**Enrique Alvarez III, MD, PhD, MSCI**

**CURRICULUM VITAE**

**1. PERSONAL HISTORY**

* Enrique Alvarez, MD, PhD, MSCI

Associate Professor, Neuroimmunology

Vice Chair of Clinical Research

Department of Neurology, University of Colorado

Rocky Mountain Multiple Sclerosis Center at University of Colorado

1635 Aurora Court, Aurora, CO 80045

Appointment phone: 720-848-2080

University of Colorado School of Medicine

12631 E. 17th Avenue, Mail Stop B185

Aurora, CO 80045

Office: (303) 724-2187

Fax: (303) 724-0985

[enrique.alvarez@cuanschutz.edu](mailto:enrique.alvarez@cuanschutz.edu)

**2. EDUCATION**

1993-1997 **Bachelor of Science with Honors** North Dakota State University, Fargo, ND

Majors in Biotechnology and Microbiology, minors in Chemistry and Zoology

1997-2006 **MD and PhD: Medical Scientist Training Program**

University of Colorado Health Sciences Center, Denver, Colorado

PhD conferred on December 17, 2004; Dissertation--Characterization of the Bex Gene Family in Humans, Mice, and Rats

MD conferred in 2006

2006-2007 **Internship in Internal Medicine**

University of Colorado Health Sciences Center, Denver, Colorado

2007-2010 **Residency in Adult Neurology**

Washington University, St. Louis, MO

2010-2013 **Master of Science in Clinical Investigation**

Washington University, St. Louis, MO

2010-2013 **Neuroimmunology Fellow, Sylvia Lawry Fellow, National MS Society**

Washington University, St. Louis, MO

2016 **Spanish Mastery**

University of Colorado Health

**3. ACADEMIC APPOINTMENTS**

2013-2021 **Assistant Professor of Neurology, Department of Neurology**

University of Colorado School of Medicine

2013-present **Denver Health Medical Center, Neurology**

2016-2017 **Assistant Medical Director of Outpatient Neurology**

University of Colorado Hospital

2017-2021 **Medical Director of Outpatient Neurology**

University of Colorado Hospital

2021-present **Associate Professor of Neurology, Department of Neurology**

University of Colorado School of Medicine

2021-present **Vice Chair of Clinical Research, Department of Neurology**

University of Colorado School of Medicine

**4. PROFESSIONAL HISTORY**

1993-1996 Undergraduate Research Aide

North Dakota State University, Agricultural Research Serve, Dr. Chris A. Wozniak’s laboratory: *“Biocontrol of the Sugar Beet Root Maggot”*

1995-1996 Spanish telephone tutor for the High School satellite class *“Hablemos Español”*

Prairie Public Television

1997 Undergraduate Research Aid

University of Minnesota, Dr. Linda Boland’s laboratory: *“Cloning of Potassium Channels”*

2008-2009 Member of the Neurology Resident Recruitment Committee

Washington University, St. Louis, MO

2014-2023 Neuroimmunology Block Director, Neurology Residents

University of Colorado School of Medicine

2016-2017 Associate Medical Director of Outpatient Neurology

2017-2021 Medical Director of Outpatient Neurology

2021-Present Vice Chair of Clinical Research

**5. HONORS, RECOGNITIONS AND AWARDS**

1991 NIH Minority Apprentice Program

1992 3rd Grand Award in Microbiology at the International Science and Engineering Fair

1993 3rd Grand Award in Microbiology at the International Science and Engineering Fair

1996 University of Minnesota Summer Research Experience for Undergraduates

1997 Biochemistry Department Award at North Dakota State University

1999 Member of the Medical School Curriculum Committee

University of Colorado School of Medicine

1999 Cited for Academic Excellence for Second Year Medical School

University of Colorado School of Medicine

2000 Member of the Organizing Committee for the 15th Annual MD/PhD National Meeting

2002 Student Travel Award to the 8th International Neural Transplantation and Repair Meeting

2002 Minority Student Travel Award to the 17th Annual MD/PhD National Meeting

2009 Master MS Fellowship recipient

2010 The Foundation of the Consortium of MS Centers annual meeting scholarship for travel to the CMSC meeting in San Antonio, Texas

2010 Sylvia Lawry fellowship recipient from the National Multiple Sclerosis Society

July, 2010 to June, 2013

2012 Travel award to the 11th Congress of the International Society of Neuroimmunology,

Boston, Massachusetts

2013 Wexler Prize for research in Multiple Sclerosis

2016 4th ECTRIMS Summer School – Vienna, Austria June 28-30, 2016

2018 Herndon Award for Outstanding IJMSC Article -- “Evaluation of a Novel Preference Assessment Tool for Patients with Multiple Sclerosis”

2019 2019 AAN Abstract of Distinction for “A novel practice model incorporating extended rooming and scribing assistance in an academic neurology practice”

2019 2019 ANA travel award “Cytokine Changes Induced by antiCD20 Infusions: A Comparison of Rituximab versus Ocrelizumab”

2020 Member of NAIMS (North American Imaging In MS Cooperative)

2021 CMSC award for “Best in Patient and Family Education” for the platform presentation titled “Real-World Findings of Usability and Usefulness of MS Progression Discussion Tool– a Physician-Completed Digital Tool to Evaluate Early Signs of Disease Progression”

**6. MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

* 1998-2006 Colorado Medical Association
* 1998-2008 American Medical Association
* 2000-2006 Rocky Mountain Regional Neuroscience Group
* 2002-2006 American Society for Neural Transplantation and Repair
* 2000-2008 Society for Neuroscience
* 2005-present American Academy of Neurology
* 2013-present Consortium of Multiple Sclerosis Centers (CMSC)
* 2013-present Colorado Society of Clinical Neurologists
* 2014-present American Neurological Association
* 2017-present American Telemedicine Association

**7. MAJOR COMMITTEE AND SERVICE RESPONSIBILITY**

* 2016-present Neurology faculty affairs committee
* 2016-present American Academy of Neurology (AAN)--abstract review committee
* 2019-2020 Member of the health care provider council for the Colorado/Wyoming chapter of the National MS Society
* 2020-present Member for the Mountain West Healthcare Provider Council of the National National MS Society
* 2021-present Chair for the Mountain West Healthcare Provider Council and member National of the National Healthcare Provider Council of the National MS Society
* 2021- 2022 America’s Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) -abstract review committee
* 2022-present Lead for the mountain ECHO project from the National MS Society
* 2022-present Clinical-Translational Research Advisory Committee (CTRAC) at the

School of Medicine (SOM)

**8. LICENSURE AND BOARD CERTIFICATION**

* Active - State of Colorado (DR.0052207; 3/13/13-present)
* Inactive – State of Missouri (2010005843; 2/19/10-1/31/14)
* Inactive – State of Missouri (training 2007012253; 7/1/07-6/30/10)
* Inactive – State of Colorado (training TL.0001921; 6/23/06-8/31/09)
* American Board of Psychiatry and Neurology - Certificate #57342 Sept. 20, 2012

**9. INVENTIONS, INTELLECTUAL PROPERTY, AND PATENT HELD/PENDING**

Patent # WO 2023/056387 A1. Diagnosing Multiple Sclerosis. Filed on 9/29/22. Issued on 4/6/23

**10. REVIEW AND REFEREE WORK**

* Neurology
* JAMA Neurology
* Multiple Sclerosis Journal
* Multiple Sclerosis Journal: Experimental, Translational and Clinical
* Annals of Clinical and Translational Neurology
* Neurology: Clinical Practice
* Neurology: Neuroimmunology & Neuroinflammation
* Journal of Neurology, Neurosurgery, and Psychiatry
* PLOS ONE
* CNS Drugs
* Journal of Neuroimmunology
* European Journal of Neurology
* Journal of the Neurological Sciences
* The Journal of Neuropsychiatry and Clinical Neurosciences
* The International Journal of Neuroscience
* Molecular Diagnosis & Therapy
* Journal Molecular Diagnosis & Therapy
* The Neurologist
* Annals of neurology

**11. INVITED LECTURES AND PRESENTATIONS**

**LOCAL:**

Aug. 2014 “Biomarkers in Multiple Sclerosis” presented with Dr. David Wagner (A Diagnostic Mechanism Involving CD40 That Indicates a Therapeutic Approach for MS) Department of Neurology Grand Rounds, University of Colorado School of Medicine

Dec. 2014 “Conversations on MS” on behalf of the Rocky Mountain MS Center

Greeley, Colorado

June 2015 “Conversations on MS” on behalf of the Rocky Mountain MS Center

Colorado Springs, CO

Feb. 2016 “Conversation on MS” for Rocky Mountain MS Center Colorado Springs, CO

May 2016 “Symptom Management Case Study, Rocky Mountain MS Center Education Summit, Englewood, Colorado

Aug. 2016 “Integrating Research Metrics as Standard of Care within an Academic Multiple Sclerosis Center.” Department of Neurology Grand Rounds, University of Colorado School of Medicine

Oct. 2016 “ECTRIMS Update” Rocky Mountain MS Center Education Summit Golden, Colorado

Nov. 2016 “Multiple Sclerosis” lecture given at Neuroconference for Nurses

University of Colorado Hospital

Nov. 2016 “Experience of Using Rituximab at the University of Colorado” lecture given at “Genentech Day,” University of Colorado

Dec. 2016 “MS Research Updates” webinar presentation to Rocky Mountain MS Center.

Feb. 2017 “Conversation on MS” for Rocky Mountain MS Center, Colorado Springs, CO

July 2017 “Optic Neuritis: Differential Diagnosis Including MS and NMO and their Treatments” Colorado Vision Summit

Aug. 2017 “Multiple Sclerosis as a model for research” talk to Camp Neuro for high school students interested in medicine and neuroscience

Nov. 2017 “Conversation on MS” for Rocky Mountain MS Center, Pueblo, CO

Nov. 2017 “Multiple Sclerosis” lecture given to Nurses Neuroconference,

University of Colorado Hospital

June 2018 “Quality Improvement in Neuroimmunology” Neurology Research Retreat. Aurora, CO

July 2018 “Comparative Effectiveness in Multiple Sclerosis Disease Modifying Therapies” with Brandi Vollmer at Neurology Grand Rounds, University of Colorado, Aurora, CO.

Sept. 2018 “Update on Multiple Sclerosis” Grand Rounds, SCL Health St. Mary’s, Grand Junction, CO

Dec. 2018 “Conversation on MS” for Rocky Mountain MS Center, Lakewood, CO

April 2019 “Biomarkers in Neurological Disease: Taking advantage of the SIMOA Platform” presented with Dr. Tim Boyd at the Department of Neurology Grand Rounds, University of Colorado School of Medicine

Oct. 2019 “Conversation on MS” for Rocky Mountain MS Center, Colorado Springs, CO

Nov. 2019 “Conversation on MS” for Rocky Mountain MS Center, Lakewood, CO

Nov. 2020 “Conversation on MS” for Rocky Mountain MS Center, Virtual

Mar. 2020 “Conversation on MS” for Rocky Mountain MS Center, Denver, CO

Aug. 2021 “Conversation on MS” for Rocky Mountain MS Center, Virtual

Dec. 2021 “Conversation on MS” for Rocky Mountain MS Center, Virtual

Feb. 2022 Update on Multiple Sclerosis. Colorado meeting of the American College of Physicians. Colorado Springs, CO

Mar. 2022 “Update on Multiple Sclerosis” at the Advances in Pharmacotherapy meeting of the Colorado Pediatric Advanced Practice Conference (virtual)

Apr. 2022 “Research Update in MS” Rocky Mountain MS Center Spring Education Summit. Aurora, CO

June 2022 Rural Engagement Forum of the Rocky Mountain MS Center, La Junta, CO

Aug. 2022 “Neuroimmune Emergencies” neurology resident didactics, Aurora, CO

Sept. 2022 “Conversation on MS” for Rocky Mountain MS Center, Steamboat Springs, CO

Oct. 2022 “Hot Topics in MS: COVID-19 Update, Epstein Barr Virus, and Biomarkers” Rocky Mountain MS Center Fall Education Summit. Aurora, CO

Nov. 2022 “Introduction to MS” and “Symptom Management” Neurology resident didactics, Aurora, CO

Feb 2023 “Diagnosis and Management of MS” Neuropsych seminar, Aurora, CO

Apr. 2023 “What are BTK inhibitors and why are they different?” Rocky Mountain MS Center Spring Education Summit. Aurora, CO

May 2023 “Conversation on MS” for Rocky Mountain MS Center, Colorado Springs, CO

June 2023 “Multiple Sclerosis” lecture to physical therapy students, Aurora, CO

**REGIONAL (US):**

2011-2013 Research update lectures to patients sponsored by National MS Society

May 2013 “Neurological Complications of Lupus” 4th Annual “Behind the Mask” Lupus Educational Conference. Lupus Foundation of America, Heartland Chapter

Sept. 2014 “Choosing Wisely Brief Blast: What We Do and What’s New—Demyelinating Disease” The Neurohospitalist Society: 2nd Annual Meeting

April 2015 “Using Rituximab in the Treatment of MS” invited Professorship, University of Texas Southwestern

April 2017 “Multiple Sclerosis Case Studies” course co-director at 69th annual American Academy of Neurology (AAN) Meeting, Boston, MA

April 2017 “Best Of” Session: MS and CNS Inflammatory Disease co-chair during the 2017 Annual Meeting of the American Academy of Neurology (AAN) in Boston, MA

Oct. 2017 “Treating MS Early” Invited speaker to the Annual Banner Multiple Sclerosis Symposium. Phoenix, AZ

April 2018 “Multiple Sclerosis Overview I: Clinical Pearls” Course co-director at 70th annual American Academy of Neurology (AAN) Meeting, Los Angeles, CA

April 2018 Discussant presentation for session S8: “Progressive MS Therapies and Age-Dependent Factors in MS Therapy” at 70th annual American Academy of Neurology (AAN) Meeting, Los Angeles, CA

June 2018 “The Proof is in the Pudding: Evaluating Current Pharmacokinetic Data to Make Informed Disease Modifying Therapy Treatment Selection and Changes”

Aug. 2018 “CD20s, Biomarkers, and Neurofilament Light (NFL) in MS” Keynote presentation at the Autoinjector Bioequivalence Study for ofatumumab at the US investigator meeting (OMB157G2102). Dallas, TX

Oct. 2018 “Current and Future Disease Modifying Therapies” Invited speaker to the 2nd Annual Banner Multiple Sclerosis Symposium. Phoenix, AZ

May 2019 “Multiple Sclerosis Overview I: Clinical Pearls” Course co-director at 71st annual American Academy of Neurology (AAN) Meeting, Philadelphia, PA

June 2019 “Clinical Trial Design” lecture in the “The Evolving Research Landscape: Learning How to Understand, Design and Analyze Studies in MS Clinical Trial Design” course at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Seattle, WA

Oct. 2019 “Diagnosis and Misdiagnosis of Multiple Sclerosis“ Invited speaker to the 3rd Annual Banner Multiple Sclerosis Symposium. Phoenix, AZ

May 2020 MS Living Well Podcast Series Invited Expert

Sep. 2021 “Real-World Lessons into MS Care: B-cell depletion and De-escalation” Saint Louis University Neurology Grand Rounds

Oct. 2021 “Becoming a Successful Medical Director” Invited speaker to the ANA2021 Virtual Annual Meeting

Nov. 2021 “B-cell Depletion in MS Patient Care and De-escalation as a Treatment Approach” Washington University in St. Louis Neurology Grand Rounds

Feb. 2022 “Blood Neurofilament Light Levels for Monitoring Treatment Effects in Multiple Sclerosis” America’s Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Annual Meeting, West Palm Beach, FL

Apr. 2022 “Our evolving understanding of MS pathophysiology” 74th annual American Academy of Neurology (AAN) Meeting, Seattle, WA

June 2022 “Medication Disease State Interactions” at the Pharmacology Course at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), National Harbor, MD

Feb. 2023 “Battle of the Biomarkers: Assessing Key Factors in Prognosis, Monitoring, and Therapeutic Decision-Making for Disease Worsening in Multiple Sclerosis” at America’s Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Annual Meeting, San Diego, CA

Apr. 2023 “Evaluation of B-cell Abnormalities in Infants of Breastfeeding Mothers on anti-CD20 Therapies for Multiple Sclerosis” at American Academy of Neurology (AAN) Meeting, Boston, MA

May 2023 “Ublituximab Is Associated with Significant Improvement in Fatigue: Results from Ultimate I and II” at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Denver, CO.

May 2023 “Clinical Outcomes with Evobrutinib in Relapsing Multiple Sclerosis over 3.5 Years of Treatment: An Ongoing Phase 2 Open-Label Extension” at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Denver, CO.

**INTERNATIONAL:**

April 2016 “Multiple Sclerosis Case Studies” course co-director at 68th annual American Academy of Neurology (AAN) Meeting, Vancouver

May 2016 “Biomarcadores en Esclerosis Múltiple” at the 3rd National Congress MEXTRIMS (Comité Mexicano para el Tratamiento e Investigación en Esclerosis Múltiple). Guadalajara, Mexico

Oct. 2016 “Real World Experience Comparing dimethyl fumarate versus fingolimod” Biogen Tecfidera workshop, Zurich, SWZ

May 2017 “Terapeutica Dirigida a Inmunidad Humoral” at 4th National Congress MEXTRIMS (Comité Mexicano para el Tratamiento e Investigación en Esclerosis Múltiple). Leon, Mexico

Nov. 2017 “Biomarkers in Multiple Sclerosis and “B-Cell therapies in Multiple Sclerosis” 4th International symposium of Neurology and Neurocritical Care, Quito, Ecuador

May 2018 “Switch the terapias monoclonales” at the 5rd National Congress MEXTRIMS (Comité Mexicano para el Tratamiento e Investigación en Esclerosis Múltiple). Chihuahua, Mexico

Nov. 2018 “Secuenciación como base de la estrategia terapéutica” invited speaker at the 70th Sociedad Española de Neurologia (SEN) or Spanish Neurological Society, Sevilla, Spain.

Dec. 2018 “Comparative Effectiveness and Safety as Factors in Treatment Decision-Making” and the workshop “Treatment initiation and sequencing“ at the Merging Transatlantic Perspectives educational meeting. Budapest, Hungary

Feb. 2019 “Experiencia con Ocrelizumab en la Vida Real” Programa de Educación Médica Contínua en Panamá, Panamá

May 2019 “Conceptos de Tratamiento en Esclerosis Múltiple” at 6th National Congress MEXTRIMS (Comité Mexicano para el Tratamiento e Investigación en Esclerosis Múltiple). Mexico City, Mexico

May 2019 “Uso de Terapias “off-label” en EM” at 6th National Congress MEXTRIMS (Comité Mexicano para el Tratamiento e Investigación en Esclerosis Múltiple). Mexico City, Mexico

Sept. 2019 “Higher efficacy therapies appear to have a disproportionately larger effect in younger patients” *Brandi Vollmer MPH, Kavita V Nair PhD, Stefan H Sillau PhD, John Corboy MD, Timothy Vollmer MD, Enrique Alvarez MD/PhD**at*ECTRIMS 2019 in Stockholm, Sweden

Oct. 2019 “Experiencia con Ocrevus en la Vida Real” Continuing Medical Education Program at the Departamento de Neurología del Hospital San Juan de Dios, San José, Costa Rica

Dec. 2021 “The Next Generation in B-Cell Targeted Therapies” *at*MENACTRIMS 2021, Dubai, United Arab Emirates

Mar. 2022 “Kesimpta Real World Experience” Kesimpta Launch in Argentina Meeting. Argentina (virtual)

Mar. 2022 “ASCLEPIOS Studies and Patients Profile” Kesimpta y Mayzent Costa Rica Launch. Costa Rica (virtual)

May 2022 “Complete MS Control: Breaking news en seguridad y eficacia de Kesimpta" Mexico (virtual)

May 2022 Grand Rounds Presentation, “High Efficacy Treatment – Why? When? How?”

University of Coimbra, Coimbra, Portugal (virtual)

June 2022 “High Efficacy Treatment – Why? When? How?” Novartis Education Day for Neurologists from Mexico and Argentina. Aurora, CO

Aug. 2022 “Blood neurofilament light levels for Monitoring Treatment effects in Multiple Sclerosis” at the Stop MS: Every Minute is Freedom meeting. Santo Domingo, Dominican Republic

Aug. 2022 “COVID-19 Outcomes and Vaccination in People with Relapsing Multiple Sclerosis Treated with Ofatumumab” at the Stop MS: Every Minute is Freedom meeting. Santo Domingo, Dominican Republic

Sept. 2022 “¿Cuándo iniciar oportunamente un tratamiento de alta eficacia? Terapia individualizada” MSpecialist: Desafiando la Esclerosis Multiple Meeting. Cancun, Mexico

Sept. 2022 “¿Cómo los pacientes con EM adquieren discapacidad?” MSpecialist: Desafiando la Esclerosis Multiple Meeting. Cancun, Mexico

Oct. 2022 “Re-evaluating treatment decisions in the longer term” European Committee for Treatment & Research in Multiple Sclerosis (ECTRIMS) Congress. Amsterdam, The Netherlands.

Oct. 2022 “Balancing Risk Benefit in MS Treatment” at the Highly efficient individualized treatment in multiple sclerosis: perspectives and approaches event. European Committee for Treatment & Research in Multiple Sclerosis (ECTRIMS) Congress. Amsterdam, The Netherlands.

Dec. 2022 “Evolution of DMTs Towards NO Compromise” MS Expo. Cairo, Egypt (virtual)

Dec. 2022 “Early Use of HET in RRMS Patients” MS Expo. Cairo, Egypt (virtual)

Mar. 2023 “B-Cell Depletion And Comparison Between These Drugs“ and “De-Escalation as a Treatment Strategy – Taking Advantage of Using HET in Younger Patients” at the 5th MS Summit MAGNIMS. Cairo, Egypt.

Mar. 2023 “De-escalating and Discontinuation of DMTs - When and How To Do It” at the 6th Portuguese Multiple Sclerosis Study Group Meeting. Ílhavo, Portugal

Oct. 2023 “Biomarcadores en Esclerosis Múltiple” and “Experiencia mundial de Kesimpta a 5 años” at the Neurology and Neurosurgery Dominican Republic Congress (Congreso de la Sociedad Dominicana de Neurología y Neurocirugía) in Punta Cana, Dominican Republic

Nov. 2023 “Data a largo plazo de Kesimpta” at the Latin American Committee for Treatment and Research in Multiple Sclerosis (LACTRIMS), in Quito, Ecuador.

**12. TEACHING RECORD**

1995-1996 Telephone tutor, *“Hablemos Español”* Prairie Public Television and North Dakota Department of Instruction

2002 Lab teaching assistant, Neuroanatomy, winter quarter University of Colorado Health Sciences Center

2010 Neuroimmunology lecture to PGY2 residents as part of Summer Stock Series

Washington University, St. Louis, MO

2010-2013 Multiple Sclerosis lecture to PT/OT students, Neuroscience Block

Washington University, St. Louis, MO

March 2012 “Are You Afraid of The Big Bad Wolf (A Case of CNS Lupus)? Department of Rheumatology, Washington University, St. Louis, MO

March 2012 “32-Year-Old Man Presenting with Progressive Tingling and Tremor in Hands and Burning Sensation in Abdomen” Resident CPC discussant, Department of Neurology Grand Rounds, Washington University, St. Louis, MO

Sept. 2013 “Updates in the Treatment of Multiple Sclerosis” Grant Rounds, Department of Neurology, University of Colorado School of Medicine

2014 “Multiple Sclerosis” lecture to Physical Medicine and Rehabilitation Residents, University of Colorado School of Medicine

2014 “Introduction to MS” lecture to Neurology Residents,

University of Colorado School of Medicine

Aug. 2014 “Biomarkers in Multiple Sclerosis” presented with Dr. David Wagner (A Diagnostic Mechanism Involving CD40 That Indicates a Therapeutic Approach for MS) Department of Neurology Grand Rounds University of Colorado School of Medicine

Sept. 2014 “Choosing Wisely Brief Blast: What We Do and What’s New – Dymyelinating Disease” The Neurohospitalist Society: 2nd Annual Meeting

June 2015 “Multiple Sclerosis” lecture to Rehabilitation Residents, University of Colorado

School of Medicine

July 2015 “Using Rituximab in the Treatment of MS” Grand Rounds, Department Of Neurology, University of Colorado School of Medicine

July 2015 “Autoimmune and Inflammatory Disease” Lecture to Camp Neuro University of Colorado School of Medicine

Aug. 2015 “Neuroimmune Emergencies” Lecture to Neurology Residents, University of Colorado School of Medicine

Sept. 2015 “Updates in MS” Internal Medicine Grand Rounds

University of Colorado School of Medicine

Jan. 2016 Intrathecal Baclofen Pumps at UCH presentation to Neuro Study Group

University of Colorado School of Medicine

Feb. 2016 “Introduction to Multiple Sclerosis” talk to Neurology Residents

Mar. 2016 “Symptom Management” talk to Neurology Residents

July 2016 “Multiple Sclerosis” lecture to Physical Therapy students

University of Colorado School of Medicine

Aug. 2016 “Integrating Research Metrics as Standard of Care within an Academic Multiple Sclerosis Center.” Department of Neurology Grand Rounds

University of Colorado School of Medicine

Sept. 2016 Pathology of MS lecture to physical Therapy students

University of Colorado School of Medicine

Dec. 2017 “The role of B and T cells in Multiple Sclerosis” in the Molecules to Medicine course for

-Dec 2020 the Medical Scientist Training Program.

Dec. 2017 “Introduction to Multiple Sclerosis” and “Symptom Management” talks to

-present Neurology Residents

July 2017 “Multiple Sclerosis” lecture to Neuropsychology Group

-present University of Colorado School of Medicine

July 2017 “Multiple Sclerosis” lecture to Physical Therapy students

-July 2020 University of Colorado School of Medicine

July 2023

2014-2023 Neuroimmunology Block Director for Neurology Residents

University of Colorado School of Medicine

2022-present ECHO hub director for the mountain National MS Society ECHO project

**13. MENTORING**

2010-present Resident and medical students during their clinical rotations

Washington University, St. Louis, MO and University of Colorado School of Medicine

2011 Mentor with Dr. Anne H. Cross for undergraduate student, Wilnelia Medina, during her summer research as part of the BioMedRAP program at Washington University in St. Louis. Subsequently attended San Juan Bautista School of Medicine in Puerto Rico

2012 Mentor with Dr. Anne H. Cross for medical student Divya Gupta during her summer research as part of the Foundation of the Consortium of MS Centers Medical student Research Scholarship at Washington University St. Louis, MO. Subsequently attended Northeast Ohio Medical University (NEOMED)

2013-2014 Mentor for Melissa R. Mahoney for Master’s of Science program at Regis University “Research should be conducted to establish clinical biomarkers for MS medication cessation” Graduated May, 2014. Subsequently attended Western University College of Osteopathic Medicine of the Pacific

2013-2017 Advisor to Joann Mueller in her medical school capstone project through 2017. Joann focused on the outcomes in MS patients who discontinue medications

2013-present Mentoring neurology, internal medicine, and psychiatry residents in Multiple Sclerosis/Neuroimmunology clinic at Denver Health twice monthl. Also worked with residents doing Neuroimmunology electives at the University of Colorado

2014-2015 Mentor for Julie Seibert, MD, for Neuroimmunology fellowship at the University of Colorado, Denver. Graduated April, 2015

2014-2015 Mentored Halie Willbanks for her capstone project focusing on MS in Modern Human Anatomy. Her work involved creating 3D reconstructions of MS brains

2014-2015 Mentor for Lorraina J. Robinson for her Master’s of Science program at Regis University “Biomarkers in Multiple Sclerosis” Graduated May, 2015

2014-2018 Member of doctoral committee for Mark Manago, thesis advisor – Jeffrey Hebert Graduate program: Physical Therapy. University of Colorado, Denver

2015-2016 Mentored graduate student Maria Mulligan-Buckmiller, Regis University in her Master’s studies. Maria examined clinical outcomes for MS patients on Natalizumab. Subsequently attended New York Medical College

2015-2016 Mentor to Neuroimmunology/Neuro ID fellow, Daniel Smith, in clinic and developed research project on Neurosarcoid experience at UCD Graduate program. University of Colorado, Denver

2015-2018 Academic Clinical Mentor for Thomas Vogler, MSTP student

2015-2018 Academic Clinical Mentor for John Soltys, MSTP student

2016 Mentor to Ian Shelton during summer research work as part of the Rocky Mountain MS Center Summer Scholarship Program. His work focused on CD40+ cells in MS CSF/blood

2016-2017 Mentor for Siamac Esfandi, MD, for Neuroimmunology fellowship at the University of Colorado Denver—graduated June 2017. He is not a neuroimmunologist in Denver.

2016-2017 Mentor to Jia Lin, MD/MPH during research year. Jia presented a poster at AAN on the NueroQuant analysis of MRIs of MS patients and subsequently attended Wayne State University for Neurology Residency, USC for neuroimmunology fellowship, and is now a neuroimmunology faculty member at the University of Texas in Houston

2016-2019 Mentor to Markus Hannan through Clinical Coaching Program

2017-2019 Mentor to Neuroimmunology Fellow, Lindsay Horton

2018-2019 Mentor to Neuroimmunology Fellow, Krystof Romanowski

2018-2019 Mentor to Isaiah Kletenik, Neurology resident for his senior project. “Subjective Cognitive Impairment and Focal Brain Volume Atrophy in Multiple Sclerosis “ Selected as the best presentation at the neurology research retreat in June, 2018. Now as a neurobehavioral fellow leading to a publication.

2019 Mentor to Sam Gendelman during summer research work as part of the Rocky Mountain MS Center Summer Scholarship Program. His work focused on Neurofilament light chain levels in patients with multiple sclerosis treated with anti-CD20 medications

2019 Mentor to Nassim Zanganeh during summer research work as part of the Multiple Sclerosis Mentorship Program for Medical Students through the National Multiple Sclerosis Society. Her work focused on cytokine changes after rituximab and ocrelizumab infusions in patients with multiple sclerosis to understand differences between these medications and infusion related reactions.

2019-2020 Mentor to Neuroimmunology Fellow, Anna Shah

2020-2021 Mentor to Neuroimmunology Fellow, Baber Kahn and Ryan Kammeyer

2022-2023 Mentor to Neuroimmunology Fellows, Anthony Declusin and Andrew Wolf

**14. GRANT SUPPORT – CURRENT – AS PRIMARY INVESTIGATOR**

* A phase III, multicentre, randomized, parallel-group, double-blinded, placebo controlled A randomized, double-blind, double-dummy, parallel-group study to evaluate the efficacy and safety of Ocrelizumab in Comparison to Interferon Beta-1A (Rebif) in patients with relapsing MS.

**ORATORIO, WA25046**

Role: PI

Funding Source: Hoffman-LaRoche Inc

Grant Number: 11-1327

Dates: 01/01/2011-12/31/2022

Direct Costs: 356,000.85

Total Costs: $481,082.23

* A multicenter, global, retrospective, observational study to characterize real-world clinical outcomes. An open-label, single-arm study to evaluate the effectiveness and safety of ocrelizumab in patients with early stage relapsing remitting multiple sclerosis.

**ENSEMBLE, MA30143**

Role: PI

Funding Source: Genentech

Grant Number: IRB 16-2527

Dates: 2/1/2017 – 4/16/2021

Direct Costs: $1,218,396.54

Total Costs: $1,646,481.81

* An Open Label Extension of the TG1101-RMS201 Trial, for subjects currently enrolled in TG1101-RMS201 treated with Ublituximab for relapsing forms of MS.

Role: PI

Funding Source: TG Therapeutics, Inc.

Grant Number: IRB 17-1395

Dates: 10/16/2017-11/30/2024

Direct Costs: $ 162,632.65

Total Costs: $219,773.85

* Characterizing GI events in early versus recent TECFIDERA cohorts at two large MS centers.

Role: PI

Funding Source: Biogen, Inc.

Grant Number: IRB 18-1097

Dates: 06/13/2018-06/12/2023

Direct Costs: $146,120.40

Total Costs: $202,945.00

* An Open Label, Single Arm, Multi-center Extension Study evaluating long-term safety, tolerability and effectiveness of Ofatumumab in subjects with relapsing MS.

Role: PI

Funding Source: Novartis

Grant Number: IRB 18-2059

Dates: 08/24/2018-06/08/2026

Direct Costs: $168,472.11

Total Costs: $233,989.04

* A Single-arm, prospective, multi-centre, open-label study to evaluate ofatumumab treatment effectiveness and patient reported outcomes in patients with relapsing MS transitioning from dimethyl fumarate or fingolimod therapy.

Role: PI

Funding Source: Novartis

Grant Number: IRB 20-0705

Dates: 03/01/20-08/01/2024

Direct Costs: $55,466.21

Total Costs: $77,036.40

* Cerebrospinal fluid-biomarkers-based diagnostic and prognostic models for MS

Role: PI

Funding Source: Wash U St Louis

Grant Number: IRB 20-1025

Dates: 04/2020-03/31/2023

Direct Costs: $29,154.75

Total Costs: $32,394.17

* A Phase 3, randomized, double-blind, efficacy and safety study comparing SAR442168 to placebo in participants with nonrelapsing secondary progressive multiple sclerosis.

(HERCULES)

Role: PI

Funding Source: Sanofi

Grant Number: IRB 20-1047

Dates: 06/18/2021-06/17/2026

Direct Costs: $ 42,074.64

Total Costs: $58,437.00

* A Phase 3, randomized, double-blind, efficacy and safety study comparing SAR442168 to placebo in participants with primary progressive multiple sclerosis

(PERSEUS)

Role: PI

Funding Source: Sanofi

Grant Number: IRB 20-1100

Dates: 07/22/21-07/22/26

Direct Costs: $10,843.20

Total Costs: $15,060.00

* A Phase 3, randomized, double-blind, efficacy and safety study comparing SAR442168 to teriflunomide (Aubagio) in participants with relapsing forms of multiple sclerosis

(GEMINI 1)

Role: PI

Funding Source: Sanofi

Grant Number: IRB 20-1101

Dates: 12/01/20-04/11/24

Direct Costs: $27,241.20

Total Costs: $37,835.00

* A Phase 1, two-part, open-label dose-escalation and double-blind, placebo-controlled dose-expansion study with an open-label extension to evaluate the safety and efficacy of ATA188 in subjects with progressive MS

Role: PI

Funding Source: Atara

Grant Number: IRB 20-0454

Dates: 07/02/20-07/01/25

Direct Costs: $48,099.79

Total Costs: $66,805.26

* Central Vein Sign: A Diagnostic Biomarker in MS

Role: PI

Funding Source: Cleveland Clinic

Grant Number: IRB 20-1000

Dates: 07/01/20-06/30/23

Direct Costs: $46,714.81

Total Costs: $84,170.82

* A Phase IIIB Multicenter, randomized, double-blind, controlled study to evaluate the efficacy, safety and pharmacokinetics of a higher dose of Ocrelizumab in adults with primary progressive multiple sclerosis

Role: PI

Funding Source: Genentech/Roche

Grant Number: IRB 20-1852

Dates: 03/18/21-03/17/23

Direct Costs: $16,542.72

Total Costs: $22,976.00

* A Phase III Multicenter, randomized, double-blind, double-dummy, parallel group study to evaluate the efficacy and safety of Fenebrutinib in adults with relapsing MS

Role: PI

Funding Source: Genentech/Roche

Grant Number: IRB 20-2036

Dates: 04/09/21-04/08/26

Direct Costs: $86,299.68

Total Costs: $119,444

* A Single-arm, prospective, multi-center, study to explore maintained efficacy with Ofatumumab therapy in patients with relapsing MS who discontinue intravenously delivered anti-CD20 monoclonal antibody (aCD20 mAb) therapy (OLIKOS)

Role: PI

Funding Source: Novartis

Grant Number: IRB 20-2135

Dates: 02/01/21-01/31/24

Direct Costs: $158,855.38

Total Costs: $220,632.47

* Retrospective Evaluation of De-escalation from anti-CD20 Therapies to Fumarates

Role: PI

Funding Source: Biogen/Investigator initiated

Grant Number: IRB 20-3029

Dates: 12/23/21-12/22/26

Direct Costs: $96,915.46

Total Costs: $134,604.80

* A Phase III Multicenter, randomized, double-blind, double-dummy, parallel-group study to evaluate the efficacy and safety of Fenebrutinib compared with Ocrelizumab in adult patients with primary progressive multiple sclerosis

Role: PI

Funding Source: Genetech/Roche

Grant Number: IRB 21-2663

Dates: 04/04/2021-04/04/2026

Direct Costs: $179,979.06

Total Costs: $249,970.91

* A Randomized, double-blind, double-dummy, parallel-group study, comparing the efficacy and safety of Remibrutinib 100mg b.i.d. versus teriflunomide 14 mg q.d. in participants with relapsing MS, followed by extended treatment with open-label Remibrutinib

Role: PI

Funding Source: Novartis

Grant Number: IRB 21-4825

Dates: 09/01/2022-01/30/2031

Direct Costs: $

Total Costs: $

(SIV just took place)

* A Multi-center, single-arm, open-label, extension, rollover study to evaluate the long-term safety and efficacy of Ocrelizumab in patients with MS (Olero)

Role: PI

Funding Source: Roche/Genentech

Grant Number: IRB 22-0480

Dates: 09/29/22-09/28/2027

Direct Costs: $178,227.36

Total Costs: $247,538

(newly funded)

* Long-term, prospective, multinational, parallel-cohort study monitoring safety in patients with MS newly started on Fingolimod once daily or treated with another approved disease modifying therapy. **PASSAGE, CFTY720D2403**

Role: PI

Funding Source: Novartis

Grant Number: IRB 15-0657

Dates: 12/12/2016 – 5/20/2023

Direct Costs: $46,718.00

Total Costs: $64,886.12

* A randomized, double-blind, double-dummy, parallel-group study comparing the efficacy and safety of Ofatumumab administered subcutaneously versus teriflunomide administered orally in patients with relapsing forms of multiple sclerosis. **COMB157G2302**

Role: PI

Funding Source: Novartis

Grant Number: IRB 16-0976

Dates: 4/11/2017 – 4/1/2020

Direct Costs: $191,340.13

Total Costs: $265,750.18

* Rocky Mountain Multiple Sclerosis Center Biorepository for the Study of Neuroimmunological Disorders.

Role: PI – Investigator Initiated

Funding Source: Rocky Mountain MS Center

Grant Number: IRB 12-0968

Dates: 1/1/2015—present

Direct Costs: $44,120

Total Costs: $44,120 (awarded for 2022/2023)

* Phase III:  Ublituximab in Multiple Sclerosis Treatment Effects. **ULTIMATE II, TG1101-RMS302**

Role: PI

Funding Source: TG Therapeutics

Grant Number: IRB 17-1170

Dates: 11/27/2017 – 11/27/2020

Direct Costs: $120,042.35

Total Costs: $166,725.48

* Risk Factors in Early Multiple Sclerosis (RisE-MS).

Role: PI. CO-I John Corboy and Jill Norris – Investigator Initiated

Funding Source: Rocky Mountain MS Center, Philanthropy

Grant Number: IRB 17-1884

Dates: 1/1/2018 – 1/1/2021

Direct Costs: $167,708.61

Total Costs: $232,928.62

* A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study in Subjects With Relapsing Multiple Sclerosis to Evaluate the Efficacy and Safety of BIIB033 as an Add-On Therapy to Anti-Inflammatory Disease-Modifying Therapies. **215MS202. AFFINITY**

Role: PI

Funding Source: Biogen

Grant Number: IRB 18-0482

Dates: 6/28/2018 – 6/27/2023

Direct Costs: $34,376.40

Total Costs: $47,745.00

* Determining the Effectiveness of early intensive versus escalation approaches for the treatment of relapsing remitting multiple sclerosis **(DELIVER MS) MS-1610-37047**

Role: PI

Funding Source: Cleveland Clinic - PCORI

Grant Number: IRB 18-1633

Dates: 2/1/2018 – 1/31/2023

Direct Costs: $202,432

Total Costs: $283,405

* An open-label, single arm, multi-center extension study evaluating long-term safety, tolerability and effectiveness of Ofatumumab in subjects with relapsing multiple sclerosis.

Role: PI

Funding Source: Novartis

Grant Number: IRB 18-2059

Dates: 8/24/2018 – 6/8/2022

Direct Costs: $168,472.11

Total Costs: $233,989.04

* Feasibility of the Multiple Sclerosis Performance Test (MSPT) device for assessment of functional performance measures in MS patients.

Role: PI

Funding Source: Biogen

Grant Number: IRB 19-1192

Dates:

Direct Costs: $258,672

Total Costs: $331,100

* An open label extension study of Ubituximab in subjects with relapsing multiple sclerosis.

Role: PI

Funding Source: TG Therapeutics

Grant Number: IRB 19-2378

Dates:

Direct Costs: Pending

Total Costs: Pending

**14.1. GRANT SUPPORT – CURRENT – AS Co-INVESTIGATOR (selected studies only)**

* Detection and Risk in Early MS (DREAMS)

Role: Co-PI; PI: Teri Schreiner

Funding Source: NMSS

Grant Number: IRB 19-0393

Dates: 10/01/21-10/01/23

Direct Costs: 296,996.32

Total Costs: 329,995.91

* Evaluating the tolerability and safety profile of switching from rituximab to ocrelizumab: A real world evaluation of patients with relapsing forms of multiple sclerosis.

Role: Co-PI; PI Timothy Vollmer

Funding Source: Genentech

Grant Number: IRB 16-1354

Dates: 5/19/2017 – 5/18/2020

Current Percent Effort: 3%

Direct Costs: 1,092,300

Total Costs: 1,359,714

* Evaluation of shorter infusion times with ocrelizumab in patients with relapsing-remitting multiple sclerosis. Role: Co-PI; PI Timothy Vollmer

Funding Source: Genentech

Grant Number: 18-1262

Dates: 5/30/2017 – 5/29/2022

Current Percent Effort: 3%

Direct Costs: $312,500

Total Costs: $400,000

* Safety and Efficacy study of Elezanumab (ABT-555) in progressive forms of multiple sclerosis.

Role: Co-PI; PI: Amanda Piquet, M.D.

Funding Source: Abbvie

Grant Number: IRB 18-2152

Dates: 8/12/2019 – 8/11/2024

Direct Costs: $1,030,310

Total Costs: $1,318,798

* Safety and efficacy study of Elezanumab (ABT-555) in relapsing forms of multiple sclerosis.

Role: Co-PI; PI: Amanda Piquet, M.D.

Funding Source: Abbvie

Grant Number: IRB 18-2451

Dates: 8/12/2019 – 8/11/2024

Direct Costs: $1,030,310

Total Costs: $1,318,798

**14.2. GRANT SUPPORT – PENDING – AS PRIMARY INVESTIGATOR/CO-INVESTIGATOR**

* Characterizing the Cytokine Profile Before and After anti-CD20 and anti-CD52 Infusions: A Comparison of Rituximab, Ocrelizumab and Alemtuzumab

Role: PI

Funding Source: Investigator Initiated

Grant Number: IRB 18-1968

Dates:

Direct Costs:

Total Costs:

* Multicenter, Randomized, Double-blind, Placebo-controlled Study to Evaluate Efficacy, Safety, and Tolerability of IMU-838 in Patients with Progressive Multiple Sclerosis

Role: PI

Funding Source: Immunic Therapeutics

Grant Number: IRB 22-1607

Dates:

Direct Costs:

Total Costs:

**14.3. GRANT SUPPORT – PAST – AS PRIMARY INVESTIGATOR/CO-INVESTIGATOR**

* Does Long-Term Natalizumab (NTZ) Therapy Normalize Brain Atrophy Rates and Quality of Life (QOL) in Relapsing Remitting Multiple Sclerosis (RRMS)? A Longitudinal Study Using Whole Brain, Neocortical and Subcortical Atrophy Rates and Patient Reported Outcomes (PROs). **US-TYS-13-10470**

Role: PI – Investigator Initiated

Funding Source: Biogen

Grant Number: IRB 13-2927

Dates: 11/01/2013 – 10/31/2020

Direct Costs: $601,027

Total Costs: $757,294

* Comparing effectiveness on long term Gilenya (fingolimod) vs Copaxone (glatiramer acetate) on brain atrophy rates and cognition and patient reported outcomes in patients with MS

Role: Co-PI; PI: Kavita Nair

Funding Source: Novartis

Grant Number: IRB 14-0774

Dates: 06/01/14—present

Percent Effort: 3%

Direct Costs: $575,727

Total Costs: $725,416

* A multicenter, global, retrospective, observational study to characterize real-world clinical outcomes in patients with with relapsing-remitting multiple sclerosis treated with disease-modifying therapies (Tecfidera®, Copaxone®, Aubagio®, or Gilenya®). **EFFECT**, **109MS421**

Role: PI

Funding Source: Biogen

Grant Number: IRB 16-0836

Dates: 10/6/2016 – 10/5/2019

Direct Costs: $95,844

Total Costs: $120,764

* Multiple Sclerosis Wellness Clinic

Role: Co-PI; PI Timothy Vollmer

Funding Source: Rocky Mountain MS Center/Heuga Foundation

Grant Number: N/A – clinical program

Dates: 3/1/2017 – 2/28/2018

Percent Effort: 2.5%

Direct Costs: 138,305

Total Costs: 138,305

* Retrospective creation of a multi-center database to study real world brain changes and patient outcomes in MS patient on fingolimod

Role: PI

Funding Source: IMS AG

Grant Number: IRB 15-2165

Dates: 12/01/15—1/11/18

Direct Costs: $18,214

Total Costs: $22,950

* A Double-Blind, Placebo controlled, Single Ascending Intravenous Infusion Study of rHIgM22 in Subjects with Multiple Sclerosis Immediately Following a Relapse. **IM22-MS**

Role: PI

Funding Source: Acorda

Grant Number: IRB 15-0293

Dates: 7/15/2015 —7/14/2018

Direct Costs: $314,071

Total Costs: $395,730

* A multicenter, retrospective, observational study evaluating real-world clinical outcomes in relapsing-remitting multiple sclerosis patients who transition from Tysabri to Tecfidera. **STRATEGY, 109MS412**

Role: PI

Funding Source: Biogen

Grant Number: IRB 14-1078

Dates: 9/9/2014—9/8/2017

Direct Costs: $58,492

Total Costs: $73,700

* A Phase4 Multicenter, Open-Label, Single Arm Study to Evaluate Switching from BRACET/Gilenya to Natalizumab in Subjects with Relapsing Forms of Multiple Sclerosis (MS). **ESCALATE, 101MS409**

Role: PI

Funding Source: Biogen

Grant Number: IRB 14-1295

Dates: 03/2015—07/2016

Direct Costs: $89,475

Total Costs: $112,738

* A Multicenter, Randomized, Open-Label Study to Assess the Impact of Natalizumab versus Fingolimod on Central Nervous System Tissue Damage and Recovery in Active Relapsing-Remitting Multiple Sclerosis Subjects. **REVEAL, 101MS408**

Role: PI

Funding Source: Biogen

Grant Number: IRB 14-1729

Dates: 4/01/2015—3/01/16

Direct Costs: $211,367

Total Costs: $266,323

* The impact of switching from Tysabri to Gilenya on imaging and clinical effectiveness outcomes. **CFTY720DUS8T**

Role: PI – Investigator Initiated

Funding Source: Novartis

Grant Number: IRB 14-2349

Dates: 2/15/2015—8/15/16

Direct Costs: $87,466

Total Costs: $110,207

* Comparison of First vs. Second Line Use of Gilenya on Real World Clinical Efficacy and MRI Based Outcomes: A Two-Site Retrospective Study

Role: Co-PI; PI: Kavita Nair

Funding Source: Novartis

Grant Number: IRB 14-0774

Dates: 9/26/2014 – 12/31/2017

Percent Effort: 5%

Direct Costs: $157,737

Total Costs: $198,749

* NeuroNEXT NN102 A Randomized, double-blind, placebo-controlled study to evaluate the safety, tolerability, and activity of Ibudilast (MN-166) in subjects with Progressive Multiple Sclerosis

Role: PI

Funding Source: NIH/NINDS

Grant Number: IRB 13-0389

Dates: 3/31/14-3/9/2017

Direct Costs: $126,023

Total Costs: $193,090

**15. BIBLIOGRAPHY—PEER-REVIEWED PUBLICATIONS (ORCID iD 0000-0001-5854-9643)**

1. [Clayton DA, Mesches MH,](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:11978838&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true) **[Alvarez E](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:11978838&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)**[, Bickford PC, Browning MD. A Hippocampal NR2B Deficit Can Mimic Age-related Changes in Long-term Potentiation and Spatial Learning in the Fischer 344 Rat.](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:11978838&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true) *[Journal of Neuroscience](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:11978838&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)* [22(9): pp 3628-37, May 1, 2002](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:11978838&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
2. [Buytaert-Hoefen KA, Alvarez E, Freed CR. Generation of Tyrosine Hydroxylase Positive Neurons from Human Embryonic Stem Cells after Coculture with Cellular Substrates and Exposure to GDNF. *Stem Cells* 22: pp 669-674, September, 2004](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:15342931&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
3. [**Alvarez** **E**, Zhou W, Witta SE, Freed CR. Characterization of the Bex gene family in humans, mice, and rats. *Gene* 357(1): pp 18-28, August 29, 2005](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:15958283&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
4. [Klawiter EC, **Alvarez E**, Xu J, Paciorkowski AR, Zhu L, Cross AH, Naismith RT. NMO-IgG Detected in CSF in Seronegative Neuromyelitis Optica. *Neurology* 72(12): pp 1101-1103, March 24, 2009](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:19307546&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
5. [Wu GF, **Alvarez** **E**. The immunopathophysiology of multiple sclerosis. *Neurologic Clinics* 29(2): pp 257-78, May, 2011. Review](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:21439440&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
6. [Clifford DB, Ances B, Costello C, Rosen-Schmidt S, Andersson M, Parks D, Perry A, Yerra R, Schmidt R, **Alvarez** **E**, Tyler KL. Rituximab-Associated Progressive Multifocal Leukoencephalopathy in Rheumatoid Arthritis. *Archives of Neurology* 68(9): pp 1156-64. September, 2011](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:21555606&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)
7. **Alvarez E** and Cross AH. Update on Multiple Sclerosis. *Clincal Laboratory International*: pp 8-10. November, 2011. Review
8. Qian P, Lancia S, **Alvarez E**, Klawiter EC, Cross AH, Naismith RT.Pain Frequency and Treatment Response in Neuromyelitis Optica. *Archives of Neurology* 69(11): pp 1482-7. November, 2012
9. Leo H. Wang LH, Bucelli RC, Patrick E, Rajderkar D, **Alvarez E**, Lim MM, DeBruin G, Sharma V, Dahiya S, Schmidt RE, Benzinger TS, Ward BA, Ances BM. [Role of Magnetic Resonance Imaging, Cerebrospinal Fluid, and Electroencephalogram in Diagnosis of Sporadic Creutzfeldt-Jakob Disease](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:22968768&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). *Journal of* *Neurology* 260(2): pp 498-506. February, 2013
10. **Alvarez E**, Piccio L, Mikesell RJ, Klawiter EC, Parks BJ, Naismith RT, Cross AH. [CXCL13 is a biomarker of inflammation in multiple sclerosis, neuromyelitis optica, and other neurological conditions](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:23322500&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Multiple Sclerosis Journal 19(9): pp 1204-8. Aug 2013.
11. Fenoglio C, Ridolfi E, Cantoni C, De Riz M, Bonsi R, Serpente M, Villa C, Pietroboni AM, Naismith RT, **Alvarez E**, Bresolin N, Cross AH, Piccio L, Galimberti D, Scarpini E. [Decreased circulating miRNA levels in patients with multiple sclerosis](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:24277735&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). *Multiple Sclerosis Journal* 19(14): pp 1938-42. December 2013
12. Seibert J., **Alvarez E**. [Severe anemia in a patient with multiple sclerosis treated with natalizumab](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:25713115&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). *Neurology* 84(8) pp 861. February, 24, 2015
13. Hampton CW, Galperin D, **Alvarez E**, West MS. [Encephalomyeloneuropathy with CRMP-5 antibodies in a patient with a primary mediastinal serinoma](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:25798447&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Neurol Neuroimmunol Neuroinflamm(2)3 pp e82. June, 2015. DOI 10.1212/NXI.0000000000000082
14. **Alvarez E**. [Should we start evaluating intrathecal IgM production clinically?](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:25557488&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true) *Eur J Neurol*(22)8 pp1143-4 Aug, 2015. DOI10.1111/ene.12625
15. Patel KR, Luo J, **Alvarez E**, Piccio L, Schmidt RE, Yablonskiy DA, Cross AH[. Detection of cortical lesions in multiple sclerosis: A new imaging approach](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:28607704&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler J Exp Transl Clin(1) September 24, 2015. DOI 10.1177.2055217315606465
16. **Alvarez E**, Piccio L, Mikesell RJ, Trinkaus K, Parks BJ, Naismith RT, Cross AH. [Predicting optimal response to B-cell depletion with rituximab in multiple sclerosis using CXCL13 index, magnetic resonance imaging and clinical measures](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:28607711&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler J Exp Transl Clin(1) December 24, 2015. DOI 10.1177/2055217315623800
17. Chen D, Ireland S, Remington G, **Alvarez E**, Racke M, Greenberg B, Frohman E, Monson N[. Cd40-Mediated NF-kappaB Activation in B Cells is Increased in Multiple Sclerosis and Modulated by Theraputics](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:27798157&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). *J Immunol 11(197*): 4257-4265 Dec 2016
18. Jones D, **Alvarez E**, Selva S, Gilden D, Nagel MA. [Proinflammatory cytokines and matrix metalloproteinases in CSF of patients with VZV vasculopathy. N](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:27340684&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true)eurol Neuroimmunol Neuroinflamm. 2016 Jun 13;3(4):e246
19. [Bove R](https://www.ncbi.nlm.nih.gov/pubmed/?term=Bove%20R%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Elsone L](https://www.ncbi.nlm.nih.gov/pubmed/?term=Elsone%20L%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [**Alvarez E**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Alvarez%20E%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Borisow N](https://www.ncbi.nlm.nih.gov/pubmed/?term=Borisow%20N%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Cortez MM](https://www.ncbi.nlm.nih.gov/pubmed/?term=Cortez%20MM%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Mateen FJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mateen%20FJ%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Mealy MA](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mealy%20MA%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Mutch K](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mutch%20K%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Tobyne S](https://www.ncbi.nlm.nih.gov/pubmed/?term=Tobyne%20S%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Ruprecht K](https://www.ncbi.nlm.nih.gov/pubmed/?term=Ruprecht%20K%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Buckle G](https://www.ncbi.nlm.nih.gov/pubmed/?term=Buckle%20G%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Levy M](https://www.ncbi.nlm.nih.gov/pubmed/?term=Levy%20M%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Wingerchuk DM](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wingerchuk%20DM%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Paul F](https://www.ncbi.nlm.nih.gov/pubmed/?term=Paul%20F%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Cross AH](https://www.ncbi.nlm.nih.gov/pubmed/?term=Cross%20AH%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Weinshenker B](https://www.ncbi.nlm.nih.gov/pubmed/?term=Weinshenker%20B%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Jacob A](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jacob%20A%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Klawiter EC](https://www.ncbi.nlm.nih.gov/pubmed/?term=Klawiter%20EC%5BAuthor%5D&cauthor=true&cauthor_uid=28382320), [Chitnis T](https://www.ncbi.nlm.nih.gov/pubmed/?term=Chitnis%20T%5BAuthor%5D&cauthor=true&cauthor_uid=28382320). [Female hormonal exposures and neuromyelitis optica symptom onset in a multicenter study](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:28382320&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). [Neurol Neuroimmunol Neuroinflamm.](https://www.ncbi.nlm.nih.gov/pubmed/?term=alvarez+chitnis) 2017 Nov 28;89(22):2238-2244
20. Vollmer B, Nair KV, Sillau SH, Corboy J, Vollmer T, **Alvarez E**. [Comparison of Fingolimod and Dimethyl Fumarate in the Treatment of Multiple Sclerosis: Two Year Experience](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:28839949&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler J Exp Transl Clinvol. 3, 3, 2017 Aug 17;3(3):2055217317725102
21. Klawiter EC, Bove R, Elsone L, **Alvarez E**, Borisow N, Cortez M, Mateen FJ, Mealy MA, Sorum J, Mutch K, Tobyne S, Ruprecht K, Buckle G, Levy M, Wingerchuk DM, Paul F, Cross AH, Jacob A, Chitnis T, and Weinshenker BG. [High Risk of Post-partum Relapses in Neuromyelitis Optica Spectrum Disorder](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:29093070&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Neurology. 2017 Nov 28;89 (22):2238-2244.
22. Col NF, Solomon AJ, Springmann V, Garbin CP, Ionete C, Pbert L, **Alvarez E**, Tierman B, Hopson A, Kutz C, Berrios Morales I, Griffin C, Phillips G, Ngo LH[. Whose Preferences Matter? A Patient-Centered Approach for Eliciting Treatment Goals](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:28806143&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Med Decis Making. 2018 Jan;38(1):44-55. doi: 10.1177/0272989X17724434.
23. Almuklass AM, Davis L, Hamilton L, Hebert JR, **Alvarez E**, Enoka RM. [Pulse Width Does Not Influence the Gains Achieved With Neuromuscular Electrical Stimulation in People With **Multiple Sclerosis**: Double-Blind, Randomized Trial.](https://www.ncbi.nlm.nih.gov/pubmed/29366377) Neurorehabilitation and Neural Repair Neurorehabil Neural Repair. 2018 Jan;32(1):84-93. doi: 10.1177/1545968317753681.
24. Col NF, Solomon AJ, Springmann V, Garbin CP, Ionete C, Pbert L, **Alvarez E**, Tierman B, Hopson A, Kutz C, Berrios Morales I, Griffin C, Phillips G, Ngo LH. [A Novel Tool to Improve Shared Decision Making and Adherence in **Multiple Sclerosis**: Development and Preliminary Testing.](https://www.ncbi.nlm.nih.gov/pubmed/31667351) International Journal of MS Care 2018 Nov-Dec;20(6):260-267. doi: 10.7224/1537-2073.2017-021.
25. Vollmer B, Ontaneda D, Bandyopadhyay A, Cohn S, Nair K, Sillau S, Bermel R, Corboy J, Fox R, Vollmer T, Cohen J, **Alvarez E**, Hersh C. [Discontinuation and comparative effectiveness of dimethyl fumarate and fingolimod in two centers](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30140580&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Neurol Clin Pract. 2018 Aug;8(4):292-301. doi: 10.1212/CPJ.0000000000000487.
26. Vollmer B, Honce JM, Sillau S, Corboy JR, Vollmer T, Nair K, **Alvarez E**[. The impact of very short transition times on switching from Natalizumab to Fingolimod on imaging and clinical effectiveness outcomes in multiple sclerosis](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:29801915&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). J Neurol Sci. 2018 Jul 15; 390:89-93. doi: 10.1016/j.jns.2018.04.021.
27. Zivadinov R, Medin J, Khan N, Korn JR, Bergsland N, Dwyer MG, Chitnis T, Naismith RT, **Alvarez E**, Kinkel P, Cohan S, Hunter SF, Silva D, Weinstock-Guttman B; MS-MRIUS investigators. [Fingolimod's Impact on MRI Brain Volume Measures in Multiple Sclerosis: Results from MS-MRIUS](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:29749661&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). J Neuroimaging. 2018 Jul;28 (4):399-405. doi: 10.1111/jon.12518.
28. **Alvarez E** and Mowry EM. [We need to conduct clinical trials of disease-modifying therapy in pregnancy to optimize care of women with MS](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30346221&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler. 2019 Feb;25(2):187-188. doi: 10.1177/1352458518794061.
29. Fox RJ, Coffey CS, Conwit R, Cudkowicz ME, Gleason T, Goodman A, Klawiter EC, Matusda K, McGovern M, Naismith RT, Ashokkumar A, Barnes J, Ecklund D, Klingner E, Koepp M, Long JD, Natarajan S, Thornell B, Yankey J, Bermel RA, Debbins JP, Huang X, Jagodnik P, Lowe MJ, Nakamura K, Narayanan S, Sakaie KE, Thoomukuntla B, Zhou X, Krieger S, **Alvarez E**, Apperson M, Bashir K, Cohen BA, Koyle PK, Delgado S, Dewitt LD, Flores A, Aiesser BS, Goldman MD, Jubelt B, Lava N, Lynch SG, Moses H, Ontaneda D, Perumal JS, Racke M, Repovic P, Riley CS, Seerson C, Shinnar S, Suski V, Weinstock-Guttman B, Yadav V, Zabeti A, NN102/SPRINT-MS Trial Investigators. [Phase 2 Trial of Ibudilast in Progressive Multiple Sclerosis](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30157388&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). N Engl J Med. 2018 Aug 30; 379(9): 846-855. doi: 10.1056/NEJMoa1803583
30. Zivadinov R, Medin J, Khan N, Korn JR, Chitnis T, Naismith RT, **Alvarez E**, Dwyer MG, Bergsland N, Carl E, Silva D, Weinstock-Guttman B, on behalf of the MS-MRIUS Study Group[. Impact of fingolimod on clinical and magnetic resonance imaging outcomes in routine clinical practice: A retrospective analysis of the multiple sclerosis, clinical and MRI outcomes in the USA (MS-MRIUS) study](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30342416&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler Relat Disord. 2019 Jan;27:65-73. doi: 10.1016/j.msard.2018.09.037.
31. Honce JH, Nair KV, Sillau S, Valdez B, Miravalle A, **Alvarez E**, Schreiner T, Bennett JL, Corboy JR, Vollmer TL. [Rituximab vs placebo induction prior to glatiramer acetate monotherapy in multiple sclerosis.](https://www.ncbi.nlm.nih.gov/pubmed/30635477) Neurology. 2019 Feb 12;92(7):e723-e732. doi: 10.1212/WNL.0000000000006916.
32. Vollmer BL, Nair K, Sillau S, Corboy JR, Vollmer T, **Alvarez E**[. Natalizumab versus Fingolimod, and Dimethyl Fumarate in Multiple Sclerosis Treatment](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30847358&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true) (Accepted 10/21/18)
33. Weinkle L, Domen C, Shelton I, Sillau S, Nair K, **Alvarez E**. [Exploring cannabis use by patients with multiple sclerosis in a state where cannabis is legal](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30502644&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). 2018 Mult Scler Relat Disord (Accepted 11/19/18)
34. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E.**  [Natalizumab versus fingolimod and dimethyl fumarate in multiple sclerosis treatment](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30847358&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Ann Clin Transl Neurol. 2018 Dec 9;6(2):252-262. doi: 10.1002/acn3.700.
35. Kletenik I, **Alvarez E\***, Honce J, Valdez B, Vollmer T and Medina L. [Subjective cognitive concern in multiple sclerosis is associated with reduced thalamic and cortical gray matter volumes](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30800417&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Mult Scler J Exp Transl Clin. 2019 Feb 13;5(1):2055217319827618. doi: 10.1177/2055217319827618. \*Co-first author and corresponding author
36. Khan M, Ney D, Kleinschmidt-DeMasters B, Horton L, **Alvarez E**, and Piquet A. [CNS Atypical T-cell Lymphoproliferative Disease Following Treatment with Alemtuzumab Neurology](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:31341717&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Neurol Clin Pract. 2019 Jun;9(3):273-276. doi: 10.1212/CPJ.0000000000000639.
37. Voge N and **Alvarez E**. [Monoclonal Antibodies in Multiple Sclerosis: Present and Future](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:30875812&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). Biomedicines. 2019 Mar 14;7(1). pii: E20. doi: 10.3390/biomedicines7010020.
38. Min J, Cohan S, **Alvarez E**, Sloane J, Phillips JT, van der Walt A, Koulinska I, Fang F, Miller C, Chan A. [Real-World Characterization of Dimethyl Fumarate-Related Gastrointestinal Events in **Multiple Sclerosis**: Management Strategies to Improve Persistence on Treatment and Patient Outcomes.](https://www.ncbi.nlm.nih.gov/pubmed/30706431) Neurol Ther. 2019 Jun;8(1):109-119. doi: 10.1007/s40120-019-0127-2.
39. Lovett-Racke A, Gormleya M, Liua Y, Yanga Y, Grahama C, Wrayc S, Rackeb M, Shubind R, Twymane C, **Alvarez E**, Bassg A, Eubanksh J, Fox E[. B cell depletion with ublituximab reshapes the T cell profile in multiple sclerosis patients](https://library-cuanschutz.hosted.exlibrisgroup.com/primo-explore/openurl?sid=Entrez:PubMed&id=pmid:31077854&vid=01UCOHS&institution=01UCOHS&url_ctx_val=&url_ctx_fmt=null&isSerivcesPage=true). J Neuroimmunol. 2019 Jul 15;332:187-197. doi: 10.1016/j.jneuroim.2019.04.017.
40. Col N, **Alvarez E**, Springmann V, Ionete C, Berrios Morales I, Solomon A, Kutz C, Griffin C, Tierman B, Livingston T, Patel M, van Leeuwen D, Ngo L, Pbert L. [A Novel Tool to Improve Shared Decision Making and Adherence in **Multiple Sclerosis**: Development and Preliminary Testing.](https://www.ncbi.nlm.nih.gov/pubmed/31667351) MDM Policy Pract. 2019 Oct 16;4(2):2381468319879134. doi: 10.1177/2381468319879134.
41. Almuklass AM, Capobianco RA, Feeney DF, **Alvarez E**, Enoka RM. [Sensory nerve stimulation causes an immediate improvement in motor function of persons with **multiple sclerosis**: A pilot study.](https://www.ncbi.nlm.nih.gov/pubmed/31715503) Mult Scler Relat Disord. 2019 Nov 6;38:101508. doi: 10.1016/j.msard.2019.101508.
42. Vollmer B, Ontaneda D, Harris H, Nair K, Bermel RA, Corboy JR, Fox RJ, Vollmer T, Cohen JA, **Alvarez E**, Hersh CM. [Comparative discontinuation, effectiveness, and switching practices of dimethyl fumarate and fingolimod at 36-month follow-up.](https://www.ncbi.nlm.nih.gov/pubmed/31644992) J Neurol Sci. 2019 Dec 15;407:116498. doi: 10.1016/j.jns.2019.116498.
43. Wolf AB, Ryerson LZ, Pandey K, McGettigan BM, Vollmer T, Corboy JR, **Alvarez E**. [Rituximab-induced serum sickness in **multiple sclerosis** patients.](https://www.ncbi.nlm.nih.gov/pubmed/31542710) Mult Scler Relat Disord. 2019 Sep 17;36:101402. doi: 10.1016/j.msard.2019.101402
44. Chan A, Rose J, **Alvarez E**, Bar-Or A, Butzkueven H, Fox RJ, Gold R, Gudesblatt M, Haartsen J, Spelman T, Wright K, Ferraro D, Sola P, Hodgkinson S, Kalincik T, Lechner-Scott J, McGuigan C, Spach K, Chen C, Fam S, Wu F, Miller C. Lymphocyte reconstitution after DMF discontinuation in clinical trial and real-world patients with MS. Neurol Clin Pract. 2020 Dec;10(6):510-519. doi: 10.1212/CPJ.0000000000000800. PMID: 33510947; PMCID: PMC7837440
45. Medina L, Torres S, **Alvarez E**, Valdez B, and Nair K. Patient Reported Outcomes in Multiple Sclerosis: Validation of the Neurological Quality of Life (Neuro-QoL) Short Forms. Multiple Sclerosis Journal - Experimental, Translational and Clinical. First published November 26th, 2019. <https://doi.org/10.1177/2055217319885986>
46. Mañago MM, Kline PW, **Alvarez E**, Christiansen CL. Trunk and pelvis movement compensation in people with multiple sclerosis: Relationships to muscle function and gait performance outcomes. Gait & Posture. 2020;78:48-53. doi:10.1016/j.gaitpost.2020.03.006
47. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. Rituximab versus Natalizumab, Fingolimod, and dimethyl fumarate in multiple sclerosis treatment. Annals of Clinical and Translational Neurology. First published August 6, 2020 <https://doi.org/10.1002/acn3.51111>
48. Vollmer B, Wallach A, Corboy J, Dubovskaya K, **Alvarez E\***, Kister I\*. Serious safety events in rituximab‐treated multiple sclerosis and related disorders. Annals of Clinical and Translational Neurology. First published August 6, 2020 <https://doi.org/10.1002/acn3.51136>. \*co-senior authors
49. Honce JM, Nair KV, Hoyt BD, Seale RA, Sillau S, Engebretson E, Schurr B, Corboy JR, Vollmer TL, **Alvarez E**. [Brain Atrophy Rates for Stable Multiple Sclerosis Patients on Long-Term Fingolimod versus Glatiramer Acetate.](https://pubmed.ncbi.nlm.nih.gov/33071934/) Front Neurol. 2020 Sep 23;11:1045. doi: 10.3389/fneur.2020.01045. eCollection 2020.
50. Nicholas JA, Shin RK, **Alvarez E**, Hendin B, Nair KV, Lublin FD. Pandemic forward: Lessons learned and expert perspectives on multiple sclerosis care in the COVID-19 era. Mult Scler Relat Disord. 2020 Dec 24;49:102715. doi: 10.1016/j.msard.2020.102715. Epub ahead of print. PMID: 33486401; PMCID: PMC7832784.
51. Vollmer TL, Cohen JA, **Alvarez E**, Nair KV, Boster A, Katz J, Pardo G, Pei J, Raut P, Merchant S, MacLean E, Pradhan A, Moss B. Safety results of administering ocrelizumab per a shorter infusion protocol in patients with primary progressive and relapsing multiple sclerosis. Mult Scler Relat Disord. 2020 Nov;46:102454. doi: 10.1016/j.msard.2020.102454. Epub 2020 Aug 18. PMID: 33045496.
52. Kline P, Christiansen C, Hager E, **Alvarez E**, Mañago M. Movement compensations during a step ascent task are associated with stair climbing performance in people with multiple sclerosis. Elsevier Science Epub 2021 April 15. <https://doi.org/10.1016/j.gaitpost.2021.04.022>
53. **Alvarez E**, Nair KV, Gorritz M, Bartolome L, Maloney H, Ding Y, Golan T, Wade RL, Kumar R, Su W, Shah R, Russo P. Identification and diagnosis of Secondary Progressive Multiple Sclerosis during the clinical encounter: Results from a physician survey. Elsevier Science DOI: 10.1016/j.msard.2021.102858 PMID: 33799068
54. **Alvarez E**, Nair KV, Hoyt BD, Seale RA, Sillau S, Miravalle A, Engebretson E, Schurr B, Corboy JR, Vollmer TL, Honce JM. Brain atrophy rates in patients with multiple sclerosis on long term natalizumab resembles healthy controls. Mult Scler Relat Disord. 2021 Oct;55:103170. doi: 10.1016/j.msard.2021.103170. Epub 2021 Jul 24. PMID: 34364034
55. Lovett-Racke AE, Yang Y, Liu Y, Gormley M, Kraus E, Graham C, Wray S, Racke MK, **Alvarez E**, Bass A, Fox E. B cell depletion changes the immune cell profile in multiple sclerosis patients: One-year report. J Neuroimmunol. 2021 Oct 15;359:577676. doi: 10.1016/j.jneuroim.2021.577676. Epub 2021 Jul 30. PMID: 34364105
56. Vollmer TL, Nair KV, Williams IM, **Alvarez E**. Multiple Sclerosis Phenotypes as a Continuum: The Role of Neurologic Reserve. Neurol Clin Pract. 2021 Aug;11(4):342-351. doi:
57. Wolf A, **Alvarez E**. COVID-19 Vaccination in Patients With Multiple Sclerosis on Disease-Modifying Therapy. Neurol Clin Pract. 2021 Aug;11(4):358-361. doi: 10.1212/CPJ.0000000000001088. PMID: 34476126; PMCID: PMC8382415
58. Ziemssen T, Giovannoni G, **Alvarez E**, Bhan V, Hersh C, Hoffmann O, Oreja-Guevara C, Robles-Cedeño RR, Trojano M, Vermersch P, Dobay P, Khwaja M, Stadler B, Rauser B, Hach T, Piani-Meier D, Burton J. Multiple Sclerosis Progression Discussion Tool Usability and Usefulness in Clinical Practice: Cross-sectional, Web-Based Survey. J Med Internet Res. 2021 Oct 6;23(10):e29558. doi: 10.2196/29558. PMID: 34612826
59. Ontaneda D, Sati P, Raza P, Kilbane M, Gombos E, **Alvarez E**, Azevedo C, Calabresi P, Cohen J, Freeman L, Henry R, Longbrake E, Mitra N, Illenberger N, Moreno D, Mowry E, Oh J, Rodrigues P, Chahin S, Waubant E, Cutter G, Shinohara R, Reich DS, Solomon A, Sicotte N, and the NAIMS Cooperative. Central vein sign: a diagnostic biomarker in multiple sclerosis (CAVS-MS) study protocol. Neuroimage Clin. 2021 Sep 23;32:102834. doi: 10.1016/j.nicl.2021.102834.
60. Enoka RM, Almuklass AM, Alenazy M, **Alvarez E**, Duchateau J. Distinguishing between Fatigue and Fatigability in Multiple Sclerosis. Neurorehabil Neural Repair. 2021 Nov;35(11):960-973. doi: 10.1177/15459683211046257. Epub 2021 Sep 28. PMID: 34583577
61. Alenazy M, Daneshgar Asl S, Petrigna L, Feka K, **Alvarez E**, Almuklass AM, Enoka RM. Treatment with electrical stimulation of sensory nerves improves motor function and disability status in persons with multiple sclerosis: A pilot study. J Electromyogr Kinesiol. 2021 Dec;61:102607. doi: 10.1016/j.jelekin.2021.102607. Epub 2021 Oct 13. PMID: 34710779
62. **Alvarez E**, Nair KV, Sillau S, Shelton I, Seale R, Selva S, Corboy JR, Vollmer TL. Tolerability and Safety of Switching from Rituximab to Ocrelizumab: Evaluating Factors Associated with Infusion Related Reactions. Mult Scler J Exp Transl Clin. 2022 Jan 5;8(1):20552173211069359. doi: 10.1177/20552173211069359. eCollection 2022 Jan-Mar. PMID: 35024160
63. Vollmer BL, Wolf AB, Sillau S, Corboy JR, **Alvarez E**. Evolution of disease modifying therapy benefits and risks: an argument for de-escalation as a treatment paradigm for patients with multiple sclerosis. Front. Neurol., 25 January 2022 | <https://doi.org/10.3389/fneur.2021.799138>
64. Kammeyer R, Mizenko C, Sillau S, Richie A, Owens G, Nair KV, **Alvarez E**, Vollmer TL, Bennett JL, Piquet AL. Evaluation of Plasma Neurofilament Light Chain Levels as a Biomarker of Neuronal Injury in the Active and Chronic Phases of Autoimmune Neurologic Disorders. Front Neurol. 2022 Mar 2;13:689975. doi: 10.3389/fneur.2022.689975. PMID: 35309573; PMCID: PMC8924486.
65. Ziemssen T, Arnold DL, **Alvarez E**, Cross AH, Willi R, Li B, Kukkaro P, Kropshofer H, Ramanathan K, Merschhemke M, Kieseier B, Su W, Häring DA, Hauser SL, Kappos L, Kuhle J. Prognostic Value of Serum Neurofilament Light Chain for Disease Activity and Worsening in Patients With Relapsing Multiple Sclerosis: Results From the Phase 3 ASCLEPIOS I and II Trials. Front Immunol. 2022 Mar 31;13:852563. doi: 10.3389/fimmu.2022.852563. PMID: 35432382; PMCID: PMC9009385.
66. Foley JF, Defer G, Ryerson LZ, Cohen JA, Arnold DL, Butzkueven H, Cutter G, Giovannoni G, Killestein J, Wiendl H, Smirnakis K, Xiao S, Kong G, Kuhelj R, Campbell N; **NOVA study investigators**. Comparison of switching to 6-week dosing of natalizumab versus continuing with 4-week dosing in patients with relapsing-remitting multiple sclerosis (NOVA): a randomised, controlled, open-label, phase 3b trial. Lancet Neurol. 2022 Jul;21(7):608-619. doi: 10.1016/S1474-4422(22)00143-0. Epub 2022 Apr 25. PMID: 35483387.
67. Greenberg BM, Bowen JD, **Alvarez E**, Rodriguez M, Caggiano AO, Warrington AE, Zhao P, Eisen A. A double-blind, placebo-controlled, single-ascending-dose intravenous infusion study of rHIgM22 in subjects with multiple sclerosis immediately following a relapse. Mult Scler J Exp Transl Clin. 2022 Apr 26;8(2):20552173221091475. doi: 10.1177/20552173221091475. PMID: 35496758; PMCID: PMC9052243.
68. Bar-Or A, Wiendl H, Montalban X, **Alvarez E**, Davydovskaya M, Delgado SR, Evdoshenko EP, Giedraitiene N, Gross-Paju K, Haldre S, Herrman CE, Izquierdo G, Karelis G, Leutmezer F, Mares M, Meca-Lallana JE, Mickeviciene D, Nicholas J, Robertson DS, Sazonov DV, Sharlin K, Sundaram B, Totolyan N, Vachova M, Valis M, Bagger M, Häring DA, Ludwig I, Willi R, Zalesak M, Su W, Merschhemke M, Fox EJ. Rapid and sustained B-cell depletion with subcutaneous ofatumumab in relapsing multiple sclerosis: APLIOS, a randomized phase-2 study. Mult Scler. 2022 May;28(6):910-924. doi: 10.1177/13524585211044479. Epub 2021 Oct 4. PMID: 34605319; PMCID: PMC9024029.
69. Steinman L, Fox E, Hartung HP, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Cutter G, Mok K, Hsu Y, Xu Y, Weiss MS, Bosco JA, Power SA, Lee L, Miskin HP, Cree BAC; ULTIMATE I and ULTIMATE II Investigators. Ublituximab versus Teriflunomide in Relapsing Multiple Sclerosis. N Engl J Med. 2022 Aug 25;387(8):704-714. doi: 10.1056/NEJMoa2201904. PMID: 36001711.
70. Longbrake EE, Hua LH, Mowry EM, Gauthier SA, **Alvarez E**, Cross AH, Pei J, Priest J, Raposo C, Hafler DA, Winger RC. The CELLO trial: Protocol of a planned phase 4 study to assess the efficacy of Ocrelizumab in patients with radiologically isolated syndrome. Mult Scler Relat Disord. 2022 Dec;68:104143. doi: 10.1016/j.msard.2022.104143. Epub 2022 Aug 22. PMID: 36031693.
71. Wolf AB, & **Alvarez E**. Ublituximab: A novel anti-cd20 therapy for multiple sclerosis. *TouchREVIEWS in Neurology. 2022 Nov;18*(2): 117–21. doi: 10.17925/usn.2022.18.2.117.
72. Curran C, Vaitaitis G, Waid D, Volmer T, **Alvarez E**, Wagner DH. Ocrevus reduces TH40 cells, a biomarker of systemic inflammation, in relapsing multiple sclerosis (RMS) and in progressive multiple sclerosis (PMS). J Neuroimmunol. 2022 Dec 7;374:578008. doi: 10.1016/j.jneuroim.2022.578008. Epub ahead of print. PMID: 36535240.
73. Barrera B, Simpson H, Engebretson E, Sillau S, Valdez B, Parra-González J, Winger RC, Epperson LA, Banks A, Pierce K, Spotts M, O'Gean K, **Alvarez E**, Gross R, Piquet AL, Schreiner T, Corboy JR, Pei J, Vollmer TL, Nair KV. Safety and patient experience with at-home infusion of ocrelizumab for multiple sclerosis. Ann Clin Transl Neurol. 2023 Feb 22. doi: 10.1002/acn3.51745. Epub ahead of print. PMID: 36811392.
74. Courter R, **Alvarez E**, Enoka R, Ahmed A. Metabolic costs of walking and arm reaching in persons with mild multiple sclerosis. J Neurophysiol. 2023 Mar 8. doi: 10.1152/jn.00373.2022. Epub ahead of print. PMID: 36883754.
75. **Alvarez E**, Nair KV, Tan H, Rathi K, Gabler NB, Maiese EM, Deshpande C, Shao Q. Real-world cost of care and site of care in patients with multiple sclerosis initiating infused disease-modifying therapies. Journal of Medical Economics, 26:1, 494-502, DOI: 10.1080/13696998.2023.2194185
76. Zhou W, Graner M, Paucek P, Beseler C, Boisen M, Bubak A, Asturias F, George W, Graner A, Ormond D, Vollmer T, **Alvarez E**, Yu X. Multiple sclerosis plasma IgG aggregates induce complement-dependent neuronal apoptosis. Cell Death Dis. 2023 Apr 8;14(4):254. doi: 10.1038/s41419-023-05783-3. PMID: 37031195; PMCID: PMC10082781.
77. Giovannoni G, **Alvarez E**, Tutton E, Hoffmann O, Xu Y, Vermersch P, Oreja-Guevara C, Trojano M, Gold R, Robles-Cendeno R, Khwaja M, Stadler B, Vandercappellen J, Ziemssen T. Development and Usability Testing of Your MS Questionnaire: A Patient-based Digital Tool to Monitor Symptoms of Multiple Sclerosis. Digital Health. 2023;9. DOI: 10.1177/20552076231173531.
78. Borko TL, Baxter R, Cabrera-Martinez B, Thiruppathi E, Sabalza M, Venkataraman I, Selva S, Rester C, Sillau S, Pastula DM, Bennett JL, **Alvarez E**, Gross R, Shah A, Kammeyer R, Corboy JR, Kedl RM, Hsieh EWY, Piquet AL. SARS-CoV-2 mRNA vaccination induces an antigen-specific T cell response correlating with plasma interferon-gamma in B cell depleted patients J Neuroimmunol. 2023 Oct 15;383:578192.
79. **Alvarez E**, Longbreak E, Rammohan K, Stankiewicz J, Hersh C. Secondary hypogammaglobulinemia in patients with multiple sclerosis on anti-CD20 therapy: pathogenesis, risk of infection, and disease management. Multiple Sclerosis and Related Disorders, 2023 Sep 15;79:105009.DOI: <https://doi.org/10.1016/j.msard.2023.105009>
80. Zhou W, Graner M, Beseler C, Domashevich T, Selva S, Webster G, Ledreux A, Zizzo Z, Lundt M, **Alvarez E**, Yu X. Plasma IgG aggregates as biomarkers for multiple sclerosis. Clin Immunol. 2023 Oct 8;256:109801.
81. Mañago MM, Cohen ET, **Alvarez E**, Hager ER, Owens JG, Bade M. Feasibility of Low-Load Resistance Training Using Blood Flow Restriction for People With Advanced Multiple Sclerosis: A Prospective Cohort Study. Phys Ther. 2023 Oct 10.
82. Col N, Solomon A, **Alvarez E**, Pbert L, Ionete C, Berrios Morales I, Chester J, Kutz C, Iwuchukwu C, Livingston T, Springmann V, Col HV, Ngo L. Implementing Shared Decision-Making for Multiple Sclerosis: The MS-SUPPORT Tool. Multiple Sclerosis and Related Disorders, 2023 Oct 21 online DOI:https://doi.org/10.1016/j.msard.2023.105092

**16. PEER-REVIEWED PUBLICATIONS IN PROGRESS**

1. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E.** Ocrelizumab real-world safety and effectiveness in the two-year treatment of multiple sclerosis compared to other disease modifying therapies (in preparation)
2. Zanganeh N, Selva S, Nair K, Machtinger J, Vollmer T, **Alvarez** **E**. Cytokine changes induced by antiCD20 Infusions: A Comparison of Rituximab vs. Ocrelizumab (in preparation)
3. Wolf, A and Alvarez E. Neutropenic Fevers after Treatment with B Cell Depletion Therapies in Patients with Multiple Sclerosis (in preparation)

**17. BOOK and BOOK CHAPTERS**

1. Norris SA, **Alvarez E**, and Awadalla S. “Neurologic Disorders” in The Washington Manual® of Outpatient Internal Medicine. 2nd edition. Philadelphia: Lippincott Williams & Wilkins. 2015. Pp.906—939
2. Prater D, Ontaneda D, and **Alvarez E**. “Clinical trial design in Multiple Sclerosis” in Neuroimmunology: Multiple Sclerosis, Autoimmune Neurology and Related Diseases. 1st Edition. SpringerLink. 2021

3. Neuroimmunology: Multiple Sclerosis, Autoimmune Neurology and Related Diseases 1st Edition. Edited by Amanda L. Piquet and **Enrique Alvarez**. SpringerLink. 2021

**18. ABSTRACTS AND POSTERS**

1. **Alvarez E**. Isolation and Characterization of Bacteriophages for Xanthomonas Maltophilia. 43rd International Science and Engineering Fair. Nashville, Tennessee, 1992
2. **Alvarez E**. Study of the Bioluminescence of Xenorhabdus luminescens. 44th International Science and Engineering Fair. Mississippi Beach, Mississippi, 1993
3. **Alvarez E**, Zawada M, Freed C. FGF-8 and FGF-2 are Equivalent in Promoting Survival of Rat Mesencephalic Dopamine Neurons in Vitro. Society for Neuroscience 30th Annual Meeting,

Miami, Florida, 2000

1. Jarman R, **Alvarez E**, Freed C. Neural Stem Cells to Repair the Aging Brain. 1st Annual Coleman Institute for Cognitive Disabilities Workshop. Aspen, Colorado, 2001
2. **Alvarez E**, Witta S, Zhou W, Jarman R, Freed C. Two Members of the BEX Family: Possible Roles in Development and Apoptosis. Society for Neuroscience 31st Annual Meeting,

San Diego, California 2001

1. Clayton D, Mesches M, **Alvarez E**, Rabiner C, Allgeier C, Bickford P, Browning M. The Age-related Deficit in NR2B Expression is Sufficient to Produce Deficits in LTP and Spatial Learning. Society for Neuroscience 31st Annual Meeting, San Diego, California, 2001
2. **Alvarez E**, Witta S, Zhou W, Jarman R, Freed C. Two New Members of the Bex Gene Family: Possible Roles in Dopamine Neuron Development and Apoptosis. 8th International Neural Transplantation and Repair Meeting, Keystone, Colorado, 2002
3. **Alvarez E**, Jarman R, Costa A, Bjugstad K, Bell P, Patterson D, Freed C. Stem Cell Transplantation to Repair a Mouse Model of Down Syndrome. 2nd Annual Coleman Institute for Cognitive Disabilities Workshop. Boulder, Colorado, 2002
4. **Alvarez E**, Witta S, Zhou W, Freed C. Characterization of the Bex Gene Family and their Role in Apoptosis. Society for Neuroscience 32nd Annual Meeting, Orlando, Florida, 2002
5. Galliher A, **Alvarez E**, Costa A, Bjugstad K, Hutt C, Patterson D, Freed C. Stem Cell Transplantation in utero to Repair a Mouse Model of Down Syndrome. 3rd Annual Coleman Institute for Cognitive Disabilities Workshop. Denver, Colorado, 2003
6. **Alvarez E**, Witta S, Zhou W, Freed C. Characterization of the Bex Gene Family in Human, Mouse, and Rat. Society for Neuroscience 33rd Annual Meeting, New Orleans, Louisiana, 2003
7. Buytaert- Hoefen K, **Alvarez E**, Freed C. The Generation of Dopamine Neurons from Human Embryonic Stem Cells. Stem Cell Keystone Symposia, Keystone, Colorado, 2004
8. **Alvarez E**, Piccio L, Cross A. Adipokine levels in Multiple Sclerosis patients. Washington University Neurology Department Resident Research Forum, St. Louis, Missouri, 2009
9. Clifford D, **Alvarez E**, Schmitt R, Perry A, Ances B, Parks D. Rituximab associated progressive multifocal leukoencephalopathy in the setting of rheumatoid arthritis. International Society of Neurovirology Meeting, Milan, Italy, 2010
10. Wang L, Patrick E, Bucelli B, **Alvarez E**, Lim M, DeBruin G, Benzinger T, Ances B, Ward B. Clinical and Diagnostic Markers of Sporadic Creutzfeld-Jakob Disease (CJD) at a Single Institution from 2005-2010. American Academy of Neurology Meeting, Honolulu, Hawaii, 2011
11. **Alvarez E**, Piccio L, Mikesell R, Klawiter E , Parks B, Naismith R, Cross A. CSF and serum levels of CXCL13 in MS and NMO. 5th Joint Triennial Congress of the European and Americas Committees for Treatment and Research in Multiple Sclerosis. Amsterdam, The Netherlands, 2011
12. **Alvarez E**, Piccio L, Mikesell R, Klawiter E, Parks B, Naismith R, Cross A. Serum and Spinal Fluid Biomarker Role of CXCL13 in Multiple Sclerosis and Neuromyelitis Optica. 4th Cooperative meeting of the Consortium of MS Centers and Americas Committees for Treatment and Research in Multiple Sclerosis. San Diego, California, 2012
13. **Alvarez E**, Piccio L, Tutlam N, Mikesell R, Rapp N, Lancia S, Parks B, Naismith R, Cross A. Myelin Basic Protein and Neurofilament as Biomarkers of Treatment Response in a Phase II Add-on Trial of Rituximab for Relapsing Multiple Sclerosis. 11th Congress of the International Society of Neuroimmunology. Boston, Massachusetts, 2012
14. Klawiter E, **Alvarez E**, Elsone L, Mateen F, Borisow N, Bove R, Sorum J, Tobyne S, Mussalum A, Buckle G, Paul F, Levy M, Cross A, Jacobs A, Chitnis T, Weinshenker B. High Risk of Initial Symptom Onset Post-partum in Neuromyelitis Optica. 65th American Academy of Neurology Annual Meeting. San Diego, California, 2013
15. D. Gupta, **Alvarez E**, Mikesell R, Medina W, Klein R, Cross A. Ectopic Lymphoid Follicles in a Mouse Model of Multiple Sclerosis. 5th Cooperative meeting of the Consortium of MS Centers and Americas Committees for Treatment and Research in Multiple Sclerosis. Orlando, Florida, 2013
16. **Alvarez E**, Piccio L, Mikesell R, Trinkaus K, Tutlam N, Ramsbottom M, Rapp N, Lancia S , Parks B, Naismith R, Cross A. Determining Response to Treatment with Rituximab in Relapsing Multiple Sclerosis 5th Cooperative meeting of the Consortium of MS Centers and Americas Committees for Treatment and Research in Multiple Sclerosis. Orlando, Florida, 2013
17. Gupta D, **Alvarez E**, Mikesell R, Medina W, Klein R, Cross A. Ectopic Lymphoid Follicles in a Mouse Model of Multiple Sclerosis. 64th American Medical Student Association conference.

New Orleans, Louisiana, 2014

1. Longbrake E, Schmidt R, Cross A, **Alvarez E**. Lymphoma Mimicking Multiple Sclerosis Including Remitting Lesions Without Treatment: The importance of Immunosurveillance. 66th American Academy of Neurology Annual Meeting. Philadelphia, Pennsylvania, 2014
2. Lozowska D, **Alvarez E**, Vriesendorp F. A case of sensory ganglionopathy involving a mediastinal seminoma with transverse myelitis and paraneoplastic CRMP-5 antibody. 2nd Annual Neurohospitalist Meeting. Denver, Colorado, 2014
3. Smith D, Stein A, Miravalle A, Schreiner T, Corboy J, Vollmer T, **Alvarez E**. Central Nervous System Neurosarcoidosis Experience at a Large Academic Center. Poster and abstract submitted for presentation at the Americas Association of Sarcoidosis and Other Granulomatous Disorders 9AASCOG conference, University of Colorado Anschutz Medical Campus, Aurora, CO
4. **Alvarez E**, Vollmer B, Blackburn J, Corboy J, Vollmer T, Sillau S, Nair K, Seibert J. Effectiveness of Switching to Rituximab over Fingolimod or Dimethyl Fumarate after Natalizumab in Preventing Disease Activity in Multiple Sclerosis. 67th American Academy of Neurology Annual Meeting. Washington D.C., 2015
5. Seibert J, Blackburn J, Vollmer B, Honce J, Bennett J, Corboy J, Miravalle A, Schreiner T, Vollmer T, **Alvarez E**. Safety, Tolerability, and Efficacy of Rituximab in the Treatment of Multiple Sclerosis – 285 Patients Treated in a Single Center. 67th American Academy of Neurology Annual Meeting. Washington D.C, 2015
6. Seibert J, Blackburn J, Vollmer B, Honce J, Bennett J, Corboy J, Miravalle A, Schreiner T, Vollmer T, **Alvarez E**. Safety, Tolerability, and Efficacy of Rituximab in the Treatment of Multiple Sclerosis – 285 Patients Treated in a Single Center. 67th American Academy of Neurology Annual Meeting. Washington D.C, 2015
7. Miravalle A, Honce J, **Alvarez E**, Nair K, Vollmer B, Sillau S, Corboy J, Vollmer T. A longitudinal study using whole brain, neocortical and subcortical atrophy rates and patient reported outcomes (PROs) interim analysis. Abstract and poster presentation at the 31st Congress of the European Committee for Treatment and Research in Multiple Sclerosis, Barcelona, Spain, October 2015
8. **Alvarez E**, Seibert J, Vollmer B, Blackburn J, Strobel M, Freeman J. Sillau S. Honce J. Bennet JL, Miravalle A, Schreiner T, Corboy J, Vollmer T, Nair K. Assessing the efficacy, tolerability, and safety of rituximab for the treatment of multiple sclerosis: experience is 313 patients at a large academic center. Abstract and poster presentation at the 31st ECTRIMS, Barcelona, Spain, October 2015
9. Vollmer B, Nair K, Sillau S, Strobel M, Robinson L, Corboy J, Vollmer T, **Alvarez E**. Comparison of fingolimod and dimethyl fumarate in the treatment of multiple sclerosis: One year experience. Abstract and poster presentation at the 31st ECTRIMS, Barcelona, Spain, October 2015
10. Smith D, Stein A, Miravalle A, Schreiner T, Corboy J, Vollmer T, **Alvarez E**. Central Nervous System Neurosarcoidosis Experience at a Large Academic Center. Poster and abstract presentation at the Americas Association of Sarcoidosis and Other Granulomatous Disorders

9AASOG) Conference, University of Colorado Anschutz Medical Campus, Aurora, Colorado,

September 2015

1. Solomon A, Qu H, Springmann V, Ionete C, Pbert L, Anthony W, Griffin C, Tierman B, Hopson A, Berrios Morales I, **Alvarez E**, Phillips G, Col N. Differences between Patients’ and Providers’ Treatment Goals for Therapeutic Decisions in Multiple Sclerosis and Implications, Washington, DC, November 2015
2. Bove R, Elsone L, **Alvarez E**, Borisow N, Cortez M, Matee F, Melay M, Sorum J, Mutch K, Tobyne S, Ruprecht K, Buckle G, Levy M, Wingerchuk D, Friedemann P, Cross A, Weinshenker B, Jacobs A, Klawiter E, Chitnis T. Hormonal exposures relate to clinical phenotype in women with neuromyelitis optica. Abstract and poster presentation at the American Academy of Neurology Annual Meeting, Vancouver, BC, Canada, April 2016
3. Col N, Solomon A, Qu H, Springmann V, Ionete C, Pbert L, Anthony W, Griffin C, Tierman B, Kutz C, Berrior Morales I, Hopson A, Phillips G, **Alvarez E**. Comparison of Therapeutic Goals and Preferences in Multiple Sclerosis Pateints and Providers Using Nominal Group Technique. Poster and abstract presentation at the Annual Meeting of the American Academy of Neurology, Vancouver, BC, Canada, April 2016
4. **Alvarez E**, Vollmer B, Sillau S, Nair K, Corboy J, Vollmer T, Honce J. The impact of very short transition times on switching from Tysabri to Gilenya on imaging and clinical effectiveness outcomes. Poster and abstract presentation at the Annual Meeting of the American Academy of Neurology, Vancouver, BC, Canada, April 2016
5. Ontaneda D, Vollmer B, Sillau S, Cohn S, Nair K, Bermel R, Vollmer T, Fox R, Corboy J, Cohen J, Hersh C, **Alvarez E**. Comparative Efficacy and Discontinuation of Fingolimod and Dimethyl Fumarate in Two Large Academic Medical Centers. P3.109 Poster and abstract presentation at the Annual Meeting of The American Academy of Neurology, Vancouver, BC, Canada, April 2016
6. Smith D, Bennett J, Miravalle A, Schreiner T, Corboy J, Vollmer T, **Alvarez E**, Blackburn J. Reclassification of a large NMO patient cohort using the 2015 NMO Spectrum Disorder Criteria. Poster presentation at the Annual Meeting of the American Academy of Neurology, Vancouver, BC, Canada, April 2016
7. Honce J, Nair K, Hoyt B, Sillau S, Wedeman B, Engebretson E, Vollmer B, Johnson K, Tenenbaum N, Herrera V, Siconolfi L, Miravalle A, Bennett J, Corboy J, Vollmer T, **Alvarez E**. Comparison of Baseline Characteristics of Glatiramer Acetate Versus Fingolimod in Multiple Sclerosis Patients on Brain Volume, Cognition and Neuro-QOL Outcomes: Preliminary Analysis of a Longitudinal Observational Study. Poster presentation at the Annual Meeting of the American Academy of Neurology, Vancouver, BC, Canada, April 2016
8. Davis L, Almuklass A, Derquaoi K, Hamilton L, Hebert J, Vollmer T, **Alvarez E**, Enoka, R. Neuromuscular Electrical Stimulation Can Improve Walking Endurance in Individuals with Multiple Sclerosis. Poster presentation at the 2016 Annual Meeting of the American College of Sports Medicine
9. Almuklass A, Davis L, Vieira T, Botter A, Derqaoui D, Hamilton L, Hebert J, Vollmer T, **Alvarez E**, Enoka R. Neuromuscular Determinants for Walking Performance in Individuals with Multiple Sclerosis. Poster presentation at the 2016 Annual Meeting of the American College of Sports Medicine
10. Solomon A, Qu H, Springmann V, Ionete C, Pbert L, Anthony W, **Alvarez E**, Griffin C, Tierman B, Hopson A, Kutz C, Berrios Morales I, Phillips G, Col N. What Factors Influence Changes in MS Management? Comparing the Perspectives of Patients and Health Care Providers using Nominal Group Technique. Poster presentation at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC) National Harbor, MD, June 2016
11. Hoyt B, Honce J, Sillau S, Wedeman B, Engebretson E, Johnson K, Tenenbaum N, Herrera V, Siconolfi L, **Alvarez E**, Nair K. Preliminary Comparison of Baseline Cognition and Correlations with PROs of FTY versus GA in MS Patients in a Longitudinal Observational Study. Poster presentation at the Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), National Harbor, MD, June 2016
12. Honce J, Nair K, Sillau S, Valdez B, Torok I, Miravalle A, **Alvarez E**, Schreiner T, Bennett J, Corboy J, Vollmer T. Comparing Rituximab Induction Therapy Followed by Glatiramer Acetate Therapy to Glatiramer Acetate Monotherapy in MS Patients on Clinical Imaging Outcomes. Poster presentation at the 32nd Congress of the ECTRIMS, London, September 2016
13. Vollmer L, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. Comparison of Fingolimod and Dimethyl Fumarate in the Treatment of Multiple Sclerosis: Two Year Experience. Poster presentation at the 32nd Congress of the ECTRIMS, London, September 2016
14. Honce J, Nair K, Sillau S, Vollmer T, Vollmer B, **Alvarez E**. Predicting Which Patients with Multiple Sclerosis will develop a Progressive Course Using Patient Information and Clinically Obtained Brain Volumes. Poster presentation at the 32nd Congress of the ECTRIMS, London, September 2016
15. Col N, Solomon A, Springmann V, Garbin C, Ionete C, Pbert L, **Alvarez E**, Tierman B, Hopson A, Kutz C, Berrios Morales I, Griffin C, Phillips G, Ngo L. A Stakeholder-Centered Approach to Eliciting Patient Treatment Goals in the Context of High-Stake Clinical Decisions.38th Annual North American Meetingof theSociety for Medical Decision Making in Vancouver, BC, Canada. October 23-26. 2016
16. **Alvarez E**, Nair K, Hoyt B, Sillau S, Wedeman B, Engebretson E, Miravalle A, Bennett J, Corboy J, Vollmer T, Honce J. Comparison of Baseline Characteristics of Natalizumab versus Healthy Controls in Multiple Sclerosis Patients on Brain Volume, Cognition and Neuro-QOL outcomes: Preliminary Analysis of a Longitudinal Observational Study." Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
17. **E Alvarez**, Nair K, Hoyt B, Sillau S, Wedeman B, Engebretson E, Miravalle A, Bennett J, Corboy J, Vollmer T, Honce J. Comparison of Baseline Characteristics of Natalizumab versus Healthy Controls in Multiple Sclerosis Patients on Brain Volume, Cognition and Neuro-QOL Outcomes: Preliminary Analysis of a Longitudinal Observational. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
18. Medina L, Valdez B, **Alvarez E**, Nair K. Exploratory Factor Analysis of a Patient-Reported Outcome Measure in a Multiple Sclerosis Population Cohort at a Large. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
19. Lin J, Rawson C, Nair K, Nyberg E, Nagae L, Sillau S, **Alvarez E**, Honce J. Testing the Statistical Agreement of Automated NeuroQuant Volumetric Analysis to Validated Research Methods across Multiple MRI Scanner Manufacturers and Field Strengths. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
20. Rawson C, Lin J, Nair K, Nyberg E, Nagae L, Sillau S, **Alvarez E**, Honce J. Automated Brain Volumetric Processing in Multiple Sclerosis – Assessing Performance Across Multiple MRI Scanner Manufacturers and Field Strengths. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
21. Esfandi S, Salimian S, Vollmer T, Corboy J, **Alvarez E**. Persistent B lymphocytes in multiple sclerosis plaques after rituximab treatment. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
22. Almuklass A, Davis L, Hamilton L, Hebert J, **Alvarez E**, Enoka R. Neuromuscular electrical stimulation improves walking performance, neuromuscular function, and disability status in people with multiple sclerosis: double-blind, randomized trial. American College of Sports Medicine and Annual Meeting of the World Congress on Exercise is Medicine® and World Congress on the Basic Science of Exercise and the Brain in Denver CO. May 30-June 3 2017
23. Honce J, Nair K, Hoyt B, Sillau S, Wedeman B, Engebretson E, Vieira M, Tenenbaum N, Siconolfi L, Corboy J, Vollmer T, **Alvarez E**. Comparison of 12 month changes in Brain Volume in Long Term Users of Glatiramer Acetate versus Fingolimod in Multiple Sclerosis: Preliminary analysis of a Two-Year Longitudinal Observational Study. Poster presentation at the American Academy of Neurology 69th Annual Meeting, Boston, MA, April 2017
24. Col N, Solomon A, Springmann V, Garbin C, Ionete C, Pbert L, **Alvarez E**, Tierman B, Hopson A, Kutz C, Berrios Morales I, Griffin C, Phillips G, Ngo L. Evaluation of a Novel Preference Assessment Tool for Patients with Multiple Sclerosis 9th International Shared Decision Making conference. July 2nd and July 5th, 2017. Lyon France
25. Michel C, Reisdorph R, **Alvarez E**, Bhat V, Goodley P, Reisdorph N. Utilizing an Accurate Mass and Retention Time Library to Facilitate Bio-Marker Discovery in the Human Cerebrospinal Fluid Proteome: American Society for Mass Spectrometry (ASMS) Annual Meeting, Indianapolis, IN, June 2017
26. Min J, Sloane J, Phillips J, Chan A, Cohan S, **Alvarez E**, Okwuokenye M, Taylor C. Leveraging Real-World Evidence for Comparative Effectiveness: Delayed-Release Dimethyl Fumarate vs. Fingolimod and Glatiramer Acetate in RRMS. Abstract/Poster presentation at America’s Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Annual Meeting in San Diego, CA, February 2018
27. Naismith R, Coffey C, Cudkowicz M, Gleason T, Goodman A, Klawiter E, Matsuda K, McGovern M, Conwit R, Ashokkumar A, Ecklund D, Klinger E, Koepp M, Natarajan S, Thornell B, Yankey J, Bermel R, Huang X, Lowe M, Nakamura K, Narayanan S, Sakaie K, Debbins J, Zhou X, **Alvarez E**, Apperson M, Bashir K, Cohen B, Coyle P, Delgado S, Dewitt D, Flores A, Giesser B, Goldman M, Jubelt B, Lava N, Lynch S, Moses H, Ontaneda D, Perumal J, Racke M, Repovic P, Riley C, Severson C, Shinnar S, Suski V, Weinstock-Guttman B, Yadav V, Zabeti A, Fox R. Sprint-MS/NN 102 Phase II Trial of Ibudilast in Progressive MS: Top-Line Results Abstract/Poster presentation at America’s Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Annual Meeting in San Diego, CA, February 2018
28. Hersh C , Vollmer B, Bandyopadhyay A, Cohn S, Nair K, Sillau S, Bermel R, Corboy J, Fox R, Vollmer T, Cohen J, Ontaneda D, **Alvarez E**. Comparative Effectiveness and discontinuation of Dimethyl Fumarate and Finolimod in Tow Large Academic Medical Centers at 24-Month Follow-Up: Sub-Group Analyses. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
29. Horton L, Gross R, Corboy J, **Alvarez** **E**. Neutropenia Following Treatment with Rituximab for Multiple Sclerosis. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
30. Zanganeh N, Selva S, Nair K, Machtinger J, Vollmer T, **Alvarez** **E**. Cytokine changes induced by antiCD20 Infusions: A Comparison of Rituximab vs. Ocrelizumab. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
31. **Alvarez** E, Nair K, Weinkle L, Craig J, Hoyt B, Sillau A, Engebretson E, Schurr B, Corboy J, Vollmer T, Honce J. Comparison of 12 month changes in Brain Volume among Long Term Users of Natalizumab vs. Healthy Controls in Multiple Sclerosis: Year One Analysis of a Two-Year Longitudinal Observational Study. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018 and at ECTRIMS 2018 in Berlin, Germany
32. Schubert C, **Alvarez** **E**, Honce J, Filley C. Use of LesionQuant® to Measure Cerebral White Matter Lesion Distribution in Neuromyelitis Optica and Relapsing Multiple Sclerosis. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
33. Weinkle L, Shelton I, Sillau S, Domen C, Nair K, **Alvarez E**. Exploring Cannabis use by Patients with Multiple Sclerosis in a state where Cannabis is legal. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
34. Leech J, Sillau S, Valdez B, Vollmer T, **Alvarez E**, Medina L. Treatment satisfaction and illness perception in MS patients. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
35. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez** **E**. Comparison of Rituximab vs. Fingolimod, Dimethyl Fumarate and Natalizumab in the Treatment of Multiple Sclerosis: Two Year Experience. Abstract/Poster presentation at the AAN Annual Meeting in Los Angeles, CA, April 2018
36. Col N, **Alvarez E**, Pbert L, Ionete C, Berrios Morales I, Solomon A, Jones D, Kutz C, Springmann V, Griffin C, Tierman B, Livingston T, Patel M, Ngo L. The MS-Support Decision Aid Promotes Collaborative Decision-Making and Treatment Adherence for Multiple Sclerosis. Abstract/Poster presentation at the 40th Annual Meeting of the Society for Medical Decision Making 2018.
37. Col N, **Alvarez E**, Pbert L, Ionete C, Berrios Morales I, Solomon A, Jones D, Kutz C, Springmann V, Griffin C, Tierman B, Livingston T, Patel M, Ngo L. The MS-Support Decision Aid Promotes Collaborative Decision-Making and Treatment Adherence for Multiple Sclerosis. Abstract/Poster presentation at The Consortium of Multiple Sclerosis Centers (CMSC) 2018 as a “later breaker.”
38. Col N, **Alvarez E**, Berrios Morales I, Solomon A, Jones D, Kutz C, Springmann V, Griffin C, Tierman B, Livingston T, Patel M, van Leeuwen D, Ngo L. A Novel Tool to Improve Shared Decision Making and Adherence in Multiple Sclerosis: A Pilot Study. Poster presentation at the 40th Annual Montreal Society of Medical Decision Making, October 2018
39. Shelton I, Zanganeh N, Selva S, Sillau S, Nair K, Vollmer T, **Alvarez E**. Characterizing Cytokine Changes Before and After Ocrelizumab Infusions and Their Contribution to Infusion Related Reactions. Poster presentation at ECTRIMS 2018 held in Berlin, Germany.
40. Ontaneda D, Tallantyre E, Nakamura K , Planchon S, Miller D, Hersh C, Chaudhry B, Bale C, **Alvarez E**, Chataway J, Craner M, Freeman L, Frost N, Goldman M, Hobart J, Hunt D, Hutton G, Hyland M, Joseph F, Lily O, Moses H, Nicholas J, Nicholas R, Overell J, Pearson O, Pomeroy I, Smith A, Zabeti A, Gerry S, Gunzler D, Coles A, LaRocca N, Gray E, Cohen J, Evangelou N. Deliver-MS--Determining the Effectiveness of early Intensive Versus Escalation approaches for the treatment of Relapsing-remitting Multiple Sclerosis. Poster presentation at ECTRIMS 2018 held in Berlin, Germany.
41. Rose J, **Alvarez E**, Okuda D, Gudesblatt M, Riser E, Spelman T, Butzkueven H, Fam S, Riester K, Wu F, Miller C. Among Real-world Multiple Sclerosis Patients That Experience Delayed-release Dimethyl Fumarate–Associated Lymphopenia, Meaningful Lymphocyte Reconstitution Occurs Within 3 Months After Discontinuation of Delayed-release Dimethyl Fumarate. Poster presentation at ECTRIMS 2018 held in Berlin, Germany.
42. **Alvarez E**, K. Nair, I. Shelton, N. Zanganeh, S. Sillau, J. Corboy, T. Vollmer. Evaluating the Tolerability and Safety Profile of Switching from Rituximab to Ocrelizumab: Infusion Related Reactions in Relapsing Forms of Multiple Sclerosis. Poster presentation at ECTRIMS 2018 in Berlin Germany
43. Vollmer T, Alvarez E, Nair KV, Cohen J, Boster A, Masterman D, Pradhan A, Pei J, Yang M, Bobbala A, Moss B. Design of a Study to Evaluate the Safety of Administering Ocrelizumab per a Shorter Infusion Protocol in Patients With Primary Progressive Multiple Sclerosis and Relapsing Multiple Sclerosis. Poster presentation at the 2018 European Charcot Foundation in Italy.
44. Alenazy M, Petrigna L, Feka K, **Alvarez E**, Almuklass AM, Enoka R. Electrical stimulation of sensory nerves improves mobility and balance in persons with multiple sclerosis. Abstract presented at the XXVII Congress of the International Society of Biomechanics and 43rd Annual Meeting of the American Society of Biomechanics, Calgary, Canada, July 31 – August 4, 2019
45. Honce J, Nair K, Hoyt B, Sillau S, Corboy J, Vollmer T, and **Alvarez E**. [Comparison of 24 Month Changes in Brain Volume Among Long Term Users of Natalizumab in Multiple Sclerosis Versus Healthy Controls](https://actrims.confex.com/actrims/2019/meetingapp.cgi/Paper/4000) Poster presentation at the ACTRIMS 2019
46. Vollmer B, Wallach A, Corboy J, Dubovskaya K,**Alvarez E**, and Kister I. [Serious Adverse Events in Rituximab-Treated Patients with Multiple Sclerosis and Related Disorders](https://actrims.confex.com/actrims/2019/meetingapp.cgi/Paper/3978)  Poster presentation at ACTRIMS 2019
47. Kwon SH, Nair K, Sillau S, **Alvarez E** . Longitudinal comparison in employment between multiple sclerosis pateints versus controls. Poster presentation at ISPOR 2019 in New Orleans, LA
48. Domen C, Weinkle L, Shelton I, Sillau S, Nair K, **Alvarez, E**. Cannabis use by Patients with Multiple Sclerosis in Colorado. Poster presentation at AAN 2019 in Philadelphia, PA
49. **Alvarez E,** Smith P, Deanda K, Sudfeld H, Palmer L, Simpson J, Kern D. A novel practice model incorporating extended rooming and scribing assistance in an academic neurology practice. Poster presentation at AAN 2019 in Philadelphia, PA
50. Vollmer B, Nair K, Sillau S, Vollmer T, Corboy J, **Alvarez E**. Higher Efficacy Therapies Appear to have a Disproportionately Larger Effect in Younger Patients with Multiple Sclerosis. Poster presentation at AAN 2019 in Philadelphia, PA
51. Vollmer T, **Alvarez E,** Nair K, Cohen J, Boster A, Masterman D, Pradhan A, Musch B, Ma X, Pei J, Moss B, Weinstock-Guttman B, Bermel R. Evaluation of shorter infusion times with ocrelizumab in patients with relapsing-remitting multiple sclerosis. Poster presentation at AAN 2019 in Philadelphia, PA
52. Alimohamadi S, Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. Ocrelizumab Safety and Effectiveness in the One Year Treatment of Multiple Sclerosis Compared to Other Disease Modifying Therapies. Poster presentation at AAN 2019 in Philadelphia, PA
53. Vollmer B, Nair K, Corboy J, VollmerT, **Alvarez E**. Characteristics of Patients Switching from Anti-CD20 Therapy to Natalizumab in the Treatment of Multiple Sclerosis. Poster presentation at AAN 2019 in Philadelphia, PA
54. **Alvarez E,** Nair K, Shelton I, Selva S, Voge N, Zanganeh N, Sillau S, Vollmer T. Evaluating the Tolerability and Safety of Switching from Rituximab to Ocrelizumab: Infusion Related Reactions in Relapsing Forms of Multiple Sclerosis. Poster presentation at AAN 2019 in Philadelphia, PA
55. Horton L, Khan M, Ney D, DeMasters D, **Alvarez E,** Piquet A. Central Nervous System T Cell Lymphoproliferative Disease Following Treatment with Alemtuzumab. Poster presentation at AAN 2019 in Philadelphia, PA
56. Kern D, **Alvarez E,** Deanda K, Sudfeld H, Smith P, Palmer L, Simpson J, Frey L. Effects of a novel practice model on medical team burnout in an academic neurology practice. Poster presentation at AAN 2019 in Philadelphia, PA
57. Hersh C, Vollmer B, Harris H, Nair K, Bermel R, Corboy J, Fox R, Vollmer T, Cohen J, Ontaneda D, **Alvarez E.** Discontinuation and Comparative Effectiveness of Dimethyl Fumarate and Fingolimod in Two Large Academic Medical Centers at 36-month Follow-Up. Poster presentation at AAN 2019 in Philadelphia, PA
58. Rose J, Alvarez E, Okuda D, Gudesblatt M, Riser E, Spelman T, Butzkueven H on behalf of MSBase Investigators, Fam S, Riester K, Wu F, Miller C. Among Real-world Multiple Sclerosis Patients That Experience Delayed-release Dimethyl Fumarate-associated Lymphopenia, Meaningful Lymphocyte Reconstitution Occurs Approximately 3 Months After Discontinuation of Delayed-release Dimethyl Fumarate. Poster presentation at AAN 2019 in Philadelphia, PA
59. Wallach A, Vollmer B, Corboy J, Dubovskaya K, Kister I, **Alvarez E**. Serious Adverse Events in Rituximab-Treated Patients with Multiple Sclerosis and Related Disorders. Poster presentation at AAN 2019 in Philadelphia, PA
60. Vollmer T, **Alvarez E**, Nair K, Cohen J, Boster A, Pradhan A, Musch B, Ma X, Pei J, PhD4, Yang M, Moss B, Weinstock-Guttman B, Bermel R. Evaluation of Shorter Infusion Times with Ocrelizumab in Patients with Relapsing-Remitting Multiple Sclerosis. Abstract presented at CMSC 2019 in Seattle, WA
61. **Alvarez E**, Bar-Or A, Buckle G, Cohan S, Cree B, Mao-Draayer Y, McCarthy M, Miller A, Weinstock-Guttman B, Jaitly N, Cruz L, Kolodny S, Meng X, Tomic D, Su W. Assessing the Safety and Tolerability of Conversion to Siponimod in Patients with Relapsing Forms of Multiple Sclerosis: Design of the Exchange Study. Abstract presented at CMSC 2019 in Seattle, WA
62. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E** Higher efficacy therapies appear to have a disproportionately larger effect in younger patients. Presentation at ECTRIMS 2019 in Stockholm, Sweden
63. **Alvarez E**, Nair K, Shelton I, Sillau S, Selva S, Vollmer T Characterizing Cytokine Changes Before and After Ocrelizumab Infusions and Their Contribution to Infusion Related Reactions. Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
64. Vollmer B, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E** Ocrelizumab real-world safety and effectiveness in the one year treatment of multiple sclerosis compared to other disease modifying therapies. Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
65. **Alvarez E**, Nair K, Shelton I, Sillau S, Vollmer T Tolerability and Safety of Switching from Rituximab to Ocrelizumab: Evaluating Factors Associated with Infusion Related Reactions. Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
66. **Alvarez E**, Nair K, Ritchie A, Shelton I, Gendelman S, Sillau S, Owens G, Vollmer T Serum Neurofilament Levels in Long Term Rituximab Treated Multiple Sclerosis Patients: Are We Over or Under Treating? Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
67. Steinman L, Fox E, Hartung HP, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Power S, Bosco J, Mok K, Cree B Study Design and Patient Demographics of the ULTIMATE Phase III Trials Evaluating Ublituximab (UTX), a Novel Glycoengineered Anti-CD20 Monoclonal Antibody (mAb), in Patients with Relapsing Multiple Sclerosis (RMS). Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
68. Vollmer T, **Alvarez E**, Nair K, Cohen J, Boster A, Katz J, Pardo G, Pei J, Raut P, Merchant S, Bobbala A, Pradhan A, Moss B Safety results for administering ocrelizumab per a shorter infusion protocol in patients with primary progressive and relapsing multiple sclerosis. Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
69. Vollmer T, **Alvarez E**, Nair K, Gorritz M, Maloney H, Ding Y, Golan T, Bartolome L, Wade RL, 2, Kumar R, Su W, Russo P. Physicians' perspectives on the identification and diagnosis of secondary progressive multiple sclerosis during the clinical encounter. Poster presentation at ECTRIMS 2019 in Stockholm, Sweden
70. Steinman L, Fox E, Hartung HP, Cree B, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K. Baseline Demographics and Disease Characteristics from the ULTIMATE Phase III Trials Evaluating Ublituximab, a Novel Glycoengineered Anti-CD20 Monoclonal Antibody, in Patients with Relapsing Multiple Sclerosis. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
71. Engmann N, Sheinson D, Yang E, Fiore D, **Alvarez E**, Nair K, Vollmer T. Real-world outcomes with ocrelizumab compared with other disease-modifying therapies in US commercial claims databases. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
72. Vollmer B, Gendelman S, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. A Year and Half of Real World Efficacy and Safety of Ocrelizumab in the Treatment of Multiple Sclerosis. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
73. Piquet A, **Alvarez E**, Bennett J, Knapp C, Sillau S, Nair K, Vollmer T. A Retrospective, Cross-sectional Study Evaluating Plasma Neurofilament Light Levels in Autoimmune Encephalitis. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
74. Gross R, Ritchie A, Sillau S, Nair K, Knapp C, Selva S, Owens G, Bennett JL, **Alvarez E**, Vollmer T. A cross-sectional exploration of four CSF and plasma biomarkers across headache, multiple sclerosis, and neuromyelitis optica spectrum disorder. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
75. **Alvarez E**, Ritchie A, Nair K, Gross R, Piquet A, Knapp C, Selva S, Sillau S, Bennett JL, Owens G, Vollmer T. Evaluating the Correlation Between Spinal Fluid and Blood Levels of Neurofilament Light, GFAP, Tau, and UCHL1: Do We Need a Correction Factor in Evaluating Blood Levels? Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
76. Vollmer B, Vollmer T, Corboy J, **Alvarez E**. Evaluation of Risk Factors in Developing Lymphopenia and Hypogammaglobulinemia in Anti-CD20 Treated Multiple Sclerosis Patients. Poster presentation at AAN Virtual Annual Meeting, April 25, 2020
77. Kletenik I, Medina L, Honce J, Lopez Paniagua D, Valdez B, Engebretson E, Vollmer T, **Alvarez E**. Metacognitive Insight and Reduced Brain Volume in Multiple Sclerosis. Poster presentation at the International Neuropsychological Society 2020 Annual Meeting in Denver, CO.
78. **Alvarez E**, Gendelman SZ, Nair KV, Ritchie A, Shelton IT, Sillau SH, Owens GP, Vollmer TL. No Effect of Body Mass Index on Serum Neurofilament Light in Long Term Rituximab Treated Multiple Sclerosis Patients: The Need to Correct for Age, Blood Volume, and Disability. Poster presentation at ACTRIMS 2020 in Palm Beach, FL.
79. Wundes A, **Alvarez E**, Freedman M, Mokliatchouk O, Chen H, Kapadia S, Messer J, Naismith R. Efficacy of Diroximel Fumarate in Highly Active Relapsing-Remitting Multiple Sclerosis: Interim Results from the Phase 3 EVOLVE-MS-1 Study. Abstract accepted for CMSC Virtual 2020
80. Manago M, **Alvarez E**, Kline P, Christiansen C. Proximal Movement Compensations Are Related to Muscle Function and Walking Capacity in People with Multiple Sclerosis. Abstract accepted for CMSC Virtual 2020
81. **Alvarez E**, Ritchie A, Nair K, Gross R, Piquet A, Knapp C, Selva S, Sillau S, Bennett J, Owens G, Vollmer T. Correlation Between Spinal Fluid and Blood Levels of Neurofilament Light, GFAP, Tau, and UCHL1: Do We Need a Correction Factor? Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
82. Ritchie A, Selva S, Owens G, Knapp C, Parra Gonzalez J, **Avarez E**, Nair K, Vollmer T. Determining the effect of blood anticoagulants on the detection level of neurobiomarkers in headache and control patients on the SIMOA platform. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
83. Gross R, Ritchie A, Selva S, Parra Gonzalez J, Knapp C, Sillau S, Owens G, Nair K, Vollmer T, **Alvarez E**. Monitoring Multiple Sclerosis Treatment with Plasma Biomarkers: NfL, GFAP, UCH-L1, and Tau. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
84. Greenberg B, **Alvarez E**, Foley J, Henry R, Brown J, Camacho E, Meng X, Ziehn M, Brown B, Hua L. OLIKOS study design: exploring maintained ofatumumab efficacy in relapsing MS patients who transition from intravenous anti-CD20 therapy. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
85. Vollmer B, Declusin A, Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. Ocrelizumab real-world safety and effectiveness in the two years of treatment in multiple sclerosis. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
86. Vollmer B, Vollmer T, Corboy J, **Alvarez E**. Risk Factors for Developing Lymphopenia and Hypogammaglobulinemia in anti-CD20 Treated Patients with Multiple Sclerosis. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
87. Ziemssen T, Giovannoni G, **Alvarez E**, Bhan V, Hersh C, Hoffmann O, Oreja-Guevara C, Robles-Cedeño R, Trojano M, Vermersch P, Dobay P, Khwaja M, Stadler B, Hach T, Piani-Meier D, Burton J. MSProDiscussTM is a useful tool to aid discussion of multiple sclerosis disease progression: Results from a large, real-world qualitative survey. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
88. Smoot K, **Alvarez E**, Chen C, Vollmer B, Stuchiner T, Grote L. Characterizing GI events in early versus recent dimethyl fumarate cohorts at two large MS centers. Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
89. **Alvarez E**, Ritchie A, Nair K, Gross R, Piquet A, Knapp C, Selva S, Sillau S, Bennett J, Owens G, Vollmer T. Correlation Between Spinal Fluid and Blood Levels of Neurofilament Light, GFAP, Tau, and UCHL1: Do We Need a Correction Factor? Poster Presentation at ECTRIMS/ACTRIMS 8th Joint Meeting September 11-13, 2020
90. Roman C, Hersh C, Sillau S, **Alvarez E**. Comparative Safety of Dimethyl Fumarate and Fingolimod: Findings from the FDA Adverse Event Reporting System (FAERS). Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
91. Vollmer B, Ijadi N, Declusin A Nair K, Sillau S, Corboy J, Vollmer T, **Alvarez E**. Ocrelizumab two-year real-world safety and effectiveness over in the treatment of multiple sclerosis. Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
92. Ziemssen T, **Alvarez E**, Bhan V, Burton J, Hoffmann O, Oreja-Guevara, Robles-Cedeno R, Trojano M, Vermersch P, Napoli S, Miravalle A, Xu Y, Vandercappellen J, Khwaja M, Marchaterre M, Stadler B, Hach T, Giovannoni G. Development and Usability Testing of a Patient-based Digital Tool to Understand Early Signs of Changes in Multiple Sclerosis Symptoms and Progression: Your MS Questionnaire. Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
93. Hua L, **Alvarez E**, Foley J, Henry R, Brown J, Camacho E, Meng X, Ziehn M, Brown B, Greenberg B. OLIKOS Study Design: Exploring Maintained Ofatumumab Efficacy in Relapsing MS Patients who Transition from Intravenous Anti-CD20 Therapy. Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
94. Ziemssen T, Arnold D, **Alvarez E**, Cross A, Willi R, Li B, Kukkaro P, Kropshofer H, Ramanathan K, Merschhemke M, Su W, Haering D, Hauser S, Kappos L, Kuhle J. Prognostic Value of Serum NfL for Subclinical Disease Activity and Worsening in Patients with RMS: Results from the Phase 3 ASCLEPIOS I and II Trials. Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
95. Steinman L, Fox E, Hartung HP, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Cree B. Efficacy and safety of ublituximab versus teriflunomide in relapsing multiple sclerosis: Results of the Phase 3 ULTIMATE I and II trials. Abstract presentation at AAN Virtual Annual Meeting, April 17, 2021
96. A Patient-based Digital Tool to Detect Early Signs of Changes in MS Symptoms and Progression: Your MS Questionnaire – Abstract presentation at the European Academy of Neurology Annual Meeting, June 19, 2021
97. Wolf A, Pratt R, Crooks K, Borko T, Parra Gonzalez J, Vollmer T, Frazer-Abel A, **Alvarez E**. Response to COVID-19 mRNA Vaccination in Patients with Multiple Sclerosis on anti-CD20 Disease Modifying Therapies. Abstract presentation at the ANA 2021 Annual Meeting, October 15, 2021
98. Evaluating the Impact of Administering Ocrelizumab Via a Home Infusion on Safety and Patient Reported Outcomes. Late-Breaking Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
99. Olikos Study Design: Exploring maintained ofatumumab efficacy in relapsing MS patients who transition from intravenous anti-cd20 therapy. Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
100. Improving Communication about Multiple Sclerosis: The MS-Support Decision Aid. Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
101. Real-World Cost of Care, Treatment Completion and Site of Care Cost for Patients with Multiple Sclerosis Initiating Infused Disease-Modifying Therapies. Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
102. Steinman L, Fox E, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, and Cree B. Efficacy and Safety of Ublituximab Versus Teriflunomide in Relapsing Multiple Sclerosis: Results of the Phase 3 Ultimate I and II Trials. Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
103. Characterizing Activities of Daily Living in MS Patients with Processing Speed Scores Above and Below a Threshold Previously Shown to Predict Employment Status. Poster Presentation at the 2021 Annual Meeting of the Consortium of Multiple Sclerosis Centers in Orlando, Florida
104. Ph3 results of the ULTIMATEI&II global studies: Ublituximab v. teriflunomide in RMS. Poster presentation at the ECTRIMS 2021 European Charcot Foundation Annual Meeting
105. Ublituximab Is Associated With Significant Improvement in the Multiple Sclerosis Functional Composite (MSFC): Results From the Phase 3 ULTIMATE I & II Studies. Poster Presentation at ECTRIMS 2021
106. Development of Your MS Questionnaire: A Patient Completed Digital Tool to Monitor Multiple Sclerosis Disease Symptoms and Their Impact on People’s Life. Poster Presentation at ECTRIMS 2021
107. CELLO: a phase IV, multicenter, randomized, double-blind, placebo-controlled study assessing efficacy of ocrelizumab in radiologically isolated syndrome. Poster Presentation at ECTRIMS 2021
108. Longbrake E, Hua L, Mowry E, Gauthier S, **Alvarez E**, Cross A, Pei J, Priest J, Winger R, Hafler D. CELLO: A Phase IV, Multicenter, Randomized, Double-Blind, Placebo-Controlled Study Assessing Efficacy of Ocrelizumab in Radiologically Isolated Syndrome. Poster presentation at ACTRIMS 2022 in West Palm Beach, FL
109. Cree B, Fox E, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Steinman L. Reduction in T1 Hypointense Lesions With Ublituximab vs Teriflunomide in the Phase 3 ULTIMATE I and II Studies in Relapsing Multiple Sclerosis. Poster presentation at ACTRIMS 2022 in West Palm Beach, FL
110. **Alvarez E**, Steinman L, Fox E, Hartung H, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L,. Cree B. Neutralizing Antibodies and Antidrug Antibodies in the Ublituximab Phase 3 ULTIMATE I and II Studies in Relapsing Multiple Sclerosis. Poster presentation at ACTRIMS 2022 in West Palm Beach, FL
111. Fox E, Steinman L, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Cree B. Pharmacodynamics of B-Cell Depletion and Pharmacokinetics of the Novel Anti-CD20 Monoclonal Antibody Ublituximab in Patients With Relapsing Multiple Sclerosis. Poster presentation at ACTRIMS 2022 in West Palm Beach, FL
112. **Alvarez E**, Steinman L, Fox E, Hartung H, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Cree B. Ublituximab Treatment Is Associated With a Significant Proportion of Patients Achieving No Evidence of Disease Activity (NEDA): Results From the Ultimate I and Ultimate II Phase 3 Studies of Ublituximab vs Teriflunomide in Relapsing Multiple Sclerosis (RMS) Abstract Presentation at AAN 2022 Seattle, WA
113. Cree B, Fox E, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Steinman L. Disability Improvements With Ublituximab in Relapsing Multiple Sclerosis (RMS): Expanded Disability Status Scale (EDSS), 9-Hole Peg Test (9-HPT), and Timed 25-Foot Walk (T25FW) Evaluations From the Phase 3 ULTIMATE I and II Studies. Abstract Presentation at AAN 2022 Seattle, WA
114. Fox E, Steinman L, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Cree B. Infusion-Related Reactions (IRRs) With Ublituximab in Patients With Relapsing Multiple Sclerosis (RMS): Post Hoc Analyses From the Phase 3 ULTIMATE I and II Studies. Abstract Presentation at AAN 2022 Seattle, WA
115. Fox E, Steinman L, Hartung H, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Weiss M, Bosco J, Power S, Mok K, Lee L, Cree B. Relapse Rate and Time to First Relapse Were Improved With Ublituximab vs Teriflunomide in the Phase 3 ULTIMATE I and ULTIMATE II Studies in Patients With Relapsing Multiple Sclerosis (RMS). Abstract Presentation at AAN 2022 Seattle, WA
116. VollmerB, Riddle E, Mendoza J, **Alvarez E**. Retrospective Evaluation of De-Escalation from Anti-CD20 Therapies to Fumarates as a Treatment Approach. Poster Presentation at AAN 2022 Seattle, WA
117. Borko T, Selva S, Baxter R, Cabrera-Martinez B, Rester C, Sillau S, Pastula D, Sabalza M, Venkataraman I, Bennett J, **Alvarez E,** Gross R, Shah A, Kammeyer R, Vollmer T, Corboy J, Kedl R, Hsieh E, Piquet A. An Observational Study on the Humoral and Cellular Immune Response to SARS-CoV-2 mRNA Vaccination in Multiple Sclerosis and Other Autoimmune Neurological Disorders treated with Anti-CD20 Therapies. Abstract Presentation at AAN Summer Conference 2022 San Francisco, CA
118. **Alvarez E**, Wray S, Hersh C, Robertson D, Gupta A, Hu X, Zielman R, Boer I, Cheadle A, Cohen J. Compliance and Persistence With Ofatumumab Treatment in Patients with Relapsing Multiple Sclerosis in Clinical Trials for Up to 4 Years. Abstract Presentation at 38th European Committee for Treatment & Research in Multiple Sclerosis (ECTRIMS) Congress October 2022
119. Col N, Solomon A, **Alvarez E**, Pbert L, Ionete C, Berrios Morales I, Chester J, Kutz C, Iwuchukwu C, Livingston T, Springmann V, Col H, Ngo L. Can a Shared Decision-Making Tool Improve Multiple Sclerosis DMT Utilization? The MS-SUPPORT Decision Aid. Poster Presentation at CMSC 2022 in National Harbor, MD
120. **Alvarez E**, Steinman L, Fox E, Hartung H,Qian P,Wray S, Robertson D, Huang D, Selmaj K,Wynn D, Lee L, Cree B. Reduced Disease Progression with Ublituximab Vs Teriflunomide in the Phase 3 Ultimate I and II Studies in Relapsing Multiple Sclerosis. An Oral Presentation given at CMSC 2022 in National Harbor, MD
121. Kuhle J, Kappos L, Ziemseen T, Arnold D, **Alvarez E**, Cross A, Boer I, Gupta A, Hu X, Kukkaro P, Kieseier B, Zielman R, Hauser S. Serum Neurofilament Light Chain Levels and NEDA-3 Status With Ofatumumab Treatment in RMS Patients: Longer-term Analysis from ASCLEPIOS I/II and ALITHIOS. \*High Scoring\* Poster Presentation at 38th congress of ECTRIMS 2022, 26 – 28 October 2022 Amsterdam, The Netherlands.
122. **Alvarez E**, Robertson D, Wynn D, Xu Y, Lee L, Wray S. Ublituximab Is Associated With Significant Improvement in Fatigue: Results From ULTIMATE I and II. *Anticipated Planned Poster Presentation at CMSC 2023 in Denver, CO*
123. Ghezzi L, Kosa P, Freedman C, Cross A, **Alvarez E,** Freedman M, Greenwood M, Piccio L, Bielekova B. A Multi-site Assessment of Cerebrospinal Fluid-based Molecular Diagnostic Test of Multiple Sclerosis. Poster Presentation at ACTRIMS 2023 in San Diego, CA
124. Borko TL, Barrera B, Ritchie A, Selva S, Sillau S, Engebretson E, Seale R, **Alvarez E**, Corboy JR, shah A, Gross R, Silva D, Owens G, Piquet AL, Bennett JL, Vollmer TL, Chahin S, Nair KV. Establishing Baseline Demographic Specific Reference Ranges for NfL and GFAP in Healthy Controls. Poster Presentation at ACTRIMS 2023 in San Diego, CA
125. Brown B, **Alvarez E**, Henry RG, Brown J, Camacho E, Meng X, Ziehn M, Greenberg BM, Hua LH. Findings From OLIKOS: Baseline Immunoglobulin and B-Cell Concentrations in Patients Who Switch from Ocrelizumab to Ofatumumab. Poster Presentation at ACTRIMS 2023 in San Diego, CA
126. **Alvarez E**, Wray S, Robertson D, Huang D, Mok K, Garner CA, Lee L, Qian P. Onset and Maintenance of No Evidence of Disease Activity with Ublituximab: Analyses of the Phase 3 ULTIMATE I and II Studies in Participants with Relapsing Multiple Sclerosis. Poster Presentation at ACTRIMS 2023 in San Diego, CA
127. Vollmer B, Nair K, Sillau S, Corboy JR, **Alvarez E**. Comparison of Ocrelizumab and Rituximab over Two Years of Treatment for Multiple Sclerosis. Poster Presentation at ACTRIMS 2023 in San Diego, CA
128. Vollmer B, Nair K, Sillau S, Corboy JR, **Alvarez E**. Examining the Effect of Disease Duration in High-Efficacy Versus Mid-Efficacy Disease Modifying Therapies: Could this Inform when to De-Escalate? Poster Presentation at ACTRIMS 2023 in San Diego, CA
129. Steinman L, Fox E, Hartung HP, **Alvarez E**, Qian P, Wray S, Robertson D, Huang D, Selmaj K, Wynn D, Bosco JA, Mok K, Garner C, Cree B. Ublituximab Efficacy in Treatment-Naive Participants With Relapsing Multiple Sclerosis in the Phase 3 ULTIMATE I and II Studies. Poster Presentation at American Academy of Neurology (AAN) 2023 in Boston, MA
130. **Alvarez E**, Hersh CM, Robertson D, Das Gupta A, Hu X, Zielman R, Boer I, Cheadle A, Cohen JA. Compliance and Persistence With Ofatumumab Treatment in Patients With Relapsing Multiple Sclerosis in Clinical Trials for Up to 4 Years. Poster Presentation at American Academy of Neurology (AAN) 2023 in Boston, MA
131. Borko T, Barrera B, Ritchie A, Selva S, Sillau S, Engebretson E, Seale R, Valdez B, **Alvarez E**, Corboy J, Shah A, Gross R, Silva D, Owens G, Piquet AL, Bennett J, Vollmer T, Chahin S, Nair K. Establishing Baseline Demographic Specific Reference Ranges for NfL and GFAP in Healthy. . Poster Presentation at American Academy of Neurology (AAN) 2023 in Boston, MA
132. Vollmer B, Nair K, Sillau S, Corboy JR, **Alvarez E**. Examining the Effect of Disease Duration in High-Efficacy Versus Mid-Efficacy Disease Modifying Therapies: Could this Inform when to De-Escalate? Poster Presentation at American Academy of Neurology (AAN) 2023 in Boston, MA
133. **Alvarez E,** Steinman L, Hartung HP, Fox E, Qian P, Wray S, Robertson D, Mok K, Garner C, Cree B. Disease Outcomes With Ublituximab in Participants With Highly Active Disease: Subpopulation Analyses of the Phase 3 ULTIMATE I and II Studies in Participants With Relapsing Multiple Sclerosis. Poster Presentation at American Academy of Neurology (AAN) 2023 in Boston, MA
134. **Alvarez E**, Robertson D, Wynn D, Yihuan X, Lee L, Wray S. Ublituximab Is Associated with Significant Improvement in Fatigue: Results from Ultimate I and II. Oral presentation at the 2023 Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Denver, CO.
135. Montalban, S, Arnold DL, Weber MS, Piasecka-Stryczynska K, Tomic T, Kinkolykh A, Li Y, Guehring H, **Alvarez E**\*, Wolinsky JS. Clinical Outcomes with Evobrutinib in Relapsing Multiple Sclerosis over 3.5 Years of Treatment: An Ongoing Phase 2 Open-Label Extension. Oral presentation at the 2023 Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Denver, CO. \*Presenting author
136. Roman C, Hersch CM, West, T, Sillau SH, **Alvarez E\*.** Real-World Safety of Dimethyl Fumarate and Fingolimod: A Pharmacovigilance Study of the FDA Adverse Event Reporting System (FAERS). Poster Presentation at the 2023 Annual Meeting of the Consortium of Multiple Sclerosis Centers (CMSC), Denver, CO. \*Presenting author