet L, Baumgartner C, Barth D, Sutherling W. Localization and quantification of the human epileptic spike zone, using MEG, EEG, MRI, and evoked responses with validation by ECoG. Presented at the *8th International Conference on Biomagnetism*, Münster, Germany, August 19, 1991.
- Nakasato N, Muresan L, Vinet L, Baumgartner C, Barth D, Sutherling W. Simultaneous MEG and ECoG of spontaneous seizures and comparison with MEG and ECoG of auditory evoked response (AER). Presented at the *8th International Conference on Biomagnetism*, Münster, Germany, August 19, 1991.
- Sutherling WW, Levesque MF. Comparison of chronic and acute cortical stimulations for localization and quantification of language cortex. Presented at the *Annual Meeting of the American Epilepsy Society*, Philadelphia, December 9, 1991.
- Sutherling WW, Levesque MF. Comparison of SEEG and chronic ECoG for localization and quantification of neocortical seizure zones. For presentation at the *Annual Meeting of the American Epilepsy Society*, Philadelphia, December 9, 1991.
- Sutherling WW, Levesque MF. Neocortical partial seizures arising from language cortex. For presentation at the *Annual Meeting of the American Epilepsy Society*, Philadelphia, December 11, 1991.
- Akhtari M, Arthur D, Sutherling W, Mamelak A, Wagner M. Non-invasive microscopic spatio-temporal imaging of multiple sources in human sensori-motor cortex. *Abs. #100464. Am. Epil. Soc. 54<sup>th</sup> Ann. Mtg.*, LA, Dec 2000.
- Arthur D, Sutherling W, Mamelak A, Gehret DA, Akhtari M. Whole Cortex MEG with MRI (MSI) in intractable extratemporal neocortical partial epilepsy. *Abs. #100454. Am. Epil. Soc. 54<sup>th</sup> Ann. Mtg.*, LA, Dec 2000.
- Sutherling W, Arthur D, Mamelak W. Whole cortex MEG and MRI (MSI) localizes sensori-motor cortex adjacent to epilepsy and tumors. *Abstract #100458. American Epilepsy Society Meeting*, Los Angeles, December 2000.
- Shattuck D, Sutherling W, Leahy R. Improved cortical MRI segmentation of brains with intracranial grid electrodes. *7<sup>th</sup> Annual Meeting: Human Brain Mapping*. Brighton, UK. June 2001.
- Sutherling W, Arthur D, Mosher J, et al.. Localization precision of whole cortex neuromagnetometer system for human epilepsy studies. *Epilepsia* 2001;42:76 (Abstract #1.238 at Am. Epil. Soc. 55<sup>th</sup> Ann. Mtg., Philadelphia, Dec 2001.)

- Ossadtchi A, Mosher J, Jerbi K, Lopez N, Baillet S, Sutherling W, Leahy R. Automated interictal spike detection and source localization in MEG using independent component analysis (ICA). Abstract. Am. Epil. Soc. 55<sup>th</sup> Ann. Mtg., Philadelphia, Dec 2001.
- Mamelak AN, Sutherling W, Akhtari M, Lopez N. Magnetoencephalography (MEG) in the surgical management of neocortical epilepsy and central tumors. Abstract. Am. Epil. Soc. 55<sup>th</sup> Ann. Mtg., Philadelphia, Dec 2001.
- Lopez N, Akhtari M, Mamelak A, Merrifield W, Sutherling W. Magneto-oculogram from magnetic cosmetics. Presented at the *13th International Conference on Biomagnetism BioMag2002*, Jena, Germany, August 10-14, 2002.
- Akhtari M, Bryant H, Flynn E, Lopez N, Padilla R, Merrifield W, Mamelak A, Sutherling W. MEG/EEG source localization and conductivities of the live human skull. Presented at the *13th International Conference on Biomagnetism BioMag 2002*, Jena, Germany, August 10-14, 2002.
- Akhtari M, Mamelak A, Lopez N, Padilla R, Merrifield W, Sutherling W. Unique localization information of MEG in neocortical epilepsy and tumors in four neurosurgical patients. Presented at the *13th International Conference on Biomagnetism BioMag 2002*, Jena, Germany, August 10-14, 2002.
- Merrifield W, Akhtari M, Lopez N, Padilla R, Mamelak A, Mosher J, Leahy R, Flynn E, Sutherling W. MEG spike dipole populations have different statistics in different epilepsies. Abstract. Am. Epil. Soc. 56<sup>th</sup> Ann. Mtg., Seattle, Dec 11, 2002.
- Akhtari M, Bryant H, Flynn E, Lopez N, Padilla R, Merrifield W, Mamelak A, Sutherling W. Comparison of BEM with 3-shell sphere model using actual skull conductivity. Abstract. Am. Epil. Soc. 56<sup>th</sup> Ann. Mtg., Seattle, Dec 9, 2002.
- D. Thyerlei, N. P. Lopez, R. D. Padilla, T. Maleeva, A. N. Mamelak, W. S. Merrifield, M. Akhtari and W. W. Sutherling (2002) "Presurgical Epileptic Focus Detection, an Interesting Case: Ictal Single Photon Emission Computer Tomography (SPECT) and Grid Localizations Differ From Interictal Neuromagnetometer (MEG) and Depth Electrode Localizations" C148, ACNS, New Orleans
- D. Thyerlei, M. Akhtari, H. C. Bryant, A. N. Mamelak, W. S. Merrifield and W. W. Sutherling (2002) "Comparison of Boundary Element Model (BEM) with Three-Spherical Shell Model Using Actual Skull Conductivities", *Epilepsia*, 43(S7): 37
- W. S. Merrifield, D. Thyerlei, N. P. Lopez, M. Akhtari, A. N. Mamelak, M. L. Riggs, and W. W. Sutherling (2002) "MEG Spike Dipole Clusters Have Different Statistics in Different Epilepsies", *Epilepsia*, 43(S7): 315
- D. Thyerlei, A. Ossadtchi, F. Darvas, A. N. Mamelak, W. W. Sutherling "Using intracranial depth electrode stimulation as a reference source for reconstruction from simultaneous scalp-EEG", will be presented at Human Brain Mapping 2003, New York
- D. Thyerlei, A. Ossadtchi, N. P. Lopez, W. S. Merrifield, W. W. Sutherling "68- compared to 150-sensor whole head magnetometer for SEF dipole localization", will be presented at ACNS 2003, San Francisco
- D. Thyerlei, T. Maleeva, A. N. Mamelak, F. I. Darvas, W. W. Sutherling "After discharge (AD) stimulation on simultaneous scalp-EEG and intra-cranial EEG (ECoG) and spike source reconstruction", will be presented at AES 2003, Boston
- A. Ossadtchi, J. C. Mosher, S. Baillet, N. Lopez, W.S. Sutherling, R. M. Leahy, "Automated Detection of Dipole Clusters in Interictal MEG Data", 13th International Conference on Biomagnetism, August 8-14 2002, Jena, Germany, in press
- A. Ossadtchi; R. M. Leahy, J. C. Mosher, N. Lopez; W. Sutherling. Automated interictal spike detection and source localization in MEG using ICA and spatial-temporal clustering. 2002 IEEE International Symposium on Biomedical Imaging Macro to Nano, June 2002
- Dinah Thyerlei, Alexei Ossadtchi, Adam N. Mamelak, William W. Sutherling. Using intracranial depth electrode stimulation as a reference source for reconstruction from simultaneous scalp-EEG. Human Brain Mapping Symposium, June 17-21, 2003, New York, New York.
- Dinah Thyerlei, Nancy P Lopez, Rachelle D. Padilla, Tatjana Maleeva, Adam N. Mamelak, Warren S. Merrifield, Massoud Akhtari, William W. Sutherling. Presurgical epileptic focus detection, an interesting case: ictal single

photon emission computer tomography (SPECT) and grid localizations differ from interictal neuromagnetometer (MEG) and depth electrode localizations. Annual Meeting of the American Clinical Neurophysiology Society, June 2003, Boston, Mass.

Warren S. Merrifield, BS, Dinah Thyerlei, MD, Matt L. Riggs, PhD, Nancy P. Lopez, AA, Adam N. Mamelak, MD and William W. Sutherling, MD. Interictal spike dipoles with higher amplitudes have lower residuals. #2.225. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 9, 2003.

Dinah Thyerlei, MD, Tatiana Maleeva, MD, Adam N. Mamelak, MD, Felix I. Darvas, PhD and William W. Sutherling, MD. After discharge (AD) stimulation on simultaneous Scalp-EEG and intracranial EEG (ECoG) and spike source reconstruction. #2.173. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 9, 2003.

Alexei Y. Ossadtchi, MS, John C. Mosher, Ph.D., William W. Sutherling, M.D. and Richard M. Leahy, Ph.D. Non-invasive HMM-based detection of interictal activity propagation between several epileptogenic foci in patients with multi-focal epilepsy. #2.166. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 9, 2003.

Thyerlei D, Merrifield WS, Lopez NP, Sutherling WW. "Epileptic spike source reconstruction from MEG data for clinical use –A comparison of different software packages", presented at the *International Society for Brain Electromagnetic Topography (ISBET) 2003*.

Merrifield W, Thyerlei D, Mamelak AN, Sutherling WW. Determining hemispheric language dominance: replication of the Houston Language Mapping Protocol. First Annual Meeting of Magnetoencephalography Applications. Xylocastro, Greece. September 15-17, 2005.

Dinah Thyerlei, Nancy Lopez, Adam N. Mamelak, and William W. Sutherling. After Discharge (AD) Stimulation on Simultaneous MEG and Intracranial EEG (ECoG) and Spike Source Reconstruction. #3.151. American Epilepsy Society 2003 59<sup>th</sup> Annual Meeting, Washington, DC, December 6, 2005.

**EDITORIAL BOARD**

*Journal of Clinical Neurophysiology*  
*Brain Topography*

**EDITORIAL AD HOC REFEREE**

*Neurology*: 1985, 1986, 1991.  
*Annals of Neurology*: 1986, 1989, 1990, 1991.  
*Brain Research*: 1987, 1991.  
*Archives of Neurology*: 1988.  
*Archives of Psychiatry*: 1988.  
*Epilepsia*: 1988, 1989, 1990, 1991, 2002  
*Acta Neurologica Scandinavica*: 1989.  
*Science*: 1990.  
*Journal of Neuroscience*: 1991.  
*Institute of Medicine, National Academy of Sciences*: 1992.  
*Electroencephalography and Clinical Neurophysiology*  
*Epilepsy Research*  
*Journal of Neurosurgery*

**BOOK REVIEWS**

Sutherling WW. Biomagnetism: An Interdisciplinary Approach, by Williamson SJ, et al, for *Epilepsia*, Plenum, New York, 1983.

**AD HOC PEER REVIEW OF GRANTS**

Surgical Treatment of Epilepsy Site Visit, NINCDS. Yale University School of Medicine, 1986. Study Section NSP-B.  
Veterans Administration, Magnetoencephalography Site Visit, VAMC Albuquerque, NM. March 13, 1989.  
Epilepsy Surgery Grant Site Visit, NINCDS. University of Pittsburgh, 1990.  
Study Section Neurology A.  
NATO, 1990, 1991.  
Veterans Administration Grant Review, 1990, 1991, 1992, 1993.  
NIH BDCN1 Study Section, National Institutes of Health, Bethesda, MD, May 2001.



**CME AND OTHER COURSES GIVEN:**

Evoked Potentials, "Clinical Application of Brainstem Auditory Evoked Potentials", Wadsworth Veterans Administration Hospital, Los Angeles, CA, July, 1981.

Symposium on Clinical Problem Solving in Neurology for the Primary Care Physician, "Technological Advances in the Diagnosis of Epilepsy", University of California, Los Angeles, 1983.

Symposium on Neuroimaging Techniques, "Magnetoencephalography", Annual Meeting of the Western EEG Society, San Diego, CA, 1984.

Excerpta Medica, "Epilepsy: Identifying and Referring Patients for Surgery", Boston, MA, 1984.

Clinical Epilepsy, "The Place of Surgery in the Treatment of Seizures", Annual Meeting of the American Academy of Neurology, Boston, MA, 1984.

Clinical Epilepsy, "The EEG in the Generalized Epilepsies", Annual Meeting of the American Academy of Neurology, Boston, MA, 1984.

Clinical Electroencephalography, "The EEG in Focal Epilepsies", Annual Meeting of the American Academy of Neurology, Boston, MA, 1984.

"The EEG in Generalized Seizure Disorders", Annual Meeting of the American EEG Society, Salt Lake City, Utah, 1984.

Basic Neurology Course (M103), "Epilepsy", Neuroscience Curriculum, UCLA School of Medicine, 1984.

Early Diagnosis in Alzheimer's Disease Symposium, "Magnetoencephalography", Los Angeles, CA, 1985.

"The Magnetic Fields and Electric Potentials of the Brain", American EEG Society Annual Meeting, Orlando FL, 1985.

Clinical Electroencephalography, "The EEG in Childhood Seizure Disorders", The Annual Meeting of the American Academy of Neurology, Dallas, TX, April, 1985.

American EEG Society Symposium, "Magnetic Fields of the Brain", Orlando, FL, October, 1985.

Ninth Annual Evoked Potentials and EEG Workshop, "Magnetic EEG", University of California, Irvine, January, 1986.

Ninth Annual Evoked Potential and EEG Workshop, "Intraoperative EEG Monitoring for Epilepsy", University of California, Irvine, CA, January, 1986.

Neuroimaging Seminar, "Neuromagnetism", Neuroscience Foundation, New Orleans, LA, April, 1986.

"Magnetoencephalography", 50 Year Golden Jubilee-EEG at Mayo Clinic, Rochester, MN, July, 1986.

Plenary Session, Neurobiomagnetism with SQUIDS, "MEG and EEG Localization in Human Complex Partial Epilepsy", Applied Superconductivity Conference, Baltimore, MD, September, 1986.

"Magnetoencephalography in Human Complex Partial Epilepsy", IEEE Engineering in Medicine and Biology Society - 8th Annual Conference, Dallas-Fort Worth, TX, November, 1986.

"Surgery of Epilepsy - Neurophysiological Evaluation", Annual Meeting of American EEG Society, Seattle, WA, November, 1986.

Seminar for Neurology Service, "Reflex Epilepsy", Wadsworth VA Medical Center, Los Angeles, January, 1987.

"Classification of Seizures and of Epilepsy", Parke-Davis Epilepsy Clinical Clerkship, UCLA, March, 1987.

Brain Tumor: Advanced Treatment, Continuing Education in Health Sciences, "Brain Electrical Activity as an Adjunct to Brain Tumor Therapy", UCLA Extension and the Division of Neurology, UCLA, April, 1987.

"Evaluation of surgical patients with intractable complex partial seizures", Presented at the State of the Science in Clinical EEG and Electrophysiology, Annual Course of American EEG Society, St. Louis, MO, September, 1987.

- "Clinical Application of Electrocorticography", American EEG Society, San Diego, CA, October 4, 1988.
- "Experimental and Clinical Neurophysiology", Moderator of Platform Session B: American Epilepsy Society, San Francisco, October 18, 1988.
- "Spatiotemporal Structure of Sensorimotor Cortex", Neuroscience 254, Brain Research Institute, UCLA, November 9, 1988.
- "EEG Triphasic Patterns: Differential Diagnosis", Neurology Grand Rounds, Reed Neurological Research Center, UCLA School of Medicine, 1981.
- "Diagnosis and Treatment of Epilepsy", Neurology Lecture Series, Reed Neurological Research Center, UCLA School of Medicine, 1982.
- Clinical EEG Reading Sessions for Neurology Residents, biweekly. EEG Laboratory, Reed Neurological Research Center, UCLA School of Medicine, July, 1981-June, 1982.
- "Magnetoencephalography", Sansum Medical Clinic and Cottage Hospital, Santa Barbara, CA, November, 1984.
- "Magnetic Fields of the Brain", Neurology Research Seminar, UCLA School of Medicine, 1985.
- "Recent Advances in Clinical Neurophysiology", Brentwood Neurology Medical Staff Conference, Brentwood Veterans Administration Hospital, Los Angeles, CA, 1985.
- "The Motor System", Neuroscience Course Curriculum, UCLA School of Medicine, April, 1985.
- "Magnetic Fields of the Brain", University of New Mexico, Albuquerque, NM, October, 1985.
- "Epilepsy Surgery", Sansum Medical Clinic and Cottage Hospital, Santa Barbara, CA, November, 1985.
- "Magnetoencephalography", American EEG Society, Orlando, FL, November, 1985.
- "The Biomagnetic Inverse Problem", Invited Lecture, MEG Validation Studies, Milton Keynes, England, April, 1986.
- "MEG in Epilepsy", American Academy of Neurology, April, 1986.
- "Magnetoencephalography", Grand Rounds presentation, La Jolla VA Hospital, UC, San Diego, March, 1987.
- "Physiology of Dorsolateral Cortex," Grand Rounds presentation, UCLA, March, 1988.
- "Functional Localization in Neurological Disorders", Invited Speaker, 7th International Conference on Biomagnetism, New York, August 14-18, 1989.
- "Magnetoencephalography - Functional Anatomy of Human Hand Somatosensory Cortex", lecture, California Institute of Technology, Pasadena, California. October 2, 1998.
- "Epilepsy and Brain Mapping", CME lecture given at Medical Grand Rounds, Huntington Hospital, Pasadena, California. January 12, 1999. One (1) hour.
- "Brain Mapping", seminar, California Institute of Technology, Pasadena, California. January 21, 1999. One (1) hour.
- "Comprehensive Treatment of Epilepsy", CME lecture given, Henry Mayo Newhall Medical Center, Santa Clarita, California. March 10, 1999. One (1) hour.
- "Brain Mapping", CME lecture given, Methodist Hospital, Arcadia, California. April 1, 1999. 11:45 am - 2:00 pm. Two (2) hours.
- "Management of Complex Seizures with the Ketogenic Diet" Children's Hospital of Orange County, Orange California. May 5, 1999. One (1) hour.
- "Brain Mapping and Higher Cognitive Function". Los Angeles Valley College, Van Nuys, California. At invitation of Professor Danielle McAneney. July 15, 1999. One (1) hour.
- "Epilepsy: Women's Issues and non-medical Treatments". Symposium Epilepsy Foundation of America, Los Angeles and Orange County Chapter. Hyatt Hotel, Valencia, California. July 17, 1999. Two (2) hours.

- “Epilepsy: Treatment of Intractable Epilepsy: Vagal Nerve Stimulation and Ketogenic Diet”. Symposium Epilepsy Foundation of America, Los Angeles and Orange County Chapter. Oxnard College, Camarillo, California. July 31, 1999. Three (3) hours.
- “Management of Epilepsy”. Continuing Medical Education. Monterey Park Hospital. Monterey Park, California. August 10, 1999. One and one-half (1.5) hours CME credit.
- “Intractable Seizures: New Diagnostic Techniques”. Pediatric Grand Rounds. Huntington Hospital, Pasadena, California. Wednesday October 20, 1999. One (1) hour CME credit.
- “Be smart about your options is drugs don’t stop seizures: VNS Therapy, Ketogenic Diet & Surgery”. “Be Seizure Smart” Conference. Epilepsy Foundation of Los Angeles, Orange, San Bernardino and ventura Counties. Glendale, California. Saturday October 23, 1999. One (1) hour.
- “MRI, MEG, MSI and Epilepsy”. Huntington Medical Research Institutes, Pasadena, California. Friday November 12, 1999. One (1) hour.
- “New Advances in the Treatment of Epilepsy”. Pacifica Hospital of the Valley, Burbank, California. Friday November 19, 1999. One and one half (1½) hours CME credit.
- “Comprehensive Treatment of Epilepsy”. Continuing Medical Education. Providence-St. Joseph’s Hospital, Burbank, California. February 8, 2000. One (1.0) hour CME credit.
- “Seizures in Pregnancy/OB Patients”. Continuing Medical Education. St. Francis Medical Center, Lynwood, California. April 10, 2001. One and one half (1½) hours CME credit.
- “Comprehensive Diagnosis and Treatment of Seizure Disorders”. Continuing Medical Education. Monterey Park Hospital, Monterey Park, California. October 23, 2001. One (1.0) hour CME credit.
- “Managing Epilepsy in Pregnancy”. Continuing Medical Education. Kaiser Permanente Medical Center, Los Angeles, California. February 7, 2002. One and one half (1½) hours CME credit.
- “Classification of Seizures and Epilepsy”. Continuing Medical Education and Inservice. Della Martin Mental Health Center, Huntington Hospital, Pasadena, California. April 2, 2002. One (1.0) hour CME credit.
- “Focal epilepsy.” Morning Neurology Symposium. Cottage Hospital. Santa Barbara, CA. May 4, 2002. One (1.0) hour CME credit.
- “Comprehensive Epilepsy Treatment”. Medical Residents noon lecture. Huntington Hospital. Pasadena, CA. January 6, 2003. One (1.0) hour CME credit.
- NIH study section review of R01 grant proposals. Brain Diseases and Clinical Neuroscience Study Section 1 (BDCN1). National Institutes of Health, Bethesda, MD. At Chevy Chase Holiday Inn, Chevy Chase, MD. February 3<sup>rd</sup> (9hours) and 4<sup>th</sup> (4 hours), 2003. (total 13 hours, equivalent to 8 hours CME credit for 2003)
- “Focal Epilepsy”. Nurses orientation and CEU lecture. Huntington Hospital. Pasadena, CA. March 31, 2003. One (1.0) hour CME credit.
- Women’s Issues in Epilepsy”. Grand Rounds. Huntington Hospital. Pasadena, CA. July 10, 2003. One (1.0) hour CME credit.

**2004 – 2 hours.**

- “Comprehensive Treatment of Epilepsy”. CME conference, Huntington Hospital, Research Conference Hall Pasadena, CA. January 8, 2004. One (1.0) hour CME credit.
- “Seizures, Mechanisms of Action, Status Epilepticus”. CME conference, Huntington Hospital, Conference Room 3 Pasadena, CA. May 12, 2004. One (1.0) hour CME credit. Residents’ training conference.

**2005 – 2 hours.**

- “Comprehensive Management of Epilepsy: Update from 2002: Selecting Optimum Strategies”. Neurology Grand Rounds. Burtmess Auditorium, Santa Barbara Cottage Hospital, Santa Barbara, CA. November 14, 2005. One (1.0) hour CME credit.
- “Current Strategies in the Management of Epilepsy Update 2006: Selecting the Optimum Strategies”. CME Conference, St. Joeseeph’s Hospital, Burbank, CA. December 8, 2005. One (1.0) hour of CME credit.

**2006 – 6.0 hours...**

“Treatment of Seizures and Epilepsy”. Church of the Good Shepherd, Duarte, CA. March 19, 2006. One hour (1.0) to patients.

“Comprehensive Management of Epilepsy: Treatment Update.” Antelope Valley Neuroscience Center. Lancaster, CA. February 17, 2006. One hour.

“Treatment of Epilepsy: Update in 2006”. Huntington Hospital, Dining Room C. Lecture to Internal Medicine Residents on Neurology Rotation. April 12, 2006. One (1.0) hour of CME/GME credit.

“Management of Seizures”. City of Hope National Medical Center, Duarte, CA. One-half (1/2 ) hour Category I CME Credit.

“Treatment of Epilepsy.” “Not another moment lost to seizures”Epilepsy Foudnation of Greater Los Angeles. Cathedral of the Angels, Los Angeles, CA. Saturday morning. November 4, 2006. One (1.0) hour of CME/GME credit

“Presurgical Evaluation of Temporal Lobe Epilepsy.” “Not another moment lost to seizures”Epilepsy Foudnation of Greater Los Angeles. Cathedral of the Angels, Los Angeles, CA. Saturday afternoon. November 4, 2006. One (1.0) hour of CME/GME credit

“Panel Discussion: Q&A.” “Not another moment lost to seizures”Epilepsy Foudnation of Greater Los Angeles. Cathedral of the Angels, Los Angeles, CA. Saturday afternoon. November 4, 2006. One-half (1/2) hour of CME/GME credit

**2007 – 1.0 hour**

“Prospective, observational case-series of influence of MSI on intracranial EEG plans in epilepsy.” Neurology Grand Rounds. Stanford University, Stanford, California. Friday morning 8 am. September 5, 2008. One hour Category I CME Credit.

**2009 – 1.0 hour**

Recent Advances in Epilepsy Localization.. Huntington Hospital Continuing Medical Education, Pasadena, CA. June 3, 2009. CME Category I hours: 1 hours.

## **QME - Qualified Medical Evaluator**

### **RECENT CME COURSES ATTENDED OR COMPLETED**

#### **2005 – 4.5 hours.**

The New QME Process (psot SB899). August 21, 2004. One and one-half (1 ½) credits.

Vocational Rehabilitation Disputes. August 21, 2004. One and one-half (1 ½) credits.

AMA Guides – Intro. August 21, 2004. One and one-half (1 ½) credits.

## **CME - Continuing Medical Education**

### **RECENT CME COURSES ATTENDED OR COMPLETED**

#### **1998 – 6 hours.**

“Forensic Medicine in the California Workers’ Compensation System” Industrial Medical Council of the State of California. July 13, 1998. Six (6) hours.

#### **1999 - 39 hours.**

"Comprehensive Treatment of Epilepsy" by Ronald Lesser, MD, from Johns Hopkins Hospital, Special Presentation Department of Medicine, Huntington Hospital and Huntington Medical Research Institute, Pasadena, California. February 22, 1999. One (1) hour.

"Comprehensive Treatment of Epilepsy - Neocortical Seizures", Huntington Hospital, Pasadena, California. July 23, 1999. One (1) hour.

“Paroxysmal Neurological Events: Practical Tips in Assessment and Management of Spells” . Robert D. Harbaugh, MD. Huntington Hospital, Pasadena, California. Tuesday, October 26, 1999. One and one-half (1 ½) hours.

“Complications of Epilepsy.” American Epilepsy Society 1999 Annual Course. Orlando, Florida. December 5, 1999. Five and one-half (5.5) hours CME Category 1.

“1999 Investigators’ Workshop.” American Epilepsy Society 1999 Annual Course. Orlando, Florida. December 5, 1999. Six (6.0) hours CME Category 1.

“1999 Scientific Program.” American Epilepsy Society 1999 Annual Course. Orlando, Florida. December 6, 1999 to December 8, 1999. Fifteen (15) hours CME Category 1.

“1999 Scientific Program.” American Epilepsy Society 1999 Annual Course. Orlando, Florida. December 5, 1999. Nine (9) hours CME Category 2. Independent study.

#### **2000 – 29 hours.**

“2000 Scientific Program.” American Epilepsy Society 2000 Annual Course. *Am. Epil. Soc. 54<sup>th</sup> Ann. Mtg.*, LA, Dec 5-8, 2000. Nine (9) hours CME Category 1. Independent study.

“2000 Biweekly Epilepsy Neuroscience Education Conference Hour”. Twenty (20) hours CME Category 2.

#### **2001 – 12.5 hours.**

“2001 Scientific Program.” American Epilepsy Society 2001 Annual Course. *Am. Epil. Soc. 55<sup>th</sup> Ann. Mtg.*, Philadelphia, Nov 30 to Dec 6, 2001. Twelve and one quarter (12 ¼) hours CME Category 1.

#### **2002 – 11.5 hours.**

“The mechanistic explanation of the ketogenic diet”. Jung Rho, MD, Direct Comprehensive Epilepsy Program, University of California, Irvine., at HMRI conference room. April 25, 2002. 12pm-2pm. Two (2) hours CME Category 1.

“The importance of dopamine agonists.” Robert Harbaugh, MD. Neurology Symposium. Cottage Hospital. Santa Barbara, CA. May 4, 2002. 11:15am-12:15pm. One (1.0) hour CME credit.

American Epilepsy Society 56<sup>th</sup> Annual Meeting. Investigators' Workshops: Stem cells in epilepsy; Pharmacogenetics of antiepileptic drugs; Functional MRI and memory; Gamma Knife surgery in epilepsy. Seattle, Washington. December 8, 2002. Six (6.0) hours CME Category I credit.

American Epilepsy Society 56<sup>th</sup> Annual Meeting. 6<sup>th</sup> Annual AES Antiepileptic Therapy Symposium. Epilepsy Therapy: Challenges of Adverse Events. Seattle, Washington. December 9, 2002. Two and one half (2.5) hours CME Category I credit.

**2003 – 18.5 hours.**

“Restless legs syndrome: the most common movement disorder you have never heard of.” Robert Harbaugh, MD. Neurology Symposium. Huntington Hospital, Pasadena, CA. February 11, 2003. 12:30pm-2:00pm. One (1.0) hour CME credit.

“Special considerations: The patient of childbearing age, and the effect of AEDs on bone health”. Profiles in seizure management Vol 2, No 2. University of Minnesota, Minneapolis, MN. May 1, 2003. one (1.0) hour CME Category I credit.

“Advances in the treatment of neurological disease”. Half Day Symposium, Athenaeum, California Institute of Technology, Pasadena, CA. Saturday, July 19, 2003. 0800-1300. Four and one half (4.5) hours CME Category I credit.

Neuroimaging: Advances and Applications. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 7, 2003. Six (6.0) Category I hours.

Presidential Symposium – The Developing Brain. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 8, 2003. Two (2.0) Category I hours.

Plenary Session –Focal Lesions and Epilepsy: From Sequence to Cells to Surgery. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 9, 2003. Two (2.0) Category I hours.

Scientific Platform Session E. Surgery. American Epilepsy Society 2003 57<sup>th</sup> Annual Meeting, Boston, Massachusetts, December 9, 2003. Two (2.0) Category I hours.

**2004 – 14 hours.**

Human Participant Protections Education for Research Teams. National Cancer Institute. July 7, 2004. Two (2.0) Category I hours.

American Epilepsy Society 58<sup>th</sup> Annual Meeting. ANNUAL MEETING COURSES. Philadelphia, PA. December 4, 2005 to December 7, 2005. CME Category I hours = 12.0 hours

**2005 – 36 hours.**

Managing Pain and End-of Life Issues. A Guide for California Physicians. End of Life Care: Palliative Care. Pain Management. Medical Futility at the End of Life. *Volume 1*. August 30, 2005. Three (3.0) Category I hours.

Managing Pain and End-of Life Issues. A Guide for California Physicians. Pain Management in the ED. Acute Pain Management. Mindfulness Meditation and Chronic Pain. Chronic Non-Cancer pain Basics for the Primary Care Physician. Research reveals pain problems in the ED. Studies show pain disparity among minorities. Report card gives states low grades on EOL care. CA taking steps to improve access, care. Sick and dying kids don't get appropriate end of life care. Helping parents is key in pediatric palliative care. Voluntary dehydration as end of life option. Medical futility is sometimes a tug of war between hospitals, families. *Volume 2*. August 30, 2005. Four (4.0) Category I hours.

Managing Chronic pain with Opioids . August 30, 2005. One (1.0) Category I hour.

Pain and Depression: Answers to the clinical conundrum . August 30, 2005. One (1.0) Category I hour.

Clinical Manifestations and treatment options for chronic non-malignant breakthrough pain . August 30, 2005. One (1.0) Category I hour.

The question of pain. Answers from the faculty of the National Pain Forum . August 30, 2005. One (1.0) Category I hour.

The Spectrum of Pain: A CME special report series Part 4 of 4 . August 30, 2005. One (1.0) Category I hour.

American Epilepsy Society 59<sup>th</sup> Annual Meeting. ANNUAL MEETING COURSES. Washington, DC. December 2, 2005 to December 6, 2005. CME Category I hours = 24.0 hours.

AED Pharmacology: Application to Practice 12/03/05 (2.50 hrs)

AET Symposium: Seizure Aggravation During Antiepileptic Therapy 12/06/05 (2.50 hrs)

Annual Course: Evidence Used to Diagnose and Treat Patients 12/04/05 (6.00 hrs)

Merritt-Putnam Symposium Pharmacoresistance: From Clinic to Mechanism 12/03/05 (3.50 hrs)

Platform B: Clinical Neurophysiology/Clinical Epilepsy 12/05/05 (3.00 hrs)

Plenary III: Maladaptive Neuroplasticity in Stress and Epilepsy 12/06/05 (2.00 hrs)

Presidential Symposium: Behavioral and Cognitive Comorbidities in Pediatric Epilepsy 12/05/05 (2.00 hrs)

Resective Epilepsy Surgery: Patient Selection and Outcomes 12/05/05 (2.50 hrs)

## **2006 – 31.75 hours...**

Update 2006: Management of Central Nervous System Tumors. City of Hope National Medical Center, Duarte, California. October 21, 2006. Six and ¾ (6.75) Category I Hours Credit.

American Clinical Neurophysiology Society In-Service Examination. March 2006.

Detailed Imaging and Surgical Assessment. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 2, 2006. CME Category I hours: 2.5 hours.

Legal Aspects of Epilepsy. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 4, 2006. CME Category I hours: 2.5 hours.

Hot Topics Symposium. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 1, 2006. CME Category I hours: 2.5 hours.

Mortality. Plenary Session. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 5, 2006. CME Category I hours: 2.0 hours.

Annual Fundamentals of Epilepsy: Genetics 101. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 2, 2006. CME Category I hours: 2.5 hours.

Problems for People with Epilepsy Beyond Seizures. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 2, 2006. CME Category I hours: 6.0 hours.

Brain Oscillations: Good and Bad Vibrations. Presidential Symposium. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 3, 2006. CME Category I hours: 2.0 hours.

Mapping Epileptic Circuitry. Merritt-Putnam Symposium. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 3, 2006. CME Category I hours: 3.0 hours.

Continuous Epileptiform Discharges in Sleep. Pediatric State of the Art Symposium. American Epilepsy Society 60<sup>th</sup> Annual Meeting.. San Diego, CA December 4, 2006. CME Category I hours: 2.0 hours.

## **2007 – 22.5 hours...**

AET Symposium: Generic Antiepileptic Drug Substitution – Sorting Out the Myth from the Science 2007. November 30, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 2.25 hours.

Merritt-Putnam Symposium: Post-Traumatic Epilepsy – Treatable Epileptogenesis? - 2007 AES Annual Meeting - December 1, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 3.0 hours.

Annual Fundamentals of Epilepsy: Pharmacology 101 - 2007 AES Annual Meeting - December 1, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 2.5 hours.

Annual Course: Decision Point in Epilepsy – Bedside to Bench - 2007 AES Annual Meeting - December 2, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 5.75 hours.

Professionals in Epilepsy Care #2: Unique Perspectives of Adolescents: - 2007 AES Annual Meeting - December 2, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 2.0 hours.

Presidential Symposium: Found in Translation – New Targets for Therapies 2007 AES Annual Meeting - December 3, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 2.0 hours.

Pediatric State of the Art Symposium: Strategic Approaches to Pediatric Epilepsy Surgery - 2007 AES Annual Meeting - December 3, 2007 – American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 2.0 hours.

Plenary II: Temporal Lobe Epilepsy: Discrete Focus or Spectrum Disorder? - 2007 AES Annual Meeting - December 4, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 1.5 hours.

Plenary III: Subcortical Control of Cortical Excitability - 2007 AES Annual Meeting - December 4, 2007 - American Epilepsy Society 61<sup>st</sup> Annual Meeting. Philadelphia, PA. CME Category I hours: 1.5 hours.

## **2008 – 35.25 hours...**

Recent Advances in Neurovascular Intervention. Ian B. Ross, MD. Huntington Hospital Continuing Medical Education, Pasadena, CA. June 20, 2008. CME Category I hours: 1.5 hours.

CITI Collaborative Institutional Training Initiative. Basic Refresher Course. Human Subjects Research Curriculum completed on September 1, 2008, reference number 2044978. University of Miami. 5 hours.

Tutorial on Financial Conflict of Interest (CFOI) Requirements for NIH-Supported Institutions. Web Based Tutorial. 8/25/08. <http://grants.nih.gov/grants/policy/coi/index.htm>. Office of Extramural Research. National Institutes of Health. US Department of Health and Human Services. Completed 9/6/08. 30 minutes.

Advances in Neuromonitoring and Epilepsy. Y Minazad MD, K Jordan MD, Yehuda Sepkuty MD, Jaime Lopez MD, Richard Bravo. Braun Auditorium, Huntington Hospital, Pasadena, California. Friday October 3, 2008. CME Category I hours: 6 hours.

Annual Fundamentals of Epilepsy: Neurosurgical Evaluation – 2008 AES Annual Meeting - December 5, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.5 hours.

Childhood Absence Epilepsy Symposium. New insights into an Old Syndrome – 2008 AES Annual Meeting - December 5, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.5 hours.

Merritt-Putnam Symposium. Epileptogenic cortical dysplasia: Emerging trends in diagnosis, treatment and pathogenesis – 2008 AES Annual Meeting - December 6, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 3.0 hours.

Annual Course: Matching treatments to seizures and syndromes – 2008 AES Annual Meeting - December 7, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 6.0 hours.

AET Symposium. When Monotherapy Fails – 2008 AES Annual Meeting - December 6, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.25 hours.



Professionals in Epilepsy Care Symposium. The Evaluation and Treatment of Disabled Patient – 2008 AES Annual Meeting - December 7, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.0 hours.

Presidential Symposium. Technology and Human Investigation in Epilepsy. A window to brain function, a bridge to patient care – 2008 AES Annual Meeting - December 8, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.0 hours.

Pediatric State of the Art Symposium. Infantile Spasms. Emerging therapies – 2008 AES Annual Meeting - December 8, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 2.0 hours.

Plenary II. Surgical Controversies in the treatment of MTLE. How to get there and what to do when you get there – 2008 AES Annual Meeting - December 9, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 1.5 hours.

Plenary III. Dravet's Syndrome – translational research from mouse to man – 2008 AES Annual Meeting - December 9, 2008 - American Epilepsy Society 62<sup>nd</sup> Annual Meeting. Seattle, WA. CME Category I hours: 1.5 hours.

## **2009 – 35 hours**

Advances in Clinical Neurophysiology and Epilepsy. Braun Auditorium, Huntington Hospital, Pasadena, California. June 3, 2009. CME Category I hours: 6 hours.

American Epilepsy Society 64<sup>th</sup> Annual Meeting. Boston, Massachusetts. December 4 – 10, 2009.

Annual Fundamentals of Epilepsy: Neurophysiology 101. – 2009 AES Annual Meeting - December 4, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.5 hours.

Spanish Symposium. Pitfalls in Diagnosis and Treatment of Epilepsy. AES Annual Meeting - December 4, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.5 hours.

Professionals in Epilepsy Care Symposium: Predictors and Methodologies of Epilepsy Self-Management. – 2009 AES Annual Meeting - December 5, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.75 hours

Merritt-Putnam Symposium. Beyond Seizures: Mechanisms Underlying Epilepsy Spectrum Disorder – 2009 AES Annual Meeting - December 5, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.75 hours.

AET Symposium. Treatment Strategies for the Patient with Epilepsy – 2009 AES Annual Meeting - December 5, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 1.75 hours

Annual Course: Selecting Patients for Epilepsy Surgery – 2009 AES Annual Meeting - December 6, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 6.5 hours.

Epilepsy Monitoring Unit Symposium. Expert Consensus on Patient Safety – 2009 AES Annual Meeting - December 6, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.0 hours

Presidential Symposium. It takes a village: Solving the Treatment Gap – 2009 AES Annual Meeting - December 7, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.0 hours.

Pediatric State of the Art Symposium. Treatable Metabolic Epilepsies – 2009 AES Annual Meeting - December 7, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 2.0 hours.

Plenary II. The Postictal and Interictal Periods: What are we missing? – 2009 AES Annual Meeting - December 8, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 1.5 hours.

ILAE Symposium. Redefining Treatment Resistant Epilepsy – 2009 AES Annual Meeting - December 8, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 1.5 hours

Plenary III. ICU Monitoring – 2009 AES Annual Meeting - December 8, 2009 - American Epilepsy Society 64th Annual Meeting. Boston, MA. CME Category I hours: 1.5 hours.

## 2010 – 35 hours

American Epilepsy Society Annual Meeting 2011 Annual Fundamentals of Epilepsy. The American Epilepsy Society designates these educational activities for 27.5 AMA PRA Category 1 credits:

*Psychogenic Nonepileptic Seizures* - 2010 AES Annual Meeting - December 3, 2010 - 2.5 credits

Spanish Symposium *Status Epilepticus: Novel Concepts in Pathophysiology and Treatment Strategies* - 2010 AES Annual Meeting - December 3, 2010 - 2.5 credits

Hot Topics Symposium *From Headlines to Healthcare* - 2010 AES Annual Meeting - December 3, 2010 - 2.5 credits

Presidential Symposium *GABAergic Transmission in Epilepsy* - 2010 AES Annual Meeting - December 4, 2010 - 2 credits

AET Symposium *Channel Surfing: Impact on Treatment Strategies* - 2010 AES Annual Meeting - December 4, 2010 - 1.75 credits

Annual Course *Inflammatory Issues and Infectious Causes of Epilepsy* - 2010 AES Annual Meeting - December 5, 2010 - 6 credits

Professionals in Epilepsy Care Symposium *How Practitioners Can Use Neuropsychological Testing to Improve Patient Care and Outcomes* - 2010 AES Annual Meeting - December 5, 2010 - 2.5 credits

Merritt-Putnam Symposium *Consequences of Epilepsy Through the Ages: When Is the Die Cast?* - 2010 AES Annual Meeting - December 6, 2010 - 2.75 credits

Pediatric State of the Art Symposium *Identifying and Managing the Comorbidities of Pediatric Epilepsy* - 2010 AES Annual Meeting - December 6, 2010 - 2 credits

Plenary II *Neurostimulation in the Treatment of Epilepsy: The Road Traveled and the Road Ahead* - 2010 AES Annual Meeting - December 7, 2010 - 1.5 credits

ILAE Symposium *Epilepsy Treatment in North America and Around The World: Can We Learn From Each Other?* - 2010 AES Annual Meeting - December 7, 2010 - 1.5 credits

Additional local hours see CME folder

## 2011 – 27.5 hours

### American Epilepsy Society Annual Meeting 2011

AES Epilepsy Specialist Symposium *Bridging the Gap* - 2011 AES Annual Meeting – December 2, 2011 - 3 credits

Annual Fundamentals of Epilepsy *Basic Diagnosis of Epilepsy* - 2011 AES Annual Meeting - December 2, 2011 - 2.5 credits

Hot Topics Symposium *Semiology, Functional Connectivity and MRI* - 2011 AES Annual Meeting - December 2, 2011 - 2.5 credits

Presidential Symposium *AES 75 Years: Then, Now and the Future* - 2011 AES Annual Meeting - December 3, 2011 - 2 credits

AET Symposium *AET in the 21st Century: Origins and Future Directions* – 2011 AES Annual Meeting - December 3, 2011 - 2.5 credits

Annual Course *Overcoming Barriers to Successful Epilepsy Management* – 2011 AES Annual Meeting - December 4, 2011 - 6 credits

Professionals in Epilepsy Care Symposium *New Evidence in Psychosocial Interventions for Managing Epilepsy* - 2011 AES Annual Meeting - December 4, 2011 - 2.5 credits

Merritt-Putnam Symposium *Sleep and Epilepsy* - 2011 AES Annual Meeting - December 5, 2011 - 3 credits

Pediatric State of the Art Symposium *EEG Monitoring in the Pediatric Intensive Care Unit* - 2011 AES Annual Meeting - December 5, 2011 - 2 credits

Scientific Plenary *EEG and MEG* - 2011 AES Annual Meeting - December 6, 2011 - 1.5 credits

**2012 – 28.25 hours :**

American Epilepsy Society Annual Meeting 2012 Annual Fundamentals of Epilepsy. The American Epilepsy 28.25 AMA PRA Category 1 credits:

Epilepsy Specialist Symposium *Algorithms in the Diagnosis and Treatment* - November 30, 2012 - 3 credits

Annual Fundamentals of Epilepsy Symposium *Optimal Use of the Newest* - November 30, 2012 - 2.5 credits

Hot Topics Symposium *Modulators of Epilepsy: The Influence of Lifestyle and Environmental Factors* - November 30, 2012 - 2.5 credits

Presidential Symposium *IOM Report 2012: Epilepsy Across the Spectrum:* - December 1, 2012 - 2.25 credits

Professionals in Epilepsy Care Symposium *Current Issues in Clinical Practice: Transitioning from Adolescent to Adult Epilepsy Care* - December 1, 2012 - 2.5 credits

Antiepileptic Therapy Symposium *Management of Refractory Status Epilepticus* - December 1, 2012 - 2.5 credits

Annual Course *Managing Common Complex Symptomatic Epilepsies: Tumors and Trauma* - December 2, 2012 - 6 credits

Merritt-Putnam Symposium *From Molecules to Cells, Networks and Seizures: How Does a Gene Cause Epilepsy?* - December 3, 2012 - 3 credits

Pediatric State of the Art Symposium *Prolonged Febrile Seizures and TLE*: - December 3, 2012 - 2.5 credits

Scientific Symposium *Stereotactic Electroencephalography (sEEG) in the* - December 4, 2012 - 1.5 credits

**2013 – 35 hours :**

Huntington Hospital Physician Leadership Orientation. The Langham Hotel, Pasadena, California. 25 January, 2012. AMA PRA Category 1 – 5 credits.

American Epilepsy Society Annual Meeting 2013 Annual Fundamentals of Epilepsy. The American Epilepsy Society, Washington, DC. 3 Dec to 7 Dec 2013. AMA PRA Category 1 credits - 35.

**2014 – 28 hours :**

American Epilepsy Society Annual Meeting 2014 Annual Fundamentals of Epilepsy. The American Epilepsy Society Seattle, Washington. 3 Dec to 7 Dec 2014. AMA PRA Category 1 credits - 28.