

Curriculum Vitae

PETER ARTHUR CALABRESI

BUSINESS ADDRESS

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PERSONAL

Born: October 13, 1962; New Haven, Connecticut
Nationality: United States Citizen
Marital Status: Married

EXPERIENCE

2011-present Director, Division of Neuroimmunology and Neuro-infectious diseases, Johns Hopkins School of Medicine

2008-present Professor of Neurology and Director of the MS Center, Johns Hopkins School of Medicine

2005-2011 Co-Director, Division of Neuroimmunology and Neuro-infectious diseases, Johns Hopkins School of Medicine

2003-2008 Associate Professor of Neurology and Director of the MS Center, Johns Hopkins School of Medicine

2003-present Special Volunteer, Neuroimmunology Branch, NINDS, NIH

2002-2003 Associate Professor of Microbiology and Immunology (secondary appointment) University of Maryland School of Medicine

2001-2003 Associate Professor of Neurology, University of Maryland School of Medicine

2000- 2001 Assistant Professor of Neurology, University of Maryland School of Medicine

1997 - 2000 Director, MS Program RI Hospital

Assistant Professor of Neurology
Brown University Medical School

1993 – 1996 Clinical Associate & Research Fellow, Neuroimmunology Branch
National Institutes of Health, Bethesda, MD

EDUCATION

1992 – 1993 Chief Resident in Neurology
Strong Memorial Hospital, Rochester, NY

1990 – 1992 Neurology Resident
Strong Memorial Hospital

1989 – 1990 Medical Resident
Strong Memorial Hospital

1988 – 1989 Medical Intern
Strong Memorial Hospital

1984 – 1988 Brown University Medical School, Providence, RI
M.D.

1980 – 1984 Yale University, New Haven, CT
B.S. Biology

BOARD CERTIFICATION

May 1995 American Board of Psychiatry and Neurology
(Renewed 2005) Specialty: Neurology

MEDICAL LICENSURE

1989 – 1998 New York (inactive)

1997 -2001 Rhode Island #9361 (inactive)

2000 - present Maryland D56151

MILITARY SERVICE

1993 – 1996 Public Health Service
Rank: Lieutenant Commander

COMMITTEES & MEMBERSHIPS IN SOCIETIES

1991-present American Academy of Neurology- Active Member

1997-present National Multiple Sclerosis Society (NMSS)

1997-1999 Professional Advisory Committee & Board of Overseers, RI Chapter, NMSS

1997-2000 Committee on the Protection of Human Subjects, RI Hospital

1999-present American Association of Immunologists

2000-2003 Committee for Continuing Medical Education, U of Maryland

2001-2003 National MS Society, Fellowship Committee

2002-present National MS Society, Clinical Care Committee

2002-2005 Data & Safety Monitoring Committee, Immune Tolerance Network, NIAID, NIH

2003-present National MS Society, Maryland Chapter, Clinical Advisory Committee

2004-2007 National MS Society, member research study section B

2004-present National MS Society, Clinical Trials Committee

2004-present American Neurological Association-Active Member

2004-present Board of Trustees, Maryland Chapter, NMSS

2005-present	Editorial Board, Neurology
2006-2010	CNBT NIH Study section member
2007-present	Steering Committee, ACTRIMS
2008-present	Fellow American Academy of Neurology
2011	Advisory Board, NMSS Fast Forward, Steering Committee
2011-present	Chair, NMSS Study Section D

JOURNAL REVIEWER

Neurology (Editorial Board), New England Journal of Medicine, Lancet, Lancet Neurology, Brain, PNAS, Annals of Neurology, Journal of Immunology, Journal of Neuroscience, Trends in Immunology, Journal of Neuroimmunology, Journal of Neurovirology, Archives of Neurology, Journal of Neurological Sciences, Multiple Sclerosis, Journal of Neuroinflammation, PLoS One, IOVS, Journal of Neurology

PUBLICATIONS (peer reviewed original work)

1. Rafal RD, **Calabresi PA**, Brennan CW, Sciolto TK. (1989) Saccade preparation inhibits reorienting to recently attended locations. *J Exp. Psych* 15(4):673-85.
2. **Calabresi PA**, Silvestri G, DiMauro S, Griggs RC. (1994) Ekbom's syndrome: lipomas, ataxia, neuropathy and MERRF. *Muscle and Nerve* 17:943-45.
3. **Calabresi PA**, Powers J. (1994) An ultrastructural analysis of human post-infectious (allergic) encephalomyelitis. *Acta Neuropathol* 87:541-44.
4. Hemmer B, Vergelli M, **Calabresi PA**, Huang T, McFarland H, Martin R. (1996) Cytokine phenotype of human autoreactive T cell clones specific for the immunodominant myelin basic protein peptide (83-89). *Journal of Neurol. Sci.* 45:852-62.
5. McFarland HF, Stone LA, **Calabresi PA**, Maloni H, Bash CN, Frank JA. [1996]. MRI studies of multiple sclerosis: Implications for the natural history of the disease and for monitoring effectiveness of experimental therapies. *Multiple Sclerosis*, 2:198-205.
6. **Calabresi PA**, Stone LA, Bash CN, Frank JA, McFarland HF. (1997) Interferon beta results in immediate reduction of contrast-enhanced MRI lesions in multiple sclerosis patients followed by weekly MRI. *Neurology*. 48:1446-1448.
7. **Calabresi PA**, Tranquill, LR, Dambrosia J, Stone LA, Maloni H, Bash CN, Frank JA, McFarland HF. (1997) Increases in soluble VCAM-1 correlate with a decrease in MRI lesions in multiple sclerosis treated with interferon β -1b. *Annals of Neurology*. 41: 669-674.
8. Stone LA, Frank JA, Albert PS, Bash CN, **Calabresi PA**, Maloni H, McFarland HF. (1997) Characterization of MRI response to treatment with interferon beta 1b: Contrast enhancing MRI lesion frequency as a primary outcome measure. *Neurology*. 49:862-869.
9. **Calabresi PA**, Pelfrey CM, Tranquill LR, McFarland HF. (1997) VLA-4 Expression on Peripheral Blood Lymphocytes is Downregulated after Treatment of Multiple Sclerosis with Interferon Beta. *Neurology*. 49:1111-1116.

10. Soldan, SS, Berti R, Salem N, Secchiero P, **Calabresi PA**, Maloni H, McFarland HF, Lin HC, Patnaik M, Jacobson S. (1997) Association of Human Herpes Virus 6 (HHV-6) with Multiple Sclerosis: Increased IgM Response to HHV-6 Early Antigen and Detection of Serum HHV-6 DNA. *Nature Medicine* 3 (12):1394-1397.
11. Mendez E, Kawanishi T, Clemens K, Siomi H, **Calabresi PA**, Brady J, Jacobson S. (1997) Astrocyte-Specific Expression of HTLV-1 Tax: Induction of TNF- α Susceptibility to Lysis by CD8+ HTLV-1 Specific Cytotoxic T Cells. *Journal of Virology* 71 (12):9143-9149.
12. McCutcheon M, Wehner N, Wensky A, Kushner M, Doan S, Hsiao L, **Calabresi PA**, Ha T, Tran TV, Tate KM, Winkelhake J, Spack EG. (1997) A sensitive ELISPOT assay to detect low-frequency human T lymphocytes. *Journal of Immunological Methods* 210 (2):149-166.
13. Zipp F, Weller M, **Calabresi PA**, Frank JA, Bash CN, Dichgans J, McFarland HF, Martin R. (1998) Increased serum levels of soluble CD95 (APO-1/Fas) in relapsing-remitting multiple sclerosis. *Annals of Neurology* 43:116-120.
14. **Calabresi PA**, Fields NS, Farnon EC, Frank JA, Bash CN, Kawanashi T, Maloni H, Jacobson S, McFarland HF. (1998) ELI-spot of Th-1 cytokine secreting PBMC's in multiple sclerosis: correlation with MRI lesions. *Journal of Neuroimmunology* 85(2): 212-219.
15. **Calabresi PA**, Fields NS, Maloni HW, Hanham A, Carlino J, Moore MS, Levin MC, Dhib-Jalbut S, Tranquill LR, Austin H, McFarland HF, Racke MK. (1998) Phase 1 trial of transforming growth factor beta 2 in chronic progressive MS. *Neurology* 51:1:289-292.
16. **Calabresi PA**, Tranquill LR, Cowan, EP, Maloni, H, McFarland, HF. (1998) Cytokine Gene Expression in cells derived from CSF of Multiple Sclerosis Patients. *Journal of Neuroimmunology* 89:198-205.
17. **Calabresi PA**, Martin R, Jacobson S. (1999) Chemokines in Chronic Progressive Neurological Diseases: HTLV-1 Associated Myelopathy and Multiple Sclerosis. *Journal of Neurovirology* 5:102-108.
18. Kappos L, Comi G, Panitch H, Oger J, Antel J, Conlon P, Steinman L, Comi G, Kappos L, Oger J, Panitch H, Rae-Grant A, Castaldo J, Eckert N, Guarnaccia JB, Mills P, Johnson G, **Calabresi PA**, Pozzilli C, Bastianello S, Giugni E, Witjas T, Cozzone P, Pelletier J, Pohlau D, Przuntek H, Hoffmann V, Bever C Jr, Katz E, Clanet M, Berry I, Brassat D, Brunet I, Edan G, Duquette P, Radue EW, Schott D, Lienert C, Taksouli A, Rodegher M, Filippi M, Evans A, Bourgouin P, Zijdenbos A, Salem S, Ling N, Alleva D, Johnson E, Gaur A, Crowe P, Liu XJ, (2000) Induction of a non-encephalitogenic type 2 T helper-cell autoimmune response in multiple sclerosis after administration of an altered peptide ligand in a placebo-controlled, randomized phase II trial. *Nature Medicine* 6 (10):1176-1182.
19. **Calabresi PA**, Prat A, Rollins J, Antel J. (2001) T Cells Conditioned with Interferon β Induce VCAM Expression on Human Brain Endothelial Cells. *J Neuroimmunol* 115(1-2):161-7.
20. **Calabresi PA**, Wilterdink JL, Rogg J, Mills P, Webb A, and Whartenby KA. (2002) An open label trial of oral methotrexate and interferon β combination therapy in multiple sclerosis. *Neurology* 58(2): 314-7.

21. **Calabresi PA**, Yun SH, and Allie R. [2002] Chemokine receptor expression on MBP reactive T cells: CXCR6 is a marker of IFN γ producing effector cells. *Journal of Neuroimmunology*. 127: 96-105.
22. Sriram S, Yao SY, Stratton C, **Calabresi PA**, Mitchell W, Ikejima H, Yamamoto Y. [2002] Comparative Study of the Presence of Chlamydia pneumoniae in Cerebrospinal Fluid of Patients with Clinically Definite and Monosymptomatic Multiple Sclerosis. *Clin Diagn Lab Immunol*. Nov; 9(6):1332-1337.
23. **Calabresi PA**, Austin, H, Racke, MK, Goodman A, Choyke P, Maloni H, and McFarland HF. [2002] Impaired Renal Function in Progressive Multiple Sclerosis. *Neurology*, 59: 1799-1801.
24. **Calabresi PA**, Allie R, Mullen KM, Yun SH, Georgantas RW, and Whartenby KA. [2003]. Kinetics of CCR7 expression differ between immediate effector and chronic memory states of Th1 and Th2 cells. *Journal of Neuroimmunology*, 139: 59-65.
25. Wulff H*, **Calabresi PA*** (*co 1st authors), Allie R, Yun SH, Pennington M, Beeton C, and Chandy KG. [2003] Myelin-reactive effector memory T cell K⁺ channels: a target for multiple sclerosis therapy. *Journal of Clinical Investigation*, 111:1703-1713.
26. Frohman EM, Goodin DS, **Calabresi PA**, Corboy JR, Coyle PK, Filippi M, Frank JA, Galetta SL, Grossman RI, Hawker K, Kachuck NJ, Levin MC, Phillips JT, Racke MK, Rivera VM, Stuart WH. [2003] The utility of MRI in suspected MS: Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. *Neurology*, Sep 9;61(5):602-11.
27. Frank JA, Richert N, Bash C, Stone LA, **Calabresi PA**, Lewis B, Stone R, Howard T, and McFarland HF. [2004] Interferon B-1b slows progression of atrophy in RRMS: 3 Year Follow-up in NAb- and NAb+ patients. *Neurology*, Mar 9;62(5):719-25.
28. Vennekamp J, Wulff H, Beeton C, **Calabresi PA**, Grissmer S, Hansel W, Chandy KG. [2004] Kv1.3-blocking 5-phenylalkoxypsoralens: a new class of immunomodulators. *Mol Pharmacol*., Jun;65(6):1364-74.
29. Allie R, Hu L, Mullen, KM, Dhib-Jalbut, S, and **Calabresi PA**. [2005]. Glatiramer acetate therapy mediates bystander modulation of chemokine receptor expression on peripheral blood T Lymphocytes. *Arch Neurol*. 2005 Jun;62(6):889-94.
30. Pulicken M, Bash CN, Costello K, Said A, Cuffari C, Wilterdink JL, Rogg JM; Mills P; and **Calabresi PA**. [2005] Optimization of the safety and efficacy of interferon- β 1b and azathioprine combination therapy in multiple sclerosis. *Multiple Sclerosis*; 11(2): 169-174.
31. Graber J, Zhan M, Ford D, Kursch F, Francis G, Bever C, Panitch H, **Calabresi PA**, Dhib-Jalbut J. [2005] Interferon- β -1a induces increases in vascular cell adhesion molecule; implications for its mode of action in multiple sclerosis. *Journal of Neuroimmunology*; 161(1-2):169-76.
32. Beeton C, Pennington M, Wulff H, Singh S, Nugent D, Crossley G, Khayton I, **Calabresi PA**, Chen C-Y, Gutman G, Chandy G. [2005] Targeting effector memory T cells with a selective peptide

- inhibitor of Kv1.3 channels for therapy of autoimmune diseases. *Mol Pharmacol.*, Apr; 67(4):1369-81.
33. Rus H, Pardo CA, Hu L, Darrah E, Cudrici C, Niculescu T, Niculescu F, Mullen KM, Allie R, Guo L, Wulff H, Beeton C, Judge SIV, Kerr DA, Knaus H-G, Chandy KG, and **Calabresi PA**. [2005] The voltage-gated potassium channel Kv1.3 is highly expressed on inflammatory infiltrates in multiple sclerosis brain. *Proc Natl Acad Sci U S A.* Aug 2;102(31):11094-9.
 34. Kaplin AI, Deshpande DM, Scott E, Krishnan C, Carmen JS, Shats I, Martinez T, Drummond J, Dike S, Pletnikov M, Keswani SC, Moran TH, Pardo CA, **Calabresi PA**, Kerr DA. [2005] IL-6 induces regionally selective spinal cord injury in patients with the neuroinflammatory disorder transverse myelitis. *J Clin Invest.* 2005 Oct 1;115(10):2731-2741.
 35. Whartenby KA, **Calabresi PA**, McCadden E, Nguyen B, Kardian D, Wang T, Mosse C, Pardoll DM, Small D [2005]. Inhibition of FLT3 signaling targets dendritic cells to ameliorate autoimmune disease. *Proc Natl Acad Sci U S A.* 102(46):16741-6.
 36. Fisher JB, Jacobs DA, Markowitz CE, Galetta SL, Volpe NJ, Nano-Schiavi ML, Baier ML, Frohman EM, Winslow H, Frohman TC, **Calabresi PA**, Maguire MG, Cutter GR, Balcer LJ. [2006] Relation of Visual Function to Retinal Nerve Fiber Layer Thickness in Multiple Sclerosis. *Ophthalmology*; Feb;113(2):324-32.
 37. Irani DN, Anderson C, Gundry R, Cotter R, Moore S, Kerr DA, McArthur JC, Sacktor N, Pardo CA, Jones M, **Calabresi PA**, Nath A. [2006] Cleavage of cystatin C in the cerebrospinal fluid of patients with multiple sclerosis. *Ann Neurol.* 2006 Jan 25; 59(2):237-247.
 38. Rudick RA, Stuart WH, **Calabresi PA**, Confavreux C, Galetta SL, Radue E-W, Lublin FD, Weinstock-Guttman B, Wynn DR, Lynn F, Panzara MA, Sandrock AW for the SENTINEL Investigators. [2006] A Randomized Placebo-Controlled Trial of Natalizumab in Combination With Interferon beta-1a for Relapsing Multiple Sclerosis. *N Engl J Med.* Mar 2; 354(9):911-23.
 39. Wang T, Allie R, Conant K, Haughey N, Turchan-Chelowo J, Hahn K, Rosen A, Steiner S, Keswani S, Jones M, **Calabresi PA**, and Nath A. [2006] Granzyme B mediates neurotoxicity through a G-protein coupled receptor. *FASEB J.* Apr 24.
 40. Nauroth J., Graber J. Yao K, Jacobson S, **Calabresi PA**. [2006] Memory lineage relationships in HTLV-1-specific CD8+ cytotoxic T cells. *Journal of Neuroimmunology*, 176(1-2):115-24.
 41. Mullen KM, Rozycka M, Rus H, Hu L, Cudrici C, Zafranskaia E, Pennington MW, Johns DC, Judge SIV, **Calabresi PA**. [2006] Potassium channels $K_v1.3$ & $K_v1.5$ are functionally expressed on dendritic cells. *Ann Neurol.*60(1):118-127
 42. Pulicken M, Koteish A, DeBusk K, **Calabresi PA**. [2006] Unmasking of autoimmune hepatitis in a patient with MS following interferon beta therapy. *Neurology.* 27;66(12):1954-5.
 43. Smith SA, Farrell JA, Jones CK, Reich DS, **Calabresi PA**, van Zijl PC. Pulsed magnetization transfer imaging with body coil transmission at 3 Tesla: feasibility and application. *Magn Reson Med.* 2006 Oct;56(4):866-75.

44. Reich DS, Smith SA, Jones C, Zackowski K, van Zijl PC, **Calabresi PA**, Mori S. [2006] Asymmetry and variability in diffusion tensor imaging of the corticospinal tract at 3 Tesla with applications to multiple sclerosis. *American Journal of Neuroradiology*, 2006 Nov-Dec;27(10):2168-78.
45. Beeton C., Wulff H., Standifer N.E., Azam P., Mullen K.M., Pennington M.W., Kolski-Andreaco A., Wei E., Grino A., Counts D.R., Wang P.H., LeeHealey C.J., Andrews B., Sankaranarayanan A., Homerick D., Roeck W.W., Tehranzadeh J., Stanhope K.L., Zimin P., Havel P.J., Griffey S., Knaus H.G., Nepom G.T., Gutman G.A., **Calabresi P.A.**, Chandy K.G. [2006] Kv1.3 channels are a therapeutic target for T cell mediated autoimmune diseases. *Proc Natl Acad Sci U S A*. 2006 Nov 14;103(46):17414-9.
46. Balcer LJ, Galetta SL, **Calabresi PA**, Confavreux C, Giovannoni G, Havrdova E, Hutchinson M, Kappos L, Lublin FD, Miller DH, O'Connor PW, Phillips JT, Polman CH, Radue E-W, Rudick RA, Stuart WH, Wajgt A, Weinstock-Guttman B, Wynn DR, Lynn F and Panzara MA for the AFFIRM and SENTINEL Investigators. [2007]. Natalizumab reduces visual loss in patients with relapsing multiple sclerosis. *Neurology*. 2007; 68 (16):1299-1304.
47. Greenberg BM, Thomas KP, Krishnan C, **Calabresi PA**, Kaplin AI, Kerr DA. [2007] Idiopathic Transverse Myelitis: corticosteroids, plasma exchange or cyclophosphamide. *Neurology*. 68: 1614-1617.
48. Jones MV and **Calabresi PA**. [2007] Agar-gelatin for embedding tissues prior to paraffin processing. *Biotechniques* 42: 569-570.
49. DeBoy CA, Zhang J, Jones M, Reich DS, Dike S, Shats I, Rothstein B, Mori S, Nguyen T, Miller RH, Griffin J, Kerr DA, and **Calabresi PA**. [2007] High Resolution Diffusion Tensor Imaging of Axonal Damage in Rat Spinal Cord. *Brain*. Aug;130(Pt 8):2199-210.
50. Cudrici C., Ito T, Zafranskaia E, Niculescu F, Mullen KM, Vlaicu S, Judge SIV, **Calabresi PA**, and Rus H. Dendritic Cells are abundant in non-lesional grey matter in multiple sclerosis [2007]. *Exp Mol Pathol*. Oct;83(2):198-206.
51. Gordon-Lipkin E, Chodkowski BA, Reich DS, Smith SA, Pulicken M, Balcer LJ, Frohman EM, Cutter GR, and **Calabresi PA**. [2007] Retinal nerve fiber layer is associated with brain atrophy in multiple sclerosis. *Neurology*. Oct 16;69(16):1603-9.
52. **Calabresi PA**, Giovannoni G, Confavreux C, Galetta SL, Havrdova E, Hutchinson M, Kappos L, Miller DH, O'Connor PW, Phillips JT, Polman CH, Radue E-W, Rudick RA, Stuart WH, Lublin FD, Wajgt A, Weinstock-Guttman B, Wynn DR, and Lynn F, and Panzara MA for the AFFIRM and SENTINEL Investigators. [2007]. The Incidence and Significance of Anti-Natalizumab Antibodies: Results From AFFIRM and SENTINEL. *Neurology*. Oct 2;69(14):1391-403.
53. Hu L, Pennington M, Jiang Q, Whartenby KA, **Calabresi PA** [2007] Characterization of the Functional Properties of the Voltage-Gated Potassium Channel Kv1.3 in Human CD4+ T Lymphocytes. *Journal of Immunology*; Oct 1;179(7):4563-70.
54. Wu GF, Schwartz ED, Lei T, Souza A, Mishra S, Jacobs DA, Markowitz CE, Galetta SL, Nano-Schiavi ML, Desiderio LM, Cutter GR, **Calabresi PA**, Udupa JK, Balcer LJ. Relation of vision to global and regional brain MRI in multiple sclerosis. [2007] *Neurology*. Dec 4;69(23):2128-35.

55. Rudick RA, Miller D, Hass S, Hutchinson M, **Calabresi PA**, Confavreux C, Galetta SL, Giovannoni G, Havrdova E, Kappos L, Lublin FD, Miller DH, O'connor PW, Phillips JT, Polman CH, Radue EW, Stuart WH, Wajgt A, Weinstock-Guttman B, Wynn DR, Lynn F, Panzara MA; AFFIRM and SENTINEL Investigators. [2007] Health-related quality of life in multiple sclerosis: effects of natalizumab. *Ann Neurol.* 2007 Oct;62(4):335-46.
56. Reich DS, Smith SA, Zackowski KM, Gordon-Lipkin EM, Jones CK, Farrell JA, Mori S, van Zijl, PC, **Calabresi PA**; Multiparametric analysis of the corticospinal tract in MS. [2007]. *Neuroimage.* 2007 Nov 1;38(2):271-9.
57. Reich DS, Zackowski KM, Gordon-Lipkin EM, Smith SA, Chodkowski BA, Cutter GR, **Calabresi PA** [2007] Corticospinal Tract Abnormalities are Associated with Weakness in Multiple Sclerosis. *Am J Neuroradiol.* 2008 Feb;29(2):333-9.
58. Hua K, Zhang J, Wakana S, Jiang H, Li X, Reich DS, **Calabresi PA**, Pekar JJ, van Zijl PC, Mori S. Tract probability maps in stereotaxic spaces: Analyses of white matter anatomy and tract-specific quantification. 2008; *Neuroimage* Jan 1;39(1):336-47.
59. Pulicken M, Gordon-Lipkin E, Balcer LJ, Frohman E, Cutter GR, and **Calabresi PA**. Optical Coherence Tomography and Disease Subtype in Multiple Sclerosis. *Neurology.* 2007 Nov 27;69(22):2085-2092.
60. Frohman EM, Costello F, Stüve O, **Calabresi PA**, Miller DH, Hickman SJ, Sergott R, Conger A, Salter A, Krumwiede KH, Frohman TC, Balcer L, Zivadinov R. Modeling axonal degeneration within the anterior visual system: implications for demonstrating neuroprotection in multiple sclerosis. *Arch Neurol.* 2008 Jan;65(1):26-35
61. Cohen J, **Calabresi PA**, Chakraborty S, Edwards K, Eickenhorst T, Felton III WL, Fisher E, Fox RJ, Goodman AD, Hara-Cleave C, Hutton GJ, Imrey PB, Ivancic DM, Mandell B, Perryman JE, Scott TF, Skaramagas T, and Zhang H, for the ACT Investigators. Avonex combination trial in relapsing remitting multiple sclerosis: rationale, design and baseline data. *Mult Scler.* 2008 Apr;14(3):370-82. Epub 2008 Jan 21.
62. Milward E, Kim KJ, Szklarczyk A, Nguyen T, Melli G, Nayak M, Deshpande D, Fitzsimmons C, Hoke A, Kerr DA, **Calabresi PA**, and Conant K. Cleavage of myelin associated glycoprotein by matrix metalloproteinases. 2008; *J Neuroimmunol.* Jan;193(1-2):140-8.
63. Bar-Or A, **Calabresi PA**, Arnold D, Markowitz C, Shafer S, Kasper LH, Waubant E, Gazda S, Fox RJ, Panzara M, Sarkar N, Agarwal S, and Smith CH. Rituximab in Relapsing-Remitting Multiple Sclerosis: A 72-week Open-Label, Phase I Trial. *Ann Neurol.* 2008 Mar;63(3):395-400.
64. Graber JJ, Allie SR, Mullen KM, Jones MV, Wong T, Krishnan C, Kaplin A, Nath A, Kerr DA, and **Calabresi PA**. Interleukin-17 in transverse myelitis and multiple sclerosis. *J Neuroimmunol.* 2008 May;196(1-2):124-32. Epub 2008 Apr 16.
65. Farrell JA, Smith SA, Gordon-Lipkin EM, Reich DS, **Calabresi PA**, van Zijl PC. High b-value q-space diffusion-weighted MRI of the human cervical spinal cord in vivo: feasibility and application to multiple sclerosis. *Magn Reson Med.* 2008 May;59(5):1079-89.

66. Jones MV, Nguyen T, DeBoy CA, Griffin JW, Whartenby KA, Kerr DA, **Calabresi PA**. Behavioral and Pathological Outcomes in a Murine Model of Multiple Sclerosis. 2008; *J Neuroimmunol*. Aug 13;199(1-2):83-93.
67. Zaveri MS, Conger A, Salter A, Frohman TC, Galetta SL, Markowitz CE, Jacobs DA, Cutter GR, Ying GS, Maguire MG, **Calabresi PA**, Balcer LJ, Frohman EM. Retinal imaging by laser polarimetry and optical coherence tomography evidence of axonal degeneration in multiple sclerosis. 2008, *Archives of Neurology*; Jul;65(7):924-8.
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69. Cettomai D, Pulicken M, Gordon-Lipkin E, Salter A, Frohman TC, Conger A, Xiao Zhang BA, Cutter G, Balcer L, Frohman EM, **Calabresi PA**. Reproducibility of Optical Coherence Tomography in Multiple Sclerosis. *Arch Neurol*. 2008 Sep;65(9):1218-22.
70. Wheeler D, Bandaru VV, **Calabresi PA**, Nath A, Haughey NJ. A defect of sphingolipid metabolism modifies the properties of normal appearing white matter in multiple sclerosis. 2008. *Brain*. 2008 Nov;131(Pt 11):3092-102
71. Kaplin A, Carroll KA, Cheng J, Allie R, Lyketsos CG, **Calabresi PA**, Rosenberg PB. IL-6 release by LPS-stimulated peripheral blood mononuclear cells as a potential biomarker in Alzheimer's disease. *Int Psychogeriatr*. 2008 Dec 1:1-2.
72. Salter A, Conger A, Frohman T, Zivadinov R, Eggenberger E, **Calabresi PA**, Cutter G, Balcer L, Frohman E. Retinal architecture predicts pupillary reflex metrics in MS. *Mult Scler*. 2008 Dec 17. [Epub ahead of print]
73. Nguyen T, Mehta NR, Conant K, Kim KJ, Jones M, **Calabresi PA**, Melli G, Hoke A, Schnaar RL, Ming GL, Song H, Keswani SC, Griffin JW. Axonal protective effects of the myelin-associated glycoprotein. *J Neurosci*. 2009 Jan 21;29(3):630-7.
74. Cohen JA, Imrey PB, **Calabresi PA**, Edwards KR, Eickenhorst T, Felton WL 3rd, Fisher E, Fox RJ, Goodman AD, Hara-Cleaver C, Hutton GJ, Mandell BF, Scott TF, Zhang H, Apperson-Hansen C, Beck GJ, Houghtaling PL, Karafa MT, Stadtler M; ACT Investigators. Results of the Avonex Combination Trial (ACT) in relapsing-remitting MS. *Neurology*. 2009 Feb 10;72(6):535-41.
75. Zhang J, Jones M, DeBoy CA, Reich DS, Farrell JA, Hoffman PN, Griffin JW, Sheikh KA, Miller MI, Mori S, **Calabresi PA**. Diffusion tensor magnetic resonance imaging of Wallerian degeneration in rat spinal cord after dorsal root axotomy. *J Neurosci*. 2009 Mar 11;29(10):3160-71.
76. Zackowski KA, Smith SA, Reich DS, Gordon-Lipkin E, Chodkowski BA, Sambandan DR, Shteyman M, Bastian AJ, van Zijl PC, **Calabresi PA**. Sensorimotor dysfunction in multiple sclerosis and column-specific magnetization transfer-imaging abnormalities in the spinal cord. *Brain*. 2009 May;132(Pt 5):1200-9.

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CHAPTERS, REVIEWS, AND EDITORIALS/COMMENTARIES (peer reviewed)

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29. Harrison DM, **Calabresi PA**. Promising treatments of tomorrow for multiple sclerosis. *Ann Indian Acad Neurol*. 2009 Oct;12(4):283-90.
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31. **Calabresi PA**, Balcer LJ, Frohman EM. Retinal pathology in multiple sclerosis: insight into the mechanisms of neuronal pathology. *Brain*. 2010 Jun;133(Pt 6):1575-7.
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34. Nath A and **Calabresi PA**; [2011] *Neuroprotection in Multiple Sclerosis*, Chapter in Multiple Sclerosis Therapeutics, Rudick and Cohen (Eds.), Martin Dunitz.
35. **Calabresi PA**; [2011] *Multiple Sclerosis and Other Demyelinating Diseases*. Chapter in Cecil's Textbook of Medicine. LWW, Baltimore, Md.
36. **Calabresi PA**. Inflammation in multiple sclerosis – sorting out the gray matter. *N Engl J Med*. 2011 Dec 8;365(23):2231-3.
37. Saidha S, Eckstein C, **Calabresi PA**. New and emerging disease modifying therapies for multiple sclerosis. *Ann NY Acad Sci*. 2012 Jan; 1247:117-37.
38. Kieseier BC, **Calabresi PA**. PEGylation of interferon- β -1a: a promising strategy in multiple sclerosis. *CNS Drugs*. 2012 Mar 1;26(3):205-14.
39. **Calabresi PA**, Bohnen NI. Can PET imaging tell us what's the matter with the gray matter in multiple sclerosis? *Neurology*. 2012 Aug 7;79(6):496-7. Epub 2012 Jul 3. PMID: 22764259

INVITED LECTURES

- 5/2/97 The role of cytokines and adhesion molecules in the immunopathogenesis of multiple sclerosis. Neurology Grand Rounds. Montreal Neurological Institute and Hospital.
- 5/21/97 Controlling Spasticity. Presented by: Rhode Island Chapter, National Multiple Sclerosis Society, Providence, RI.
- 9/20/97 The Clinical Importance of MRI. MS Wellness Day, St. Joseph's Hospital, Baltimore, MD.
- 11/19/97 The role of cytokines and adhesion molecules in the immunopathogenesis of multiple sclerosis. Neurology Grand Rounds. Brigham & Women's Hospital, Boston, MA.
- 1/28/98 The role of cytokines and adhesion molecules in the immunopathogenesis of multiple sclerosis. Neurology Grand Rounds. Henry Ford Hospital, Detroit, MI.
- 3/13/98 Practical applications of MRI in multiple sclerosis. Philadelphia, PA.
- 5/16/98 Clinical and imaging measures of disease activity & progression. Multiple Sclerosis: Clinical Issues and Decisions Symposium, Chicago, IL.
- 11/04/98 Chemokine Receptors in Multiple Sclerosis, Neurology Grand Rounds. Washington University School of Medicine, St. Louis, MO.
- 11/21/98 Changes in Adhesion Molecules Associated with IFN β Therapy in Multiple Sclerosis, Use of Imaging and Other Monitoring Measurements in Multiple Sclerosis Treatment Strategies, Santa Fe, NM.
- 12/11/98 Multiple Sclerosis: pitfalls in the diagnosis of a common disorder. Neurology for the Primary Care Provider, University of Rochester Medical Center, Rochester, NY.
- 4/29/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, Rush Presbyterian St. Luke's Medical Center, Chicago, IL.
- 4/30/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, University of Iowa, Iowa City, IA.
- 5/14/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, Emory University, Atlanta, GA.
- 10/20/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, University of Maryland, Baltimore, MD.
- 10/21/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, Johns Hopkins University, Baltimore, MD.

- 11/17/99 Clinical Implications of Recent MS Research, Neurology Grand Rounds, University Texas SW Medical Branch, Dallas, TX.
- 5/20/00 Keynote Speaker for National MS Society Long Island Chapter Annual Meeting
- 6/5/00 Immunopathogenesis and Genetics of Multiple Sclerosis, Williamsburg, VA
- 6/25/00 A Pilot Trial of Combination Therapy with Avonex and Oral Methotrexate in Relapsing and Remitting Multiple Sclerosis. Presented at The Consortium of Multiple Sclerosis Centers, Halifax, Nova Scotia.
- 8/25/00 Multiple Sclerosis: Clinical Issues and Decisions Symposium, Newport, RI
Co-Chairman for program.
- 11/8/00 Keynote Speaker for National MS Society Delaware Chapter Annual Meeting
- 11/18/00 Treatment of Secondary Progressive Multiple Sclerosis, University of Maryland Symposium on the Treatment of Neuroimmunological Disorders.
- 8/23/01 Multiple Sclerosis: Clinical Issues and Decisions Symposium, Boston, MA
Co-Chairman for program.
- 9/18/02 Adhesion Molecule Targets in Multiple Sclerosis, Baltimore, Md. ACTRIMS/ECTRIMS 2002.
- 9/20/02 Kv1.3 is a Unique Functional Marker of Effector Memory Cells in Multiple Sclerosis, Baltimore, Md. ACTRIMS/ECTRIMS 2002.
- 9/17/03 Kv1.3 Expression in MS brain, platform presentation at ECTRIMS, Milan Italy, 2003.
- 12/6/03 Neurodegeneration in MS Symposium, NYC, Co-Director.
- 8/19/04 Rare Neuroimmunological Disorders Symposium, Baltimore, Md, Co-Director,
- 9/20/04 Selective Adhesion Molecule Therapy: Theory; ECTRIMS, 2004. Vienna, Austria.
- 11/15/04 Novel Approaches to the Treatment of Multiple Sclerosis, Walter Reed Armed Forces Neurology Symposium, Bethesda, Md
- 12/5/04 Neurodegeneration in MS Symposium II, NYC, Co-Director.
- 12/18/04 Diagnosis and Treatment of Multiple Sclerosis, Neurology for the Primary Care Physician
- 4/12/05 MS Scientific Topic Highlights, AAN, Miami, Fla.
- 6/10/05 Visiting Professor and Grand Rounds; Novel MS therapies, at University of Wisconsin.
- 6/18/05 Selective Adhesion Molecule Inhibition, at meeting on Novel MS Therapeutics; Vienna, Austria

- 7/14/05 Mechanisms of neurodegeneration and strategies for neuroprotection in multiple sclerosis, Neurology Grand Rounds, U. of Pennsylvania
- 7/26/05 Natalizumab clinical trials data and mechanism of action; NIH Workshop on Natalizumab, Washington DC
- 9/23/05 Mechanisms of neurodegeneration and strategies for neuroprotection in multiple sclerosis, Neurology Grand Rounds, U. of Virginia
- 10/20/05 How do nerve cells die? National MS Society, RI Chapter, Annual Research Day Lecture.
- 10/30/06 Neuroprotection in MS, National MS Society, Central New England Chapter, Annual Research Day Lecture.
- 12/16/05 Neurology for Primary Care Physicians Update Symposium. Johns Hopkins CME. Baltimore, Md
 1) Symptomatic Management of Multiple Sclerosis.
 2) Future Immunotherapies for MS
- 2/14/06 Co-Moderator Section on Translating Myelin Biology, Gordon Conference, Ventura, CA 2006.
- 4/3/06 Future Therapeutic Strategies in MS, at the American Academy of Neurology Update on MS Course, San Diego, CA
- 4/18/06 Charcot Lecture: Mechanisms of Neurodegeneration and Strategies for Neuroprotection in Multiple Sclerosis. French Embassy, Washington, DC
- 5/1/06 Myelin-Axon Interactions, Johns Hopkins Clinical Neuroscience Seminar, Baltimore, Md
- 5/2/06 Novel Imaging Technologies in Multiple Sclerosis, Update on Multiple Sclerosis Symposium (invited Keynote Speaker), Montreal, Canada
- 5/3/06 Neuroprotection in Multiple Sclerosis, Montreal Jewish Hospital, Montreal, Canada
- 5/3/06 The Dual Role of MAG; inhibitory and trophic signaling, Montreal Neurological Institute, McGill University, Montreal, Canada.
- 5/20/06 Imaging Myelin and Axons; Myelin Interest Group, Skirball Institute, New York University, NYC, NY.
- 6/1/06 Natalizumab (Tysabri) Update, Consortium for MS Centers Annual Meeting, Scottsdale, AZ.
- 6/2/06 Mechanisms of Neurodegeneration in MS, Consortium for MS Centers Annual Meeting, Scottsdale, AZ.
- 6/3/06 Design and Implementation of Neuroprotective Clinical trials in MS, Consortium for MS Centers Annual Meeting, Scottsdale, AZ.

- 6/29/06 Mechanisms of neurodegeneration and strategies for neuroprotection in multiple sclerosis, Neurology Grand Rounds, U. of Chicago
- 7/5/06 Neuroprotection Clinical Trial Design for MS; at Course on Progression in MS, University of S. Florida CME program (Faculty: Antel, Calabresi, Lucchinetti, and Wolinsky).
- 7/19/06 Rare Neuroimmunological Diseases Symposium (Co-Director); JHU CME, Baltimore, Md
 - 1) Overview of Immunological mechanisms
 - 2) Update on MS
 - 3) Future Immunotherapies
 - 4) Sphingosine-1P1 receptor agonists
- 9/29/06 A new therapeutic principle in MS: targeting S1P receptors. Symposium Co-chair with Professor Ludwig Kappos at ECTRIMS 2006, Madrid, Spain.
- 10/09/06 Leader of Walking Tour of Highlighted MS Posters at ANA 2006, Chicago, IL.
- 10-20-06 High Resolution DTI of rat spinal cord; Histopathological radiological correlations, Cambridge, MA, Symposium at Biogen-Idec
- 11-02-06 Tissue Repair in MS, Orlando, Fla, NMSS Symposium. Directed scientific presentations and was highlighted scientific speaker at NMSS annual meeting for Chapters and Clients.
- 12-16-06 Multiple Sclerosis: Treat the Patient Not the MRI; at JHU CME course, Baltimore, Md
- 1-29-07 Conduct of a Phase III clinical trial of FTY-720 in RRMS at Novartis 2309 FTY-720 Clinical Investigators Meeting, Miami, Fla
- 3-27-07 Assessing Disability in MS, Social Security Administration, Baltimore, MD
- 04-06-07 MS Update, JHU Medical Grand Rounds, Baltimore, MD
- 04-19-07 The role of T-IL-17 in MS and TM, Johns Hopkins University, Baltimore, MD
- 04-26-07 Optical coherence tomography in MS; keeping an eye on the axon, JHU Neurology Grand Rounds, Baltimore, MD
- 05-03-07 Kv1.3 as a therapeutic target in MS, Invited talk at Vertex Inc.; Cambridge, MA
- 05-04-07 1) The pathogenesis of primary progressive MS and 2) Treatment of PPMS, JHU CME course, Baltimore, MD
- 05-04-07 MS Therapy course; Monoclonal antibody treatments for MS, AAN Annual Meeting; Boston, MA
- 05-18-07 Biomarkers and future therapies for MS, Food and Drug Administration, Greenbelt, MD
- 05-29-07 Monoclonal Antibody Therapies for Multiple Sclerosis. Grand Rounds, Department of Neurology, Northwestern University School of Medicine.

- 06-02-07 Promising Oral Agents and Neuroprotective Strategies for Multiple Sclerosis, ACTRIMS 2007 annual meeting, Washington DC
- 06-07-07 Optical coherence tomography in MS; keeping an eye on the axon, Georgetown University Neurology Grand Rounds, Washington, DC
- 07-25-07 Diffusion Tensor Imaging and optical coherence tomography in MS; keeping an eye on the axon, Brown University, Neurology Grand Rounds, Providence, RI
- 09-07-07 What can preclinical models tell us about neuroprotection? MS CORE Symposium on Design of Neuroprotective Clinical Trials for MS, Washington DC.
- 10-16-07 The role of the voltage-gated potassium channel Kv1.3 in T effector memory cells. University of Wuerzburg, Wuerzburg, Germany.
- 10-20-07 Novel strategies for neuroprotection in multiple sclerosis. Keynote Speaker at the World Congress of Regeneration, Leipzig, Germany.
- 2-19-08 Optical Coherence Tomography and Diffusion Tensor Imaging in Multiple Sclerosis. Neurology Grand Rounds, NYU School of Medicine, NYC, NY
- 3-26-08 Analysis of visual pathways in MS using Optical Coherence Tomography and Diffusion Tensor Imaging; Neurology Grand Rounds, UMDNJ, Newark, NJ
- 4-17-08 Future Therapies in Multiple Sclerosis, Multiple Sclerosis Therapy Course, Annual Meeting of the American Academy of Neurology, Chicago, IL
- 5-1-08 Optical Coherence Tomography and Diffusion Tensor Imaging as outcome measure in neuroprotective trials in MS, National MS Society Research Day, Lone Star Chapter, Dallas, Texas
- 5-16-08 Optical Coherence Tomography and Diffusion Tensor Imaging in Multiple Sclerosis. Neurology Grand Rounds, Thomas Jefferson University, Philadelphia, PA
- 5-30-08 Novel Imaging Techniques in Multiple Sclerosis, Kirby Center for Imaging Annual Retreat, Mt Washington Center, Baltimore, Md
- 7-18-08 Utility of Optical Coherence Tomography in Multiple Sclerosis Diagnosis, Prognosis, and Clinical Trials. Optical coherence tomography conference. Boston, MA
- 8-27+28-08 Co-chair (with Prof. Frederik Barkof) Meeting on Novel Imaging Measures in Multiple Sclerosis. Amsterdam.
- 9-17-08 Director Teaching Course on; Vision: a microcosm of the disease in MS. World Congress of Research and Treatment in Multiple Sclerosis. Montreal, CA.
- 10-20-08 The role of Kv1.3 in T cell differentiation. MS Seminar Beth Israel Hospital, Harvard University, Boston, MA

- 10-30-08 The potential immunological role of Vitamin D in multiple sclerosis, Nancy Davis Foundation Meeting, Los Angeles, CA.
- 11-6-08 Novel Imaging Strategies in multiple sclerosis, Neurology Grand Rounds, University of North Carolina, Chapel Hill, NC.
- 12-18-08 Multiple sclerosis: a multidisciplinary approach reveals new clues to pathogenesis and treatment. Neurology Grand Rounds, Johns Hopkins University, Baltimore, Md.
- 3-5-09 Research Update Teleconference for National MS Society, Capital and Maryland Chapters
- 3-7-09 Imaging Neuroprotection, Johns Hopkins Advanced Studies in Medicine, CME Program, Wash DC
- 3-25-09 Novel Imaging Strategies in Multiple Sclerosis, Neurology Grand Rounds, Robert Wood Johnson, University of Medicine and Dentistry, New Brunswick, NJ
- 2-27-10 Neuroprotective and reparative Strategies in MS, RI Chapter NMSS Meeting, Prov, RI
- 5-21-10 Phase I results of PEG-IFN β 1a trial, ADVANCE Investigator's meeting, Barcelona, Spain
- 6-3-10 Monoclonal Antibody Therapies in MS, Chaired Session and lectured on Alemtuzumab, CMSC Meeting, San Antonio, Texas.
- 6-4-10 Will oral therapies be used as first line drugs in MS? CMSC Satellite Symposium. San Antonio, Texas.
- 6-24-10 Optical Coherence Tomography in MS, OCTiMS Investigator's Meeting; Berlin, Germany
- 6-25-10 Rational for OCTiMS Trial Design, OCTiMS Investigator's Meeting; Berlin, Germany
- 7-12-10 Retinal Pathology in Multiple Sclerosis: Insights into disease pathogenesis. Pathology Grand Rounds, Johns Hopkins University.
- 9-29-10 Clinical Issues in Multiple Sclerosis, Roundtable Discussant; University of Michigan, CME symposium.
- 10-4-10 Unraveling the Pathogenesis of Multiple Sclerosis Through Immunology and Imaging; Donald Price Symposium, Johns Hopkins University
- 10-13-10 Optical Coherence Tomography Correlate with MRI measures in Multiple Sclerosis; European Consortium for Treatment of Multiple Sclerosis (ECTRIMS) 2010, Sweden
- 10-22-10 Emerging Therapies in Multiple Sclerosis; Johns Hopkins Update for the Primary Care Physicians and General Neurologists, Bayview Campus
- 11-4-10 Prospects for Remyelination in Multiple Sclerosis; National MS Society Maryland Chapter Annual Meeting
- 11-12-10 Indiana Neurological Society; Multiple Sclerosis Therapeutics, 2010.

- 11-17-10 Pediatric Neurology Grand Rounds, Johns Hopkins University; Update on Pediatric Multiple Sclerosis
- 12-4-10 Vitamin D usage in Multiple Sclerosis Patients; European Charcot Foundation Annual Meeting, Fiuggi, Italy.
- 4-28-11 Endogenous Remyelination: Role of Thyroid hormone beta receptor signaling. Oregon Health Sciences, Portland, OR.
- 5-6-11 Surrogate Markers: Imaging. American Academy of Neurology Translational and Clinical Research Course. Baltimore, Md
- 5-26-11 Optical Coherence Tomography in Multiple Sclerosis, Neurology Grand Rounds, Tufts New England Medical Center, Boston, MA
- 6-26-11 Molecular Pathways for Neuroprotection in Multiple Sclerosis. New York Academy of Sciences, Cognitive Dysfunction in Multiple Sclerosis: New Approaches to Diagnosis and Treatment Symposium.
- 9-15-11 Optical Coherence Tomography in Multiple Sclerosis, Retinal Degeneration Symposium, Boston, MA
- 9-22-11 The Anterior Visual Pathway in Multiple Sclerosis as a Target for Remyelination in Multiple Sclerosis, Myelin Repair Foundation
- 9-30-11 Neurology Grand Rounds, Washington University, St Louis, MO. Oligodendroglioneogenesis: Prospects for Endogenous Remyelination in Multiple Sclerosis
- 10-26-11 MS update for NMSS Maryland Chapter Annual Meeting
- 11-11-11 Society for Neuroscience, Glial Cell Workshop: Multiple Sclerosis and Neuromyelitis Optica clinical cases presentation
- 12-10-11 FREEDOMS II Investigators Meeting: Results of 2309 Phase III trial
- 1-11-12 Neurology Grand Rounds, Mt Sinai Hospital, NYC, NY. Optical Coherence Tomography in Multiple Sclerosis
- 1-12-22 MS Crossfire Panel Discussion on Management of MS
- 3-7-12 Philadelphia Neurological Society: Multiple Sclerosis Update
- 3-8-12 Neurology Grand Rounds, University of Pennsylvania, Philadelphia, PA. Oligodendroglioneogenesis: Prospects for Endogenous Remyelination in Multiple Sclerosis
- 4-25-12 Results of the FREEDOMS 2 Phase 3 clinical trial, American Academy of Neurology, New Orleans, LA

- 5-9-12 Remyelination in Multiple Sclerosis; Visiting Professor and Neurology Grand Rounds, University of Pittsburgh
- 5-23-12 Issues related to Progressive MS, NMSS Live Webcast from studio in NYC
- 5-31-12 Neuroprotection in MS; Overview talk and session chair at CMSC meeting, San Diego, CA
- 11-15-12 Prospects for Endogenous Remyelination in Multiple Sclerosis; Visiting Professor and Gabriele M. Zu Rhein Lecture, Department of Pathology, University of Wisconsin.