Timothy L. Vollmer, M.D.

CURRICULUM VITAE

1. Personal history

University of Colorado School of Medicine
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2. Education

- University of Wyoming, Laramie, WY (B.A. Zoology with Highest Honors), 1973-1977
- Stanford University School of Medicine, Stanford, CA (M.D.), 1977-1982
- Intern in Internal Medicine, Yale New Haven Hospital, New Haven CT, 1982-1983
- Resident in Neurology, Stanford University Hospital, Stanford, CA, 1983-1985
- Post Doctoral Fellow in Neuroimmunology, University Hospital, Stanford, CA, 1985-1986
- Chief Resident in Neurology, Stanford University Hospital, Stanford, CA, 1986-1987
- ACPE Physician Executive Course I, 1995
- Yale School of Medicine and Yale School of Business Physician Executive Course, 1997

3. Academic Appointments

- Assistant Professor, Department of Neurology, Yale University School of Medicine, New Haven, CT, 1987—1993
- Medical Director, Rocky Mountain Multiple Sclerosis Center, Swedish Medical Center, Englewood, CO, 1993—1995
- Associate Clinical Professor, Department of Neurology, University of Colorado, Denver, CO, 1993—1995
- Associate Professor, Department of Neurology, Yale University School of Medicine, New Haven, CT, 1996—2002
- Vice Chairman-Clinical Affairs, Department of Neurology, Yale University , New Haven, CT, 1996—2002
- Director, Yale Multiple Sclerosis Research Center, New Haven, CT, 1996—2002
- Associate Director for Clinical Studies, Center of Excellence on Restoration of Function in Spinal Cord Injury and Multiple Sclerosis, U.S. Dept. of Veterans Affairs, Division of Rehabilitation Research and Development, Connecticut VA Healthcare System, West Haven, CT, 1996—2002
- Chair, Division of Neurology, Barrow Neurological Institute at St. Joseph's Hospital and Medical Center, Phoenix, AZ August, 2002—March, 2007
- Associate Residency Program Director, Barrow Neurological Institute at St. Joseph Hospital and Medical Center, Phoenix, AS, January, 2004—August, 2008
- Director, Neuroimmunology Program, Barrow Neurological Institute at St. Joseph Hospital and Medical Center, Phoenix, AZ, August, 2002—August, 2008

- Van Denburgh Professor of Neurology, Barrow Neurological Institute at St. Joseph Hospital and Medical Center, Phoenix, AZ, March 2002—August, 2008
- Co-Director, Rocky Mountain MS Center at Anschutz Medical Campus 2008—Present
- Medical Director, Rocky Mountain MS Center 2008—Present
- Professor of Neurology, University of Colorado Denver 2008—Present
- Director, Neurosciences Clinical Research, University of Colorado Denver 2010—Present

4. Other Professional Positions

- Nancy Davis Center Without Walls Investigator, 1994—2002
- Director, NARCOMS Project for Consortium of MS Centers 1996—2011

5. Honors, Recognitions and Awards

- Voted in top quartile of attending physicians by medical students at University of Colorado School of medicine for academic year 2010-2011
- Accelerated Cure Project for Multiple Sclerosis PHYSICIAN OF DISTINCTION AWARD, 2011
- Best Doctors, Top 1% of neurologists ranked nationally by US News & World Report and Castle Connolly Medical, Ltd. 2011
- Fellow, American Academy of Neurology 2009
- University of Colorado Department of Neurology Teaching Award 2009
- Diplomat, American Academy of Neurology, Section of Multiple Sclerosis 2001
- Best Doctors in American 2003—2004
- National Multiple Sclerosis Society Volunteer Hall of Fame
- Who's Who in North America
- Who's Who in Science
- Who's Who in Medicine
- Best Doctors in New York, Castle Connolly Medical LTD
- 2000 Outstanding Scientists of the 21st Century-First Edition (Melrose Press, LTD., Ely, Cams. UK)
- American Neurology Association Fellow
- Scholars Program (Appointment (Stanford University)
- Dean's Fellowship (Stanford University)
- Alpha Epsilon Delta
- Omicron Delta Kappa
- Phi Beta Kappa
- Phi Kappa Phi
- University of Wyoming Honors Scholarship

6. Memberships in Professional Organizations

- Colorado Society of Clinical Neurologists
- Arizona Medical Association 2003-2004
- American Academy of Neurology
- American Association of Immunology
- American Neurological Association
- American Society of Experimental NeuroTherapeutics

- Consortium of Multiple Sclerosis Centers
- International Society for Neuro Immunology
- Society for Neuroscience
- Royal Academy of Physicians

7. Major committee and service responsibilities

- University of Colorado School of Medicine Admissions Committee, 2010--
- Advisory Committee, 109MS201, Biogen Idec
- NARCOMS Team member
- NARCOMS Steering Committee (?—2010)
- Consortium of Multiple Sclerosis Centers (CMSC Board of Governors – member
- Clinical Advisory Committee—National Multiple Sclerosis Society, Local Chapter
- Clinical Advisory Committee—National Multiple Sclerosis Society, Member
- Steering Committee, FTY720 Studies, Novartis
- National Professional Advisory Committee-National MS Society
- Yale Medical Student Preclinical Curriculum Committee Chairman, 1992-1993
- Yale School of Medicine Senior Clinician Committee, Member, 1993/01996-2002
- Yale Clinical Research Policies Review Committee 2000
- Councilor, MS Section, American Academy of Neurology, 2001
- Data Safety and Monitoring Committee, ARAVA, Adventis, Chairman, 2001-2002
- Yale Dept of Neurology Clilnical Management Team, Chairman, 1996-2002
- Yale Medical Student Admission Committee, Member, 1998-2002
- Yale Faculty Practice Plan Contracting Committee, Member, 1999-2002
- Yale Provost's Standing Committee on Conflict of Interest, Member, 2000-2002
- Yale School of Medicine Credentialing committee, Member, 1999-2002
- Clinical Review Committee, CHAPS and CHAMPIONS Study, 1998-2002
- Yale School of Medicine Strategic Planning Committee, Member, 1996

8. Licensure and board certification

- State of Colorado licensure
- Board certified, American Board of Psychiatry and Neurology, 1991

9. Review and referee work

- Editor, Multiple Sclerosis Quarterly Report (MSQR); 1999—2005
- Co-Editor, Multiple Sclerosis Quarterly Report (MSQR); January, 2005—Present
- Editorial Board, European Journal of Neurology; 2010--present

10. Invited extramural lectures, presentations and visiting professorships

- "New Treatment Strategies in MS" presentation at New Perspectives in Multiple Sclerosis: Epidemiology, Pathology, Imaging and Treatment Strategies CME symposia, sponsored by State University of New York, University at Buffalo. New Orleans, LA., Sept. 11, 2010
- Johns Hopkins University CME videotaped presentation sponsored by MedicalLogix: "Advances in MS: Emerging Strategies for Neuroprotection and Neuroregeneration"
- Grand Rounds presentation to University of California San Diego School of Medicine August, 12, 2011

10.1. Conferences organized and/or chaired

1. Yale Clinical Neuroimmunology Conference, Yale School of Medicine, Chair, 1993
2. International Committee on Databases in MS, Inaugural Meeting, Venice, Italy, Chair, 1999
3. International Committee on Databases in MS, Second Annual Meeting, Fort Worth, Texas, Chair, 2001
4. Yale Neuroimmunology Conference, Yale School of Medicine, Chair, 2001
5. Yale International Conference on Schwann Cell Transplantation in MS, Yale School of Medicine, Chair, 2001
6. 29th Annual Barrow Neurological Institute Neurology Symposium, Barrow Neurological Institute, Committee Member, 2003
7. 30th Annual Barrow Neurological Institute Neurology Symposium, Barrow Neurological Institute, Committee Member, 2004
8. 31st Annual Barrow Neurological Institute Neurology Symposium, Barrow Neurological Institute, Committee Member, 2005
9. 32nd Annual Barrow Neurological Institute Neurology Symposium, Barrow Neurological Institute, Committee Member, 2006
10. 33rd Annual Barrow Neurological Institute Neurology Symposium, Barrow Neurological Institute, Committee Member, 2007
11. Exercise as a Prescriptive Therapy in MS: What We Know and What We Need to Know. A Consensus Conference, organizer and presenter. Denver, Colorado October 2-3, 2010

11. Teaching record

- **Grand Rounds presentation-University of Colorado Department of Neurology**
  - December 11, 2009
  - December 12, 2010: "*Immunotherapies of MS: New Opportunities and New Risks"*
  - December 7, 2011: *"Is Multiple Sclerosis a Disease of Oligodendrocytes, Neurons or Astrocytes? Why Does it Matter?"*

- **Invited Grand Rounds presentations**
  - August 12, 2011, University of California San Diego

- **Resident Education presentations**
  - June 3, 2009. *Goals of Immunotherapy in MS Using FDA Approved DMANS;*
  - June, 2010 *Our Evolving Understanding of MS, Implications for Future Therapies;*
  - October 6, 2010. *Case presentations*
  - December 8, 2010: *Immunological therapy in MS*

- **Student Teaching**
  - October 7, 2009 4th year student lecture, Path 8001, *CNS Analysis,* University of Colorado School of Medicine
  - October 11, 2011 4th year student lecture, University of Colorado School of Medicine Clinical Laboratory Medicine, Pathology 8001, *CSF Analysis*.
  - January 31, 2012 Neuroscience Graduate Education Lecture, University of Colorado School of Medicine

- **Attending Neurologist at University Hospital**

  - March 1—March 15, 2009
  - June 1—June 15, 2009
  - Oct 4—Oct 7, 2010
  - Oct 18, 2010
  - Oct. 19—Oct. 31, 2010
  - January 1—January 15, 2011
  - Neuro Service/Stroke Call August 18, 2011, September 14, 2011, October 31, 2011, December 21, 2011

- **Mentees/trainees**

  - Jonathan Goldstein, M.D., Associate Professor of Neurology, Yale School of Medicine
  - Jana Preiningerova, M.D. formerly Assistant Professor of Neurology, Yale School of Medicine. Currently residing in Eastern Europe
  - Robert Bomprezzi, M.D., PhD. Assistant Professor of Neurology, Barrow Neurological Institute
  - Wenhua Piao, PhD
  - Wei Liu, PhD. Faculty, Albert Einstein College of Medicine
  - Mrinalini Kala, PhD. Faculty, University of California San Francisco
  - Youn Jee, M.D., PhD. Assistant Professor, Cheju National University, School of Medicine, Korea
  - 3rd year medical students at University of Colorado 2010--2011:
    Daren Eblovi, Brent Fowler, Julian Maendel, Yihan Lin, Samuel Mast, Matthew Percy, Amy Reppert, Benjamin Snyder, Tobin Strom, Tyra Thorstad, Asa Ware.
  - Residents, University of Colorado School of Medicine, 2010-2011:
    Charles Braun, Haley Burke, Emily Gertsch, Takamasa Higashimori, Kimberly Horiuchi, Drew Kern, Angel Pulido, Peter Bergman, Emily Lampe, Eryn Lonnquist, Danielle McDermott, Marius Birlea, Adam Graham, Aaron Haug, Wesley Reynolds, Katie Polovitz, Teri Schreiner, 2010--2011
  - David Case, Mentee Resident University of Colorado School of Medicine 2008—2009; 2009—2010; 2010—2011
  - Preceptor for Kiara Foltyn 1st year medical student, University of Colorado School of Medicine, 2010
  - Matthew West, M.D., Neuro-Immunology Fellow, 2010--2011
  - Teri Schreiner, M.D., Neuro-Immunology Fellow, 2011—2012
  - Preceptor for Jacob Pellinen, 2nd year medical student, University of Colorado School of Medicine 2011-2012
  - Preceptor for Jeremy Hua 1st year medical student, University of Colorado School of Medicine, 2011--

12. Grant support—Current as Primary Investigator

1. MS-LAQ-302E, TEVA Neuroscience (extension) Vollmer (PI) 12/01/2009-11/30/2012
This project is an extension of the MS-LAQ-302 (BRAVO) study to evaluate the long-term safety, tolerability and effect on disease course of daily oral laquinimod 0.6 mg in subjects with relapsing multiple sclerosis

2. 101-MS-402 **TYGRIS**: TYSABRI, Biogen Idec, Inc. Vollmer (PI) 11/13/2008-11/12/2011
This project assesses the incidence and pattern of serious infections, malignancies, and other serious adverse events (SAEs) in patients with MS treated with TYSABRI® (natalizumab).

3. CAMMS32409, Genzyme Vollmer (PI 02/07/2011- 02/06/2014
This project is an extension protocol for Multiple Sclerosis patients who participated in Genzyme-Sponsored studies of Alemtuzumab, such as CAMMS32400507

4. ONO-4641 POU006, Ono Pharmaceutical Co Vollmer (PI) 01/2010-04/30/2013
This project is a flexible-dose titration study of the safety and tolerability of ONO-4641 in patients with a relapsing form of multiple sclerosis

5. ONO-4641POU007 (Extension) Ono Pharmaceutical Vollmer (PI) 03/01/2011-2/28/2014
To evaluate continuing safety and efficacy of ONO-4641 in patients who have completed an initial 26-week study (ONO-4641POU006)

6. 101JC401, Biogen Idec Vollmer (PI) 05/01/2010-04/30/2013
JVC Antibody Program in Patients with Relapsing Multiple Sclerosis Receiving or Considering Treatment with Tysabri®: **STRATIFY-1**

7. 101JC402, Biogen Idec Vollmer (PI) 07/01/2010-06/30/2013
JCV Antibody Program in Patients with Relapsing Multiple Sclerosis Receiving or Considering Treatment with Tysabri®: **STRATIFY-2**

8. 109MS201 Biogen Idec Vollmer (PI) 06/01/2010-05/31-2015
To evaluate the safety and tolerability of BG00012 administered in combination with IFNβ or GA in subjects with remitting-relapsing multiple sclerosis. **EXPLORE**

9. Rocky Mountain Network for Neuroscience Clinical Studies (RMNNCS).
NIH/NINDS 1U10NS077277-01 Vollmer (PI) 9/30/11-9/30/18

10. 10-1143, Gateway II Teva Vollmer (PI) 10/1/2011-3-31-2014
Randomized study comparing rituximab induction therapy followed by glatiramer acetate to glairamer acetate monotherapy in RRMS

12.1Grant support—Past

1. Duloxetine in patients with central neuropathic pain Vollmer (PI) 10/31/2008-10/30/2011
Lilly Research Laboratories
This project assesses the efficacy of duloxetine 60 mg once daily (QD) compared with placebo on the reduction of pain severity as measured by the weekly mean of the daily 24-hour average pain scores in patients with central neuropathic pain in MS.

2. A 12-month double-blind, randomized, multicenter, active-controlled, parallel-group study comparing the efficacy and safety of 0.5 mg and 1.25 mg fingolimod (FTY720) administered orally once daily versus interferon β-1a (Avonex®) administered IM once weekly in patients with relapsing-remitting multiple sclerosis with optional Extension Phase, Novartis , (Sub Investigator)

3. A Double-Blind, Placebo Controlled Multi-Center Study to Evaluate the Efficacy and Safety of MBP8298 in Subjects with Secondary Progressive Multiple Sclerosis, BioMS Technology Corp., (Sub Investigator)

4 Improved Diagnosis of Multiple Sclerosis Using Magnetoencephalography (MEG) and the Synchronous Neural Interaction TM Test: MS Template Development Study. Orasi (Sub Investigator)

5 A 14 week Randomized, Double-Blind, Placebo-Controlled Parallel Group Study to Evaluate the Efficacy, Safety, and Tolerability of Nerispiridine 50 mgm, 100 mg. and 200 mg in Patients With Multiple Sclerosis, Sanofi Aventis (Principal Investigator)

6 A Phase 1 Open-Label, Flexible-Dose Titration Study of the Safety and Tolerability of ONO-4641 in Patients with a Relapsing Form of Multiple Sclerosis, Ono Pharma USA. ONO 4641 (Principal Investigator)

7 A Study with IPX056 in Subjects with Spasticity Associated with Multiple Sclerosis (Principal Investigator)

8 A Phase II, Multi-Center, Randomized, Double-Blind, Placebo-Controlled, Safety, Tolerability and Efficacy Study on Add-on Cladribine Tablet Therapy with Rebif® New Formulation in Multiple Sclerosis Subjects with Active Disease, Serono International S.A., Serono, Inc., (Principal Investigator)

9. A Phase 2 Randomized, Double-Blinded, Placebo-Controlled, Multi-Center Study of Subcutaneous Daclizumab® in Patients with Active, Relapsing Forms of Multiple Sclerosis, PDL BioPharma, Inc., (Principal Investigator)

10. Biomarkers in Multiple Sclerosis, Division of Intramural Research (DIR), NIH/NINDS, (Principal Investigator)

11. Online Validation of Multiple Sclerosis International Quality of Life (MuSI-QoL) Questionnaire, Serono/Pfizer, (Principal Investigator)

12. A Prospective Study of Quality of Life and Cost of Disease in a Selected Group of MS Patients Treated with Novantrone, Serono International S.A., Serono, Inc. (Principal Investigator)

13. Development of Peripheral Blood Diagnostics and Biomarkers for Alzheimer's Disease, Arizona Biomedical Research Commission (ABRC), (Subinvestigator)

14. Double-Blind, Placebo-Controlled, 20-Week, Parallel Group Study to Evaluate Safety, Tolerability and Activity of Oral Fampridine-SR in Subjects with Multiple Sclerosis, Acorda Therapeutics, Inc. (Principal Investigator)

15. Open-Label Study to Evaluate the Safety, Tolerability and Activity of Oral Fampridine-SR in Subjects with Multiple-Sclerosis, Acorda Therapeutics, Inc. (Principal Investigator)

16. A Double-Blind, Placebo-Controlled, Multicenter Study to Assess the Safety and Efficacy of AVP-923 (Dextromethorphan/Quinidine) in the Treatment of Pseudobulbar Affect in Patients with Multiple Sclerosis (Principal Investigator)

17. A Phase II/III, Randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Multicenter Study to Evaluate the Safety and Efficacy of Rituximab (MabThera®/Rituxan®) in Adults with Primary Progressive Multiple Sclerosis, Genentech, Inc., (Principal Investigator)

18. A Phase II, Proof-of-Concept, Randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Multicenter Study to Evaluate the Safety and Efficacy of Rituximab (MabThera®/Rituxan®) in Adults with Relapsing-Remitting Multiple Sclerosis, Genentech, Inc., (Principal Investigator)

19. A Cross Sectional Study to Evaluate the Persistence of Immunological Effects of Glatiramer Acetate (Copaxone®) in Patients with Relapsing Forms of Multiple Sclerosis , Barrow Neurological Foundation, (Principal Investigator)

20. Specimen and Data Collection and Archiving for Immunological Investigations Aiming to Understand the Immunological Mechanism of Multiple Sclerosis (MS) and Identify New Targets For Immune Therapies for Multiple Sclerosis and Other Autoimmune Diseases and Neuroinflammatory Disorders, Barrow Neurological Foundation (Principal Investigator)

21. Gene Expression Assay of Patients with Multiple Sclerosis and Other Neurological Diseases, On and Off Immunological Therapy, Compared to Healthy Controls, Barrow Neurological Foundation/TGen, (Principal Investigator)

22. A Genomics Study of Blood Markers of Disease Activity in Multiple Sclerosis (Co-Principal Investigator)

23. Phase I Trial of Immunotherapy with BHT-3009 Alone or Combined with Atorvastatin in Patients with Multiple Sclerosis (Lead Investigator)

24. International, randomized, multicenter, Phase IIIb study in patients with relapsing-remitting multiple-sclerosis comparing over a treatment period of 104 weeks: 1) Double-blinded safety, tolerability, and efficacy of Betaseron/Betaferon 250 ug (8MIU) and Betaseron/Betaferon 500 ug (16 MIU), both give subcutaneously every other day, and 2) Rater-blinded safety, tolerability, and efficacy of Betaseron/Betaferon s.c. every other day with Copaxone 20 mg s.c. once daily. (Principal Investigator)
25. A Randomized, Rater-blinded, Multicenter, Parallel-group Study Comparing the Efficacy and Safety of Betaseron® 250mg Subcutaneously Every Other Day with Avonex® 30mg Intramuscularly Once per Week in Relapsing-remitting Multiple Sclerosis Patients Previously Treated with Avonex®. (Principal Investigator)
26. A Phase II, Randomized, Double-Blind, Placebo Controlled Study to Evaluate the Preliminary Efficacy, Pharmacokinetics and Immunogenicity of BMS-188667 Administered to Subjects with Relapsing-Remitting Multiple Sclerosis" (Principal Investigator)
27. A Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety, Tolerability and Efficacy of NBI-5788- in Patients with Relapsing Multiple Sclerosis (Principal Investigator)
27. Multiple Sclerosis Instrument Quality of Life Project (MuSI-QoL) (Principal Investigator)
28. Phase IV, Multicenter, Open Label, Randomized Study Of Rebif 44 Mcg Administered Three Times Per Week By Subcutaneous Injection Compared With Copaxone 20 Mg Administered Daily By Subcutaneous Injection In The Treatment Of Relapsing Remitting Multiple Sclerosis (Principal Investigator)
29. A Multi-Centered, Randomized, Two-Arm, Open Label Study to Evaluate the Safety, Tolerability and Efficacy of Induction Treatment with Mitoxantrone (Novantrone®) Preceding Treatment with Glatiramer Acetate (Copaxone®) versus Chronic Treatment with Glatiramer Acetate Alone in Relapsing Forms of Multiple Sclerosis Teva Neuroscience,(Lead Investigator)
30. Immunological Studies for a Multi-Centered, Randomized, Two-Arm, Open Label Study to Evaluate the Safety, Tolerability and Efficacy of Induction Treatment with Mitoxantrone (Novantrone) Preceding Treatment with Glatiramer Acetate (Copaxone) versus Chronic Treatment with Glatiramer Acetate Alone in Relapsing Forms of Multiple Sclerosis Teva Neuroscience,(Co-Principal Investigator)
31. Impact of Neutralizing Antibodies on Interferon Responsive Genes Highlights Biomarker Response, Biogen Idec, (Principal Investigator)
32. A Randomized, Double-Blind, Placebo-Controlled, Multi-center Study to Evaluate the Efficacy and Safety of Atorvastatin in Patients with Clinically Isolated Syndrome and High Risk of Conversion to Multiple Sclerosis, NIAID/ITN, (Principal Investigator)
33. A Multi-Center, Two Arm, Open Label Extension Study (to protocol NC_100) to Evaluate the Long-Term Safety and Efficacy of Short-Term Induction Treatment with Mitoxantrone (Novantrone®) Preceding Treatment With Glatiramer Acetate (Compaxone®) vs. Chronic Treatment with Glatiramer Acetate Alone in Relapsing Forms of Multiple Sclerosis, Teva Neuroscience (Lead Investigator)
34. A Phase I, Double-blind, Placebo-controlled Study Evaluating the Safety and Pharmacology of Single Dose Subcutaneously Administration of a Human Monoclonal Antibody to IL-12 (CNTO 1275) in Patients with Relapsing Forms of Multiple Sclerosis (Principal Investigator)
35. A 24-Week, Randomized, Double-Blind, Parallel-Group, Placebo-Controlled, Dose Finding, Safety, Tolerability, and Efficacy Study of the Human Anti-IL-12 Antibody ABT-874 in Subjects With Multiple Sclerosis With a 24-Week Double-Blind, Active Extension Phase
36. Double-Blind, Placebo-Controlled, 20-Week, Parallel Group Study to Evaluate Safety, Tolerability and Activity of Oral Fampridine-SR in Subjects with Multiple Sclerosis
37. Double-Blind, Placebo-Controlled, 21-Week, Parallel Group Study to Evaluate Safety and Efficacy of Oral Fampridine-SR (10 mg B.I.D.) in Subjects with Multiple Sclerosis
38. A Double-Blind, Placebo-Controlled, Multicenter Study to Assess the Safety and Efficacy of AVP-923 (Dextromethorphan/Quinidine) in the Treatment of Pseudobulbar Affect in Patients with Multiple Sclerosis
39. A Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety, Tolerability and Efficacy of NBI-5788 in Patients with Relapsing Multiple Sclerosis

40. A Randomised, Double-blind, Placebo-controlled, Parallel group, Dose-ranging Study to Investigate the MRI Efficacy and the Safety of Three Months Administration of SB-683699 (150-1200mg twice daily) in Subjects with Relapsing Multiple Sclerosis
41. An open-label study of leukocyte counts in the cerebrospinal fluid and blood of subjects with relapsing-remitting multiple sclerosis following treatment with firategrast
42. A Multi-Center, Randomized, Blinded, Parallel-Group Study of AVONEX® Compared with AVONEX® in Combination with Oral Methotrexate, Intravenous Methylprednisolone, or Both in Subjects with Relapsing-Remitting Multiple Sclerosis Who Have Breakthrough Disease on AVONEX® Monotherapy
43. Phase I Trial of Immunotherapy with BHT-3009 Alone or Combined with Atorvastatin in Patients with Multiple Sclerosis
44. An Open-Label, Multicenter Study to Assess the Safety of AVP-923 Dextromethorphan/Quinidine) in the Treatment of Pseudobulbar Affect (Principal Investigator)
45. An open-label and drug interaction study of natalizumab in combination with interferon-beta (Avonex®) in patients with multiple sclerosis.
46. A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Multicenter Study to Determine the Safety and Efficacy of Natalizumab in Subjects with Relapsing-Remitting Multiple Sclerosis (Principal Investigator)
47. A Phase II, Randomized, Double-Blind, Placebo Controlled Study To Evaluate The Preliminary Efficacy, Pharmacokinetics and Immunogenicity Of BMS-188667 Administered To Subjects With Relapsing-Remitting Multiple Sclerosis (Principal Investigator)
48. A 10 Year Open-Label Extension Study To Evaluate The Safety Of Copaxone And To Monitor The Neurologic Course of Disease In Multiple Sclerosis Patients Treated With Copaxone (Principal Investigator)
49. A Two-Arm, Cross-Over Design, Two Dose, Dose Escalation, Safety and Tolerability Study of Oral Interferon Beta-1a (Avonex) in Multiple Sclerosis (Lead Investigator)
50. An Open-Label, Randomized, Multi-Center, Comparative, Parallel Group Study Of Rebif 44 Mcg Administered Once Per Week By Intramuscular Injection In The Treatment Of Relapsing -- Remitting Multiple Sclerosis (Principal Investigator)
51. An Open-Label, Randomized, Multi-Center, Comparative Parallel Group Study of Rebif Compared with Avonex in Relapsing-Remitting Multiple Sclerosis (Principal Investigator)
52. Characterization of Human Schwann Cell Lines – In Vitro Safety and Viability Studies (Co-Investigator)
53. Phase I Trial of Autologous Schwann Cell Transplantation in MS as a Myelin Repair Strategy in MS Patients (Lead Investigator)
54. An Open-Label, Single-Arm, Cross-over, Frequent MRI Study of Simvastatin as a Therapy for Multiple Sclerosis (Lead Investigator)
55. A Multi-National, Multi-Center, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy, Tolerability, and Safety of Glatiramer Acetate for Injection in Primary Progressive Multiple Sclerosis Patients (Principal Investigator)
56. Randomized, Double Blind, Placebo-Controlled Study to Compare the Effects of Different Dose Regimens of IGIV-Chromatography (IGIV-C), 10% Treatment on Relapsed Rater in Patients with Multiple Sclerosis (Principal Investigator)
57. An Open-Label Safety Extension Study Of Avonex (Interferon Beta-1a Treatment In Subjects Who Completed Biogen Studies C95-812, C96-823, Or C97-830 (Principal Investigator)
58. A Randomized, Double Blind, Placebo-Controlled Study to Evaluate the Efficacy of Avonex in the Treatment of Secondary Progressive Multiple Sclerosis (Principal Investigator)
59. An Open-Label, Randomized, Multi-Center, Comparative, Parallel Group Study of Rebif 44 mcg Administered Three Times Per Week by Subcutaneous Injection, Compared with Avonex 30 mcg Administered Once Per Week by Intramuscular Injection in the Treatment of Relapsing-Remitting Multiple Sclerosis (Principal Investigator)

60. A Randomized, Multi-Center, Double-Blind, Placebo-Controlled Safety, Tolerability And Dose Evaluation Study of Intravenous Antegren (Natalizumab) At Two Dose Levels Using Magnetic Resonance Imaging In Subjects With Multiple Sclerosis (Principal Investigator)
61. A Multi-National, Multi-Center, Randomized, Double-Blind, Placebo-Controlled Study To Evaluate The Efficacy, Tolerability, And Safety Of Two Doses (5 Mg And 50 Mg) Of Glatiramer Acetate Orally Administered In Relapsing Remitting Multiple Sclerosis Patient (Principal Investigator)
62. A Randomized, Parallel-Group, Double-Blind, Placebo-Controlled Study Comparing The Safety, Tolerance And Efficacy Of RTX (Resiniferatoxin) Topical Solution In Patients With Detrusor Hyperreflexia (Investigator)
63. Performance Scale Validation Study (Principal Investigator)
64. Symptom Inventory Validation Study (Principal Investigator)
65. The Effects of Betaseron on Quality of Life in MS -A Q- TWiST Evaluation (Principal Investigator)
66. A Double-Blind, Placebo-Controlled, Multi-center Study of Oral Myelin (Myloral) in the Treatment of Early Relapsing- Remitting MS (Principal Investigator)
67. A Phase II, Double-Masked, Placebo-Controlled Study to Evaluate the Safety and Efficacy of Two Doses of Betaseron in Patients with Secondary Progressive Multiple Sclerosis (Principal Investigator)
68. A Multi-Center, Open-Label, Long-term Study to Evaluate the Safety of Tizanidine for Spasticity Due to MS (Principal Investigator)
69. A Double Blind, Placebo Controlled Trial of Total Lymphoidal Irradiation in Multiple Sclerosis (Principal Investigator)
70. A Double Blind, Placebo Controlled Trial of Tizanidine as an Anti-Spastic Therapy in Multiple Sclerosis (Principal Investigator)
71. A Double Blind, Placebo Controlled Phase II Trial of 4-AP in MS (Principal Investigator)
72. A Pharmacodynamic Study of Tizanidine in MS (Principal Investigator)
73. Open Trial of Tizanidine in Multiple Sclerosis (Principal Investigator)
74. A Double Blind, Placebo-Controlled, Dose-Determination, Safety, Tolerability and Efficacy Study of Intravenous Antegren In Patients with Multiple Sclerosis During an Acute Exacerbation (Principal Investigator)
75. A Phase II Study of Hu23F2G in Acute Exacerbations of Multiple Sclerosis (Principal Investigator)
76. An Open-Label Study to Assess the Long-Term Safety of Zanaflex (tizanidine HCL) in Patients Treated with 28 to 36 mg/day (Principal Investigator)
77. An Open Label Dose Proportionality Study to Assess the Pharmacokinetics of Escalating Doses of Fampridine (4-Aminopyridine) in Subjects with Multiple Sclerosis (Principal Investigator)
78. An Open-Label Protocol to Assess the Steady State Pharmacokinetics of orally Administered Fampridine (4-Aminopyridine) in Subjects with Multiple Sclerosis (Principal Investigator)
79. An Open-Label, Safety and Pharmacokinetic Drug Interaction Study of Intravenous Antegren and Intramuscular Interferon beta-1a in Subjects with Multiple Sclerosis (Principal Investigator)
80. The Prevalence of Neutralizing Antibodies in Patients Treated with Betaseron or Avonex (Principal Investigator)
81. Factors Related to Non-Adherence to Treatment with Disease-Modifying Drugs in Multiple Sclerosis (Co- Investigator)
82. A Double Blind, Placebo Controlled Multi-Center Trial of Copolymer-1 in Relapsing Multiple Sclerosis (Principal Investigator)
83. Cost-Benefit And Cost-Effectiveness Analysis Of Interferon Beta-1a Therapies For Multiple Sclerosis (Lead Investigator)
84. Randomized Multicenter Trial of Intravenous Natalizumab In Acute MS Relapses: Clinic and MRI Effects (Lead Investigator)
85. CS 0777-A-U102, Daiichi Sankyo Pharma Development Vollmer (PI) This project assessed the safety and tolerability of oral CS-0777 administered for 12 weeks in patients with MS.
86. Duloxetine in patients with central neuropathic pain. Lilly Research Laboratories Vollmer (PI) This project assesses the efficacy of duloxetine 60 mg once daily (QD) compared with placebo on the

reduction of pain severity as measured by the weekly mean of the daily 24-hour average pain scores in patients with central neuropathic pain in MS.

87. HP 184: Nerispiroline, Sanofi Aventis US, Inc. Vollmer (PI)
This project assesses the activity of nerispirdine in imporving the ability to walk in persons with MS.

88. Consortium of Multiple Sclerosis Centers, NARCOMS Vollmer (PI)
The project is directed toward continuing the NARCOMS registry for persons with MS.

89. IPX056-B09-01, Impax Vollmer (PI)
A study with IPX056 in subjects with spasticity associated with multiple sclerosis

90. MS-LAQ, TEVA Neuroscience **(BRAVO)** Vollmer (PI)
This project assesses the efficacy, safety, and tolerability of laquinimod over placebo in a double-blind design and of a reference arm of Interferon β-1a (Avonex®) in a rater-blinded design and to perform a comparative benefit/risk assessment between oral laquinimod and injectable Interferon β-1a (Avonex®).

91. Disability-Specific Symptom Inventory Short Forms to Improve MS Outcome Assessment
Vollmer (co-investigator)
Department of Defense, U.S. Army Medical Research Acquisition Activity (subcontract to DeltaQuest Foundation, Inc)

92. ELND002-MS103, Elan Pharm Vollmer (PI)
To determine the safety and tolerability of ELND002 including the identification of dose-limiting toxicity (ies) and determination of the maximum tolerated dose in patients with multiple sclerosis.

93. CAMMS32400507, Genzyme Vollmer (PI)
This project compares two annual cycles of IV low-and-high-dose Alemtuzumab to three-times weekly subcutaneous interferon beta 1a (Rebif) in patients with relapsing remitting multiple sclerosis

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89. **Vollmer, TL**, Tyry, T, Salter A, Cutter G, Marrie R. Is trigeminal neuralgia more prevalent in certain groups of multiple sclerosis patients? Poster presentation to the AAN Annual meeting, Honolulu, HI April, 2011.

90. Fox R, Salter A, Alster JM, Cutter G, Dawson NV, Johnson S, Miller D, Tyry T, **Vollmer T**, Wells B, Kattan M. Do multiple sclerosis patients understand Risk? Survey results from the NARCOMS Registry. Poster presentation at the AAN annual meeting, Honolulu, Hawaii, April, 2011

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95. **Vollmer TL**, Sorensen PS, Arnold DL on behalf of the BRAVO Study Group**.** A Placebo-Controlled and Active Comparator Phase III Trial (BRAVO) for Relapsing-Remitting Multiple Sclerosis. Poster presented at the Annual ECTRIMS (European Committee for Treatment and Research in Multiple Sclerosis)annual meeting, Amsterdam, The Netherlands on October 22, 2011.

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97. **Volmer T**, Comi G, Sorensen PS, Arnold D, Filippi M, Statinova O, Kobys t, Becker E, Jeffrey D, Montalban X, Kappos L, Boyko A, Selmaj K, Zipp F, Havrdova E, Cohen J. Clinical efficacy of laquinimod for the treatment of multiple Sclerosis; pooled analyses from the ALLEGRO and BRAVO Phase III trials. Poster and abstract presented at the 64th Annual American Academy of Neurology meeting, New Orleans, LA April 24, 2012

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13.4 Bibliography—Non peer reviewed publications

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14. Patents Held

Nicotinic Attenuation of CNS Inflammation and Autoimmunity U.S. Application No. **13/063,713**, which is the national phase of International PCT Patent Application No. **PCT/US09/56671**, an application claiming the benefit of **U.S. Prov. App. No. 61/096,170**