

University of California, San Francisco
CURRICULUM VITAE

Name: Stephen L Hauser, MD

Position: Professor, Step A/S
Neurology
School of Medicine

Director, UCSF Weill Institute for Neurosciences
Professor, Department of Neurology

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EDUCATION

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|-------------|--|--------------------|-----------|
| 1968 - 1971 | Massachusetts Institute of Technology, Cambridge | S.B. | Chemistry |
| 1971 - 1975 | Harvard Medical School, Boston, MA | M.D. | |
| 1975 - 1976 | The New York Hospital, Cornell Medical Center, New York, NY | Intern | Medicine |
| 1976 - 1977 | The New York Hospital, Cornell Medical Center, New York, NY | Resident | Medicine |
| 1977 - 1980 | Massachusetts General Hospital, Boston | Resident | Neurology |
| 1977 - 1980 | Harvard Medical School | Clinical Fellow | Neurology |
| 1980 - 1983 | Harvard Medical School | Research Fellow | Neurology |

LICENSES, CERTIFICATION

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|------|--|
| 1978 | American Board of Internal Medicine |
| 1981 | American Board of Psychiatry and Neurology |
| 1977 | Massachusetts Board of Registration in Medicine License #56445 |
| 1992 | Medical Board of California License #G75715 |

PRINCIPAL POSITIONS HELD

| | | | |
|----------------|---|---------------------|-----------|
| 1976 - 1977 | The New York Hospital | Assistant Physician | |
| 1981 - 1983 | Harvard Medical School | Instructor | Neurology |
| 1983 - 1986 | Department of Neurology (Service Pr. Lhermitte), Hopital Salpetriere, Paris | | |
| 1986 - 1989 | Harvard Medical School | Assistant Professor | Neurology |
| 1989 - 1992 | Harvard Medical School | Associate Professor | Neurology |
| 1992 - present | University of California, San Francisco | Professor | Neurology |

OTHER POSITIONS HELD CONCURRENTLY

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|----------------|--|----------------------|--|
| 1983 - 1986 | Institut Pasteur | Visiting Scientist | Immunochemistry |
| 1986 - 1992 | Harvard Medical School | Affiliated Scientist | New England Regional Primate Research Center |
| 1986 - 1992 | Massachusetts General Hospital, Boston | Assistant Professor | Neurology |
| 1992 – 2017 | University of California, San Francisco | Chair | Neurology |
| 1992 - present | Moffitt-Long Hospital, San Francisco, CA | Chief | Neurology Service |
| 1992 - present | San Francisco Veterans Administration Medical Center | Consultant | |
| 1992 - present | San Francisco General Hospital | Staff Physician | |
| 1992 - present | UCSF Medical Center | Attending Physician | |
| 2016 - present | UCSF Weill Institute for Neurosciences | Director | |

HONORS AND AWARDS

| | |
|------|--|
| 1971 | Phi Beta Kappa (MIT Chapter) |
| 1971 | Pi Lambda Upsilon (Honorary Chemistry Society) |
| 1975 | Magna Cum Laude, Harvard Medical School |
| 1980 | Postdoctoral Fellowship Award, National Multiple Sclerosis Society |
| 1983 | Moseley Traveling Fellowship Harvard Medical School |

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| 1983 | Cino Del Duca Prize (Paris, France) | |
| 1986 | Upjohn Scholar Award | |
| 1987 | Harry Weaver Neuroscience Scholar, National Multiple Sclerosis Society | |
| 1988 | Rita Allen Foundation Award | |
| 1991 | Javits Neuroscience Investigator, National Institute of Health | |
| 1992 | Betty Anker Fife Chair in Neurology, UCSF | |
| 1997 | Fellow, American Academy of Arts and Sciences | |
| 1998 | Association of American Physicians | |
| 1999 | Member, Institute of Medicine (now National Academy of Medicine) | |
| 2000 | Robert A. Fishman Distinguished Chair in Neurology, UCSF | |
| 2002 | Outstanding Teacher Residents Award, Department of Neurology, UCSF | |
| 2002 | Outstanding Teacher Residents Award, Department of Neurology, UCSF | |
| 2005 | President, American Neurological Association | |
| 2008 | John Dystel Prize for Multiple Sclerosis Research | |
| 2013 | Charcot Award, Multiple Sclerosis International Foundation | |
| 2017 | Taubman Prize, A. Alfred Taubman Medical Research Institute | University of Michigan |

KEYWORDS/AREAS OF INTEREST

Multiple Sclerosis (MS), neuroimmunology, autoimmunity, human genetics.

MEMBERSHIPS

- 1996 - present American Academy of Neurology - Chair, Research Committee; Research Council
- 1996 - present American Neurological Association - Immediate Past President; Co-chair, Long Range Planning Committee; Awards Committee, Development Committee
- 1998 - present Association of American Physicians

- 1992 - present Association of University Professors of Neurology
- 2002 - present California Academy of Medicine
- 2001 - present International Federation of Multiple Sclerosis Societies - Executive Committee
- 2002 - present National Academy of Medicine (Institute of Medicine) – Past Chair, Section 7 (neurology and psychiatry)
- 1986 - present National Multiple Sclerosis Society – Research Programs Advisory Committee, 2009
- 1992 - present San Francisco Neurological Society
- 2003 - present The Dana Alliance for Brain Initiatives (DABI) – Executive Committee

SERVICE TO PROFESSIONAL ORGANIZATIONS

- 1986 - 1992 Medical Advisory Committee, Massachusetts Chapter, NMSS
- 1987 - 1987 Scientific Organizing Committee, Second International Congress of Neuroimmunology, Philadelphia
- 1990 - 1994 NINDS Oversight Committee, Cooperative Trial of B-Interferon as Treatment for MS
- 1991 - present Medical Advisory Board, National Multiple Sclerosis Society
- 1994 - present Scientific Advisory Board, ALS Center, California Pacific Medical Center
- 1994 - 1996 Executive Council, Society for Experimental Neuropathology
- 1994 - present Scientific Advisory Board, Buck Institute for Age Research
- 1996 - 1996 Multiple Sclerosis Scientific Symposium, American Academy of Neurology Chair
- 1996 - 1997 Oversight Committee, National Cooperative Trial of Linomide as Treatment for MS
- 1996 - 1998 Executive Council, American Neurological Association
- 1996 - present Association of University Professors of Neurology, Standing Committee for Veterans Administration Issues Chair, 2001 to present
- 1996 - present American Academy of Neurology, Alternate Delegate to Council of Academic Societies of the Association of American Medical Colleges
- 1997 - 2003 American Academy of Neurology, Lecture Award Subcommittee
- 1997 - 2001 NINDS Study Section NSDB
- 2002 - 2002 Executive Committee, California Academy of Medicine

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|----------------|--|-----------|
| 1999 - 2001 | Institute of Medicine, Committee on Multiple Sclerosis: Current Status and Strategies for the Future | |
| 1999 - 2001 | American Neurological Association, Scientific Program Committee | Chair |
| 2000 - 2000 | External Review, Department of Neurology, Emory University School of Medicine | |
| 2001 - present | Council, International Federation of Multiple Sclerosis Societies | |
| 2001 - 2001 | Advisory Committee to MS Programs, University of Utah, School of Medicine | |
| 2002 - 2002 | External Review, Department of Neurology, Brigham and Women's Hospital, Harvard Medical School | |
| 2002 - 2002 | Advisory Committee for Rehabilitation, Buck Community Foundation | |
| 2002 - present | External Advisory Board, Cleveland Clinic Research Foundation | |
| 2002 - 2006 | Institute of Medicine, Membership Committee | |
| 2002 - 2004 | Institute of Medicine, Section 7 (neurology and psychiatry) | co-Chair |
| 2003 - present | Long Range Planning Committee, American Neurological Association | Co-Chair |
| 2003 - 2003 | Member, Dana Alliance for Brain Initiatives | |
| 2004 - 2006 | Institute of Medicine, Section 7 (neurology and psychiatry) | Chair |
| 2004 - 2004 | External Review, Department of Neurology, University of Chicago | |
| 2004 - 2004 | Committee for Junior Faculty, Association of University Professors of Neurology | Chair |
| 2004 - 2015 | Scientific Advisory Board, Myelin Repair Foundation | Chair |
| 2005 - 2005 | External Review, Neuroscience Programs, Cleveland Clinic Foundation | |
| 2005 - 2007 | American Neurological Association | President |
| 2006 - 2006 | Society of Neurological Surgeons: Award Committee for the Grass Prize for Excellence in Research | |
| 2007 - 2007 | Rita Levi-Montalcini Prize Committee | |
| 2008 - 2008 | Fidelity Foundation Conference on Pain Research | co-Chair |
| 2009 - 2011 | Committee on Gulf War and Health, Institute of Medicine | Chair |
| 2009 - present | Research Council, American Academy of Neurology | |

- 2009 - present Awards Committee, American Neurological Association
- 2009 - present Research Programs Advisory Committee, National Multiple Sclerosis Society
- 2009 - 2015 Scientific Advisory Board, Buck Institute for Age Research Chair
- 2010 - present President's Commission on White House Fellowships, San Francisco Regional Panel
- 2010 - present Member, Presidential Commission for the Study of Bioethical Issues
- 2010 - present Member, Development Committee, American Neurological Association
- 2011 - 2013 Nominating Committee, American Neurological Association Chair
- 2012 - 2014 Committee on Long Term Effects of Blast Exposure, Institute of Medicine Chair
- 2014 - present Research Advisory Committee for Gulf War Illnesses, US Department of Veterans Affairs Chair
- 2015 - present External Review Committee for Neuroscience Programs, Oregon Health Sciences University advisory

SERVICE TO PROFESSIONAL PUBLICATIONS

- 1988 - 1989 Editorial Board: Progress in Neuroendocrinimmunology
- 1989 - 1991 Associate Editor: Progress in Neuroendocrinimmunology
- 1991 - 1993 Editor: Progress in Neuroendocrinimmunology
- 1989 - present Editorial Board: Autoimmunity Forum
- 1990 - 1993 Editorial Board: Neurology Chronicle
- 1989 - 1989 Reviewer, National Institute of Neurological Diseases and Stroke, NIH (Ad Hoc), Canadian Multiple Sclerosis Society, NMSS of Australia, France, Italy
- 1994 - present Section Editor, Current Science, Current Opinion in Neurology
- 1994 - present Editorial Board, Multiple Sclerosis
- 1994 - present Editor, Harrison's Principles of Internal Medicine
- 1994 - present Editorial Board, Journal of Neuroimmunology
- 1995 - 1995 Editorial Board, Journal of Contemporary Neurology
- 1995 - 2001 Editorial Board, Annals of Neurology
- 2000 - present Editorial Board, Clinical Neuroscience Research
- 2003 - present Editorial Board, Experimental Neurology
- 2005 - 2013 Editor-in-Chief, Annals of Neurology

INVITED PRESENTATIONS - INTERNATIONAL

- 1983 Lecturer in Neuroimmunology, Hopital Salpetriere and Hopital Kremlin-Bicetre, Paris
- 1993 Lecturer, World Congress of Neurology, Vancouver, BC
- 1993 Lecturer, Multiple Sclerosis Satellite Symposium, Victoria, BC
- 1996 Plenary Section Speaker, Association of Multiple Sclerosis Research, Paris
- 1996 Lecturer, Grand Rounds, Kantonsspital Basel, University Hospital, Basel, Switzerland
- 1996 Plenary Section Speaker, Association of Multiple Sclerosis Research, Paris
- 1996 Lecturer, Grand Rounds, Kantonsspital Basel, University Hospital, Switzerland
- 1997 Lecturer, Active Immunization for Autoimmune and Infectious Diseases Symposium, Annecy, France
- 1997 Lecturer, International Congress of the French Society of Neurology, Paris
- 1997 Lecturer, National Institute of Health, Genetics Multiple Sclerosis Workshop Madrid
- 1997 Visiting Professor, Vall d'Hebron University General Hospital, Catalonia, Spain
- 1998 Lecturer, American College of Neuropsychopharmacology, San Juan, PR
- 2003 Raymond D. Adams Lecturer, American Neurological Association Annual Meeting
- 2005 Keynote Speaker, Japanese Society of Neuroimmunology, Fukuoka, Japan
- 2008 NMSS ACTRIMS,ECTRIMS, LACTRIMS Meeting, Montreal
- 2010 Keynote Speaker for AAN Research Career Development Symposium, Toronto
- 2010 Gordon Holmes Lecture, Bournemouth, UK: Association of British Neurologists Meeting, Bournemouth, UK
- 2010 Pritchard Lecture, MS Society of Northern Ireland, Belfast
- 2010 The Dale McFarlin Memorial Lecture, International Society of Neuroimmunology, Spain
- 2012 Speaker, Institut du Cerveau et de la Moelle épinière: Conférence de Prestige de l'ICM, Paris, France

- 2013 Charcot Lecture, European Committee of Treatment and Research in MS (ECTRIMS), Copenhagen, Denmark
- 2016 Speaker at 32nd Congress of ECTRIMS, London, UK
- 2017 Kenneth P. Johnson Memorial Lecture, Americas Committee for Treatment and Reserch in Multiple Sclerosis (ACTRIMS), Orlando, Florida

INVITED PRESENTATIONS - NATIONAL

- 1980 Lecturer, Massachusetts General Hospital Post-graduate Neurology Course
- 1980 Lecturer, Longwood Area Neurology Program
- 1980 Lecturer, Brigham and Women's Hospital, Boston, MA
- 1980 Lecturer, Neuropathology Course. Harvard Medical School
- 1986 Visiting Professor, various universities
- 1989 Lecturer, "Pathogenesis of Neuroimmunologic Diseases" Woods Hole, MA
- 1990 William C. Baird Memorial Lecture (SUNY, Buffalo, NY)
- 1990 Lecturer, American Academy of Neurology (Neuroimmunology Course)
- 1992 Lecturer, Recent Advances in Neurology, San Francisco
- 1992 Robert Graves Lecturer, SUNY, Albany, NY
- 1993 Robert Kroc Visiting Professor, UCLA
- 1993 Lecturer, Brown Bag Lecture Series, UCSF
- 1993 Lecturer, American Academy of Neurology (Scientific Program)
- 1993 Lecturer, Grand Rounds, Department of Neurology, California Pacific Medical Center
- 1993 Lecturer, Grand Rounds, Department of Medicine, UCSF
- 1993 Lecturer, Northern California Multiple Sclerosis Society, Oakland, CA
- 1994 Lecturer, Grand Rounds, Department of Neurology, University of Colorado, Denver
- 1994 Lecturer, Colorado Society for Clinical Neurology, Denver
- 1994 Lecturer, Dean's Seminar, UCSF
- 1994 Lecturer, Grand Rounds, Department of Neurology, Wilford Hall, San Antonio, TX

- 1994 Lecturer, Grand Rounds, Department of Medicine, Wilford Hall, San Antonio, TX
- 1994 Lecturer, T-cell Receptor Conference, The New York Academy of Sciences, San Diego
- 1994 Benjamin Boshes Distinguished Lecturer, Northwestern University, Chicago, IL
- 1994 Lecturer, Grand Rounds, Department of Neurology, University of Washington, Seattle
- 1994 Lecturer, Puget Sound Neurological Society
- 1995 Lecturer, Grand Rounds, Department of Neurology, Massachusetts General Hospital
- 1995 Lecturer, Introduction to Clinical Medicine, UCSF
- 1995 Lecturer, Grand Rounds, Department of Medicine, Doctor's Hospital, Pinole
- 1995 Leader, Symposium on MS, American Academy of Neurology, Seattle
- 1996 Lecturer, Northern California Multiple Sclerosis Society, Millbrae, CA
- 1996 Lecturer, Grand Rounds, Department of Neurology, UCSF
- 1996 Chair, Antigen Non-Specific Therapy Session, Advances in the Understanding and Treatment of Multiple Sclerosis Conference, San Francisco
- 1996 Lecturer, Grand Rounds, Department of Neurology, New Jersey Medical School, Newark
- 1996 Keynote Speaker, Fannie & Charles Penikoff Research Symposium, NMSS, Chicago-Greater Illinois Chapter Annual Meeting, Chicago
- 1996 Lecturer, Grand Rounds, Department of Neurology, University of Chicago
- 1996 Lecturer, Grand Rounds, Department of Neurology, Oregon Health Sciences University
- 1997 Lecturer, Grand Rounds, Department of Neurology, Brigham and Women's Hospital
- 1997 Lecturer, Research Seminar, Brigham and Women's Hospital
- 1997 Lecturer, Grand Rounds, Department of Neurology, North Shore University Hospital, Manhasset, NY
- 1997 Visiting Professor, Grand Rounds, Division of Neurology, UC San Diego

- 1997 Lecturer, Annual Stanley F. Waterman Research Lecture, NMSS, Waltham, MA
- 1997 Keynote Speaker, National Leadership Conference, NMSS, Dallas
- 1998 Chair, Recent Advances in Neurology, Mini-Symposium on Multiple Sclerosis, San Francisco
- 1998 Visiting Professor, Department of Neurology, Yale University
- 1998 Keynote Speaker, NMSS Annual Meeting, New York Chapter, New York
- 1998 Visiting Professor, Mayo Clinic, Rochester, MN
- 1998 Lecturer, National Multiple Sclerosis Society Annual Meeting, Minneapolis
- 1998 Lecturer, Grand Rounds Speaker, UCSF, Department of Ophthalmology, San Francisco
- 1998 Visiting Professor, University of Nebraska Medical Center, Omaha
- 1999 Chair, Mini-Symposium on Multiple Sclerosis, San Francisco
- 1999 Visiting Professor, Oregon Health Sciences University, Portland
- 1999 Keynote Speaker, National Multiple Sclerosis Society, Milwaukee
- 1999 Lecturer, Grand Rounds, Medical College of Wisconsin, Milwaukee
- 1999 Lecturer, Grand Rounds, University of California at Davis
- 1999 Lecturer, Palo Alto Medical Foundation Research Institute, Santa Fe
- 2000 Lecturer, Recent Advances in Neurology, San Francisco
- 2000 Lecturer, National MS Society, Oregon Central Chapter, Portland
- 2000 Chair, Late Breaking News MS Section, American Academy of Neurology, San Diego
- 2000 Lecturer, Grand Rounds, UCSF, Department of Medicine
- 2000 Keynote Speaker, MS Summer Seminar, NMSS, Mountain Valley Chapter, Sacramento
- 2000 Lecturer, Fromm Institute, San Francisco
- 2000 Keynote Speaker, Rocky Mountain MS Center, Denver

2000 Lecturer, Harvard Autoimmunity Symposium, Boston

2001 Lecturer, Grand Rounds, University of California, San Francisco

2001 Visiting Professor, Duke University School of Medicine

2001 Lecturer, UCSF Postgraduate Course

2001 Featured Speaker, Scripps Research Institute

2001 Featured Speaker, Consortium of Multiple Sclerosis Centers

2001 Featured Speaker, UCSF Mary Clausen Symposium

2001 Featured Speaker, Northern California NMSS Annual Symposium

2001 Keynote Speaker, Channel Islands Chapter, NMSS Annual Meeting

2001 Grand Rounds, Cottage Hospital, Santa Barbara

2001 Featured Speaker, K08/K23 Residents Mentoring Symposium, American Neurological Association Annual Meeting

2001 Co-chair, Plenary Session, American Neurological Association Annual Meeting

2001 Keynote Speaker, Greater Delaware Chapter, NMSS Annual Meeting

2001 Neuroscience Seminar, University of Pennsylvania

2001 Keynote Speaker, Delaware Chapter, National Multiple Sclerosis Society

2002 Lecturer, Annual Meeting, American Association of Neurologists, Immunology Seminar, Dartmouth Medical School

2002 Genetics Seminar, UCLA School of Medicine

2002 Visiting Professor, Weil Medical School, Cornell University, Ithaca NY

2002 Speaker, Americas and European Committee for Treatment and Research of MS, Baltimore

2002 Visiting Professor, Alumni Day, UCLA School of Medicine

2002 Speaker, 25th Anniversary Celebration, Department of Neurology, Baylor College of Medicine, Houston

2003 G. Milton Shy Visiting Professor, Columbia University School of Medicine, University of Pennsylvania School of Medicine, NINDS

- 2003 Raymond D. Adams Lecturer, Massachusetts General Hospital
- 2004 Emery A. Wilson Lecture, University of Kentucky
- 2004 John Whitaker Memorial Lecture, Oregon Health & Science University
- 2004 Speaker, Translational Medicine in Autoimmunity, Keystone Symposium, Big Sky MT
- 2004 Participant, Josiah Macy Jr. Foundation Conference, Scottsdale AZ
- 2005 Keynote Speaker, Biogen/IDEC National Meeting, San Diego
- 2005 Rogowski Lecture, Yale University School of Medicine
- 2005 Speaker, Northern New England Neuroimmunology Symposium, Bretton Woods, NH
- 2005 Speaker, 35th Anniversary Symposium, Department of Neurology, Johns Hopkins University School of Medicine
- 2006 Lecturer, Thomas Jefferson University, Neurology Grand Rounds, Philadelphia
- 2006 6th Annual T. Evans Wykoff Lecture in Neuroscience, Virginia Mason Medical Center, Seattle
- 2006 Norman Allen Memorial Lecture, Ohio State University, Columbus, OH
- 2006 Keynote Speaker, Brown University Medical School Department of Clinical Neurosciences 20th Anniversary Symposium, Providence
- 2007 Grand Rounds, Department of Neurology and Neuroscience at New York Presbyterian Hospital-Cornell Medical Center, New York, NY
- 2007 Grand Rounds, Albert Einstein University, New York, NY
- 2007 Speaker, American Academy of Neurology 59th Annual Meeting, Boston
- 2007 Speaker, Harvard Center for Neurodegeneration and Repair symposium
- 2007 Keynote Speaker, Consortium of Multiple Sclerosis Centers Annual Meeting, Washington, DC
- 2008 Keynote Speaker for the New York Chapter of the NMSS, NY
- 2008 Bishop Lecturer and Visiting Professor of Experimental Neurology, Washington University School of Medicine, St. Louis, MO

- 2008 Lecturer and Faculty Member, American Neurological Association Summer Course for Physician Scientists, Park City, Utah
- 2008 Lecturer and Faculty Member, Course for Junior Faculty, American Neurological Association Annual Meeting, Salt Lake City
- 2008 Visiting Professor, Brigham and Women's & Mass General Hospitals, Boston
- 2008 Neuroimmunology Congress in Fort Worth, TX
- 2009 Visiting Lecturer, University of Utah
- 2009 Visiting Professor, University of Pennsylvania
- 2009 Lecturer and Faculty Member, Summer Course for Physician Scientists, American Neurological Association, Vail, Colorado
- 2009 Pellar Endowed Lectureship, Mayo Clinic, Scottsdale, Arizona
- 2010 Lecturer, Recent Advances in Neurology, San Francisco
- 2010 Lecturer, Wyeth/Pfizer Frontiers in Human Disease Symposium, New York
- 2010 Grand Rounds, University of Massachusetts-Worcester
- 2010 Myelin Interest Group Speech, New York (NYU)
- 2010 Harvard NeuroDiscovery Center Annual Symposium 2010
- 2011 Grand Rounds, New York Presbyterian Hospital-Weill Cornell Medical Center, New York
- 2011 Visiting Professor in Neuroscience, Oregon Health Sciences University, Portland, OR
- 2011 Dana Foundation Brain Awareness Lecture, Portland, OR
- 2011 Scripps Institute of Medicine Future of Genomic Medicine Symposium, San Diego, CA
- 2011 American Neurological Association Junior Faculty Symposium, San Diego, CA
- 2011 Genentech Townhall Lecture
- 2011 The Robert Wartenberg Lecture, American Academy of Neurology, Honolulu, HI
- 2012 Grand Rounds, University of Chicago
- 2012 Speaker, American Neurological Association Annual Meeting (two talks)

- 2012 Keynote Speaker, National Multiple Sclerosis Society Research Symposium, Chicago, IL
- 2012 Speaker, 4th Annual ANA Translational and Clinical Research Course: Career Development in Translational Neuroscience, San Francisco, CA
- 2012 Speaker, ACTRIMS/CMSC Symposium, San Diego, CA
- 2013 Speaker, UC Berkeley Symposium on Genomic Medicine
- 2013 Harvey W. Buchsbaum Visiting Professor, University of Arizona
- 2013 James W. Stephens Visiting Professor, University of Colorado School of Medicine
- 2013 The Donald Paty Memorial Lecture, ACTRIMS, Orlando, FL
- 2014 Gilbert H. Glaser Lecture, Yale University
- 2015 Kenneth P. Johnson Memorial Lecture, University of Maryland
- 2014 Speaker, International Neuroethics Society Annual Meeting, Washington, DC
- 2015 Grand Rounds, Weil Cornell University
- 2015 Kenneth P. Johnson Memorial Lecture, University of Maryland
- 2015 Speaker, PCSBI Minding Gray Matters Symposium, Washington, DC
- 2015 Speaker, Kansas City Neurology/Neurosurgery Society Meeting, Kansas City, MO
- 2105 Dewey K. Ziegler Professorship Lecture, University of Kansas
- 2015 Interactive Session at American Neurological Association Meeting, Chicago
- 2016 Keynote Speaker, 6th annual George Washington Institute for Neuroscience Symposium
- 2016 Speaker, Progressive MS Alliance Meeting, San Francisco

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT ACTIVITIES

- 2010 Recent Advances in Neurology; Approved for 15.5 hours of AMA PRA Category 1 credit
- 2010 ANA Annual Meeting in Baltimore, MD; 22 hours of credit plus 8 for the Junior Faculty Meeting

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| 2010 | Frontiers in Neurology and Neuroscience (Grand Rounds); 5 hours per year |
| 2011 | Recent Advances in Neurology (RAIN); Approved for 15.5 hours of AMA PRA Category 1 credit |
| 2011 | AAN Annual Meeting in Honolulu, HI; 20 hours of credit |
| 2011 | ANA Annual Meeting in San Diego, CA: 22 hours of credit plus 8 for the Junior Faculty Meeting |
| 2011 | Neurology Grand Rounds: 5 hours per year |
| 2012 | Recent Advances in Neurology (RAIN); approved for 2 hours of AMA PRA Category 1 credit |
| 2012 | ANA Annual Meeting in Boston, MA; 22 hours of credit plus 8 for the Junior Faculty Meeting |
| 2012 | AAN Annual Meeting in New Orleans, LA; 20 hours of credit |
| 2012 | Neurology Grand Rounds: 5 hours per year |
| 2013 | Recent Advances in Neurology (RAIN); approved for 2 hours of AMA PRA Category 1 credit |
| 2013 | Neurology Grand Rounds: 5 hours per year |
| 2013 | AAN Annual Meeting in San Diego; 20 hours of credit |
| 2014 | Neurology Grand Rounds: 5 hours per year. |

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

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|----------------|--|----------|
| 1997 - 2002 | NINDS Study Section | NSDB |
| 1999 - 2001 | Institute of Medicine, Committee on Multiple Sclerosis: Current Status and Strategies for the Future | member |
| 2002 - 2004 | Institute of Medicine, section 7 (neurology and psychiatry) | co-Chair |
| 2004 - 2006 | Institute of Medicine, section 7 (neurology and psychiatry) | Chair |
| 2006 - 2006 | Institute of Medicine, Admissions Committee on Epidemiology and Biostatistics | Chair |
| 2010 - 2010 | President's Commission on White House Fellowships, San Francisco Regional Panel | Member |
| 2010 - present | Presidential Commission for the Study of Bioethical Issues | Member |
| 2014 - present | Research Advisory Committee for Gulf War Illnesses, US Department of Veterans Affairs | Chair |

SERVICE ACTIVITIES SUMMARY

Since 2010, I have served the President of the United States as a member of the Presidential Commission for the Study of Bioethical Issues. I am the only neuroscientist in the group of 10

appointees who are charged with advising the President on issues that may emerge from advances in biomedicine and related areas of science and technology. I also Chair the Research Advisory Committee for the Secretary of the Department of Veterans' Affairs (2014-), charged with advising the VA secretary on medical research priorities arising from service in the conflicts in the Middle East.

For UCSF and the School of Medicine, I am serving on several committees and advisory councils including the Ethics Steering Committee (since 2011); the Neurological Sciences Academic Development Award (NSADA) K12 Advisory Committee (since 2004); the Executive Board, Capital Campaign for UCSF (since 2001) and the Clinical Chairs Committee (since 1997). I served as Chair of the Search Committees charged with selecting chairs of the Departments of Psychiatry (2013; Matthew State), and Medicine (2016; Robert Wachter). I also currently serve on search committees for the Department of Psychiatry and the Institute of Neurodegenerative Diseases.

UCSF CAMPUSWIDE

- 1992 - 1994 Organ Transplant Committee
- 1992 - present Executive Medical Board of the Medical Staff, UCSF
- 1993 - 1995 Chancellor's Council
- 1994 - 2000 Credentials Committee of Medical Staff
- 1995 - 1996 Committee on Privilege and Tenure, Academic Senate
- 1996 - present Executive Committee, Fundraising Advisory Council
- 1996 - present Strategic Planning Board
- 1996 - present Academic Implementation Committee on Mission Bay
- 1996 - present Transitional Funds Flow Committee
- 1997 - present Bylaws Committee of Medical Staff
- 1997 - present Nominating Committee of Medical Staff
- 1997 - 1998 Vice President, Medical Staff
- 1998 - 2000 Adult Neurology Service Line Executive Committee, UCSF/
Stanford Health Care
- 1998 - 2000 Child Neurology Service Line Executive Committee, UCSF/
Stanford Health Care
- 1998 - 2000 Clinical Policy Planning Committee, UCSF/Stanford Health
Care
- 1998 - 2000 President, Medical Staff, UCSF
- 1998 - 2000 Chair, Executive Medical Board, UCSF
- 1999 - 1999 Strategic Planning Committee
- 1999 - present The Hospitals Auxiliary
- 1999 - 2000 Chair, Hospital Director Search Committee

- 2000 - present Marketing and Strategic Planning Committee, Clinical Practice Organization
- 2000 - present Transfusion Committee
- 2000 - present Medical Center Governance Advisory Council
- 2000 - present Board Member, Clinical Practice Organization
- 2000 - 2001 Hospital Replacement Committee
- 2000 - 2002 Chair, Credentials Committee, UCSF Medical Center
- 2001 - 2001 Executive Vice Chancellor Search Committee
- 2001 - 2001 Strategic Planning Committee
- 2003 - 2003 Orthopaedic Surgery Chair Search Committee
- 2002 - 2004 Clinical Services Executive Board
- 2002 - 2004 Chair, Bylaws Committee, UCSF Medical Center
- 2003 - 2003 Pediatrics Chair Search Committee
- 2003 - 2003 Stem Cell Executive Committee
- 2003 - 2003 Program in Human Genetics Executive Committee
- 2006 - 2008 Chair of the Research Committee of the Strategic Planning Board
- 2011 - present Ethics Steering Committee
- 2012 - present Chair, Industry Relations Advisory Group (subcommittee of Ethics Steering Committee)

SCHOOL OF MEDICINE

- 1992 - present Board of Directors, Medical Group at UCSF
- 1993 - present Selection Committee, Helen B. Royer Award
- 1993 - 1993 Neurosciences Long Range Planning Committee, SF VAMC
- 1993 - 1994 Specialty Subcommittee of Residency Positions Allocation Task Force
- 1994 - 1994 Epidemiology and Biostatistics Chair Search Committee
- 1994 - 1994 Chair, Department of Medicine Chair Search Committee
- 1994 - 1995 Advisory Committee on Postdoctoral Education
- 1994 - 1995 Academic Program Planning Committee for SFGH
- 1995 - 1995 Chair, Clinical Integration Committee
- 1995 - 1995 Planning Committee, School of Medicine Leadership Retreat
- 1995 - present School of Medicine Fundraising Advisory Council

1996 - 1996 Chair, Task Force on AIDS Program Planning

1996 - 1996 Chair, Department of Neurological Surgery Chair Search Committee

1996 - 1998 Chair, Basic Science/Clinical Chairs and ORU Directors Committee

1996 - 1998 Dean's Executive Committee

1996 - present Medical Group Business Services Advisory Board

1996 - 1996 Planning Committee, UCSF Center for the Neurobiology of Addiction

1997 - present UCSF Center for Neurobiology of Addiction, Advisory Board

1997 - present Chair, Clinical Chairs Committee

1998 - 1998 Center for Integrative Medicine Director Search Committee

1998 - 1998 AIDS Research Institute Director Search Committee

1998 - present Clinical Program Planning Core Group

1998 - 1998 Chair, Neurodegenerative Diseases Research Institute; Director, Search Committee

1999 - 1999 Dean's Core UCSF/Stanford Health Care Planning Committee

1999 - 1999 Chair, Department of Surgery Chair Search Committee

1999 - 1999 Department of Physical Therapy Chair Search Committee

2000 - present Chair, Geographic Dispersion Committee

2001 - 2001 Howard Hughes Medical Institute Nomination Committee for the Competition in Patient-Oriented Research

2001 - present Nominations Committee

2001 - present Executive Board, Capital Campaign for UCSF

2001 - present Chair, Liaison Committee for Medical Education Subcommittee, Clinical Science Departments

2001 - 2002 Co-chair, School of Medicine Space Committee

2002 - 2002 Clinical Research Committee, UCSF

2003 - present Co-chair, Mission Bay Neurosciences Program Committee

2003 - present Parnassus Heights Planning Committee

2004 - present Neurological Sciences Academic Development Award (NSADA) K12 Advisory Committee

2005 - 2006 Search Committee for the Chair of the Department of Orthopedics

- 2006 - 2007 Search Committee for the Chair of the Department of Medicine
- 2011 - 2013 Chair, Search Committee for Chair of Department of Psychiatry
- 2015 - 2016 Chair, Search Committee for Chair of Department of Medicine

TEACHING SUMMARY

I hold professor rounds monthly, lead a quarterly evening resident seminar and discussion, and give grand rounds at least once per year (32 hours). These are well attended by residents, postdocs and fellows from Neurology.

INFORMAL TEACHING

- 2014 - 2017 Professor Rounds and quarterly seminars: 2 hrs/session x 16 = 32 hours
- 2014 - 2017 Teaching while attending: 1 hr/week x 50 = 50 hours
- 2014 - 2017 Mentoring Postdoctoral Fellows and Junior Faculty: 6 hrs/week x 40 = 240 hours.

MENTORING SUMMARY

I was chair of the Department of Neurology for 25 years, and currently serve as Director of the UCSF Weill Institute for Neurosciences. I have an important role in overseeing the mentoring of junior faculty in the department; some I mentor closely and others more from a distance, depending on the circumstances and their individual needs. Currently, I spend considerable efforts mentoring junior faculty in the Neuroimmunology Division that I lead; these include Jennifer Graves, Jeffrey Gelfand, Michael Wilson, and Riley Bove; I also mentor Marc Levin, a neuro-ophthalmologist who collaborates with our group. Outside of the Neuroimmunology Division, I have closely mentored Dena Dubal and Aimee Kao, among other junior faculty.

I meet with them both formally and informally as needed, to review their progress and facilitate their transition to independence. In addition, I help them understand the processes of academic appointment, review, and advancement, and I help them seek and compete for ongoing funding to support their research.

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

| Dates | Name | Program or School | Mentor Type | Role | Current Position |
|-------------|--------------------|-------------------|-------------|---------|-----------------------------------|
| 1998 - 2000 | Ari J. Green, M.D. | Duke University | | Advisor | Asst Prof Clin X, Neurology, UCSF |

| Dates | Name | Program or School | Mentor Type | Role | Current Position |
|-------------|---------------------|-------------------|-------------|---------|---|
| 2002 - 2004 | Brinda Kamdar, M.D. | UCSF | | Advisor | Assistant in Anesthesiology, Mass Gen, Boston; Instructor, Harvard Medical School |

POSTDOCTORAL FELLOWS AND RESIDENTS MENTORED

| Dates | Name | Fellow | Mentor Role | Faculty Role | Current Position |
|----------------|--------------------------------|--------|-------------|--------------|--|
| 2015 - present | Ariele Greenfield, M.D. | | | | Clinical Fellow |
| 2015 - present | Antje Bischoff, MD | | | | Postdoctoral Scholar |
| 2013 - 2015 | Regina Schlaeger, M.D. | | | | Assistant Professor, University Hospital Basel |
| 2011 - 2015 | Pierre-Antoine Gourraud, Ph.D. | | | | Professeur des Universites, Nantes University Hospital, France |
| 2013 - 2016 | Antoine Lizee | | | | PhD Candidate, Nantes University Hospital, France |
| 2008 - 2011 | Ellen Mowry, M.D. | | | | Asst Prof of Neurology, Johns Hopkins School of Medicine |

| Dates | Name | Fellow | Mentor Role | Faculty Role | Current Position |
|----------------|--------------------------------------|--------|-------------|--------------|--|
| 2005 - present | Ari Green, M.D | | | | Asst Prof Clinical X, Neurology, UCSF (K12 recipient) |
| 2002 - 2006 | Til Menge, M.D. | | | | Department of Neurology/Ne urologische Klinik, Henrich- Heine University, Düsseldorf, Germany |
| 2002 - 2004 | Bruce Cree, M.D., Ph.D. | | | | Associate Professor of Neurology, UCSF (K23 recipient) |
| 1998 - 2003 | Christian Von Büdingen, M.D. | | | | Associate Professor of Neurology, UCSF (KO2 recipient) |
| 1998 - 2001 | Lisa F. Barcellos, Ph.D. | | | | Associate Professor of Epidemiology (tenure track), University of California, Berkeley |
| 1997 - 1999 | Jean- Christophe Ouallet, M.D. | | | | Department of Neurology, Centre Hospitalier Universitaire de Bordeaux (CHU- Bordeaux), France |

| Dates | Name | Fellow | Mentor Role | Faculty Role | Current Position |
|-------------|--------------------------------------|--------|-------------|--------------|--|
| 1996 - 1997 | Niklas Köhler, M.D. | | | | Physician, Department of Psychiatry and Psychotherap y, Eberhard- Karls- University, Tübingen, Germany |
| 1996 - 1999 | Emmanuelle Waubant, M.D./Ph.D. | | | | Professor of Neurology, UCSF; Director, Regional Pediatric MS Center; Director of Clinical Research, UCSF MS Center |
| 1995 - 1997 | Pablo Diaz- Villoslada, M.D. | | | | Professor and Director, Neuroimmun ology Group, Department of Neuroscience s, Institut d'Investigacio ns Biomèdiques August Pi I Sunyer (IDIBAPS), Barcelona, Spain |

| Dates | Name | Fellow | Mentor Role | Faculty Role | Current Position |
|-------------|-----------------------------|--------|-------------|--------------|--|
| 1993 - 1995 | Yi Li, M.D. | | | | Chair, Dept of Immunology Norman Bethune University, China |
| 1992 - 1995 | David Leppert, M.D. | | | | Clinical Science Leader at F. Hoffmann-LaRoche; Professor of Medicine, University Hospital Basel, Basel, Switzerland |
| 1992 - 1994 | Narendra Joshi, Ph.D. | | | | G.N.R. Knowledge Center for Genome Informatics, Institute of Genomics and Integrative Biology, Delhi, India |
| 1991 - 1992 | Antonio Garcíá-Merino, M.D. | | | | Department of Neurology, Clinica Puerta de Hierro, Spain |
| 1991 - 1996 | Claude Genain, M.D. | | | | Formerly Associate Professor of Neurology (in residence), UCSF; currently retired. |

| Dates | Name | Fellow | Mentor Role | Faculty Role | Current Position |
|-------------|-------------------------|--------|-------------|--------------|--|
| 1990 - 1993 | Koichiro Usuku, M.D. | | | | Department of Medical Information Science and Administration Planning, Kumamoto University Hospital, Japan |
| 1988 - 1990 | Luca Massacesi, M.D. | | | | Professor and Chief of Neurology, Careggi University Hospital, University of Florence, Italy |
| 1987 - 1990 | Eric Seboun, Ph.D. | | | | Attaché for Science at Ambassade de France in Israel |
| 1986 - 1989 | Tatsuhiko Hayashi, M.D. | | | | Department of Medicine, Keio University, Tokyo, Japan |

FACULTY MENTORING

| Dates | Name | Position while Mentored | Mentor Type | Mentoring Role | Current Position |
|----------------|--------------------|---|-------------|----------------|---|
| 2015 - present | Riley Bove, MD | Assistant Professor of Clinical Neurology | | Career Mentor | Assistant Professor of Clinical Neurology |
| 2015 - present | Michael Wilson, MD | Assistant Professor of Clinical Neurology | | Career Mentor | Assistant Professor of Neurology |

| Dates | Name | Position while Mentored | Mentor Type | Mentoring Role | Current Position |
|----------------|-----------------------------------|--------------------------------------|-------------|----------------|--|
| 2015 - present | Carolyn Bevan, MD, MS | Assistant Professor of Neurology | | Career Mentor | Assistant Professor of Neurology |
| 2014 - present | Marc H. Levin, MD, PhD | Assistant Professor of Ophthalmology | | Career Mentor | Assistant Professor of Ophthalmology |
| 2013 - 2015 | Pierre-Antoine Gourraud, PhD, MPH | Assistant Adjunct Professor | | Career Mentor | Professor, University of Nantes (France); Assistant Professor of Neurology, UCSF |
| 2013 - present | Michael Wilson, MD | Postdoctoral fellow/M.A.S. | | Career Mentor | Assistant Professor of Neurology |
| 2012 - present | Jennifer Graves, MD, PhD | Clinical Fellow | | Career Mentor | HS Assistant Clinical Professor |
| 2011 - present | Jeffrey Gelfand, M.D. | Clinical Fellow | | Career mentor | Assistant Professor of Clinical Neurology |
| 2009 - 2012 | Christian von Buedingen, M.D. | Assistant Adjunct Professor | | Career mentor | Assistant Professor in Residence |
| 2009 - 2012 | Bruce Cree, M.D., Ph.D. | HS Assistant Clinical Professor | | Career mentor | Associate Professor of Clinical Neurology |
| 2007 - 2011 | Ari Green, M.D. | HS Assistant Clinical Professor | | Career mentor | Associate Professor of Clinical Neurology |

RESEARCH AND CREATIVE ACTIVITIES SUMMARY

Identification of the genes that confer susceptibility to multiple sclerosis.

I established a national MS DNA repository in the US that provides samples from well-

characterized individuals with MS to investigators worldwide. I was a senior organizer of the International Multiple Sclerosis Genetics consortium, founded in 2003. With colleagues I have identified the first non-HLA risk genes for MS in 2007, and subsequently, essentially all common variants that influence risk; elucidated functional consequences of causative variants; applied admixture analyses to identify MS risk genes in non-Caucasian populations; and recently used whole genome sequencing and epigenetic studies to understand missing heritability.

- Hafler DA, Compston A, Sawcer S, Lander ES, Daly MJ, De Jager PL, de Bakker PIW, Gabriel SB, Mirel DB, Ivinson AJ, Pericak-Vance MA, Gregory SG, Rioux JD, McCauley JL, Haines JL, Barcellos LF, Oksenberg JR, **Hauser SL**. Risk alleles for multiple sclerosis identified by a genomewide study. *New Eng J Med*. 357:851-62, 2007.
- The International Multiple Sclerosis Genetics Consortium (IMSGC) and the Wellcome Trust Case Control Consortium 2 (WTCCC2). Genetic risk and a primary role for cell-mediated immune mechanisms in multiple sclerosis. *Nature*, 476:214-9, 2011.
- International Multiple Sclerosis Genetics Consortium. Network-Based Multiple Sclerosis Pathway Analysis with GWAS Data from 15,000 Cases and 30,000 Controls. *Am J Hum Genet*, 92(6):854-65, 2013. PMC3958952
- International Multiple Sclerosis Genetics Consortium. Analysis of immune-related loci identifies 48 new susceptibility variants for multiple sclerosis. *Nat Gen* 45:1353-60, 2013. PMC3832895

Mapping of the loci within the MHC in multiple sclerosis and other autoimmune diseases.

My laboratory has carried out or participated in detailed mapping studies of the MHC, the genetic region most strongly linked to susceptibility to MS. Using comparative genomics between African-American and Caucasian MS populations, my group was able to identify HLA-DRB1 as the primary MS signal in the MHC, and also fine map other secondary loci in this region, including a protective gene in the class I region.

- Oksenberg JR, Barcellos LF, Cree BA, Baranzini SE, Bugawan TL, Khan O, Lincoln RR, Swerdlin A, Mignot E, Lin L, Goodin D, Erlich HA, Schmidt S, Thomson G, Reich DE, Pericak-Vance MA, Haines JL, **Hauser SL**. Mapping multiple sclerosis susceptibility to the HLA-DR1 locus in African Americans. *Am J Hum Genet*. 74: 160-167, 2004.
- The International Multiple Sclerosis Genetics Consortium: Yeo TW, Jager PL, Gregory SG, Barcellos LF, Walton A, Goris A, Fenoglio C, Ban M, Taylor CJ, Goodman RS, Walsh E, Wolfish CS, Horton R, Traherne J, Beck S, Trowsdale J, Caillier SJ, Ivinson AJ, Green T, Pobywajlo S, Lander ES, Pericak-Vance MA, Haines JL, Daly MJ, Oksenberg JR, **Hauser SL**, Compston A, Hafler DA, Rioux JD, Sawcer S. A second major histocompatibility complex susceptibility locus for multiple sclerosis. *Ann Neurol*. 61:228-36, 2007.
- Rioux JD, Goyette P, Vyse TJ, Hammarstrom L, Fernando MMA, Green T, De Jager PL, Foisy S, Wang J, de Bakker PIW, Leslie S, McVean G, Padyukov L, Alfredsson L, Annese V, Hafler DA, Pan-Hammarstrom Q, Pirskanen R, Sawcer SJ, Compston DAS, Cree BAC, Mirel DB, Daly MJ, Behrens TW, Klareskog L, Gregersen PK, Oksenberg JR, **Hauser SL**. Mapping of multiple susceptibility variants within the MHC region for seven immune-mediated diseases. *Proc Natl Acad Sci USA*. 3;106:18680-5, 2009.

Creation of an animal model that recapitulates the pathology of human multiple sclerosis.

My laboratory developed an animal model that faithfully recapitulates the core pathologic features of MS, and demonstrated that autoantibodies directed against myelin oligodendrocyte

glycoprotein (MOG), a quantitatively minor myelin protein, are a major factor in producing MS-like lesions. I then showed that these characteristic lesions of vesicular demyelination could be adoptively transferred by encephalitogenic T-cells only when accompanied by co-transfer of autoantibodies, revealing a mechanism of antibody-facilitated, T-cell dependent demyelination.

- Massacesi L, Genain C, Lee-Parritz D, Canfield D, Letvin NL, **Hauser SL**. Active and passively induced experimental autoimmune encephalomyelitis in common marmosets: a new model for multiple sclerosis. *Ann Neurol*. 37:519-530, 1995.
- Genain CP, Nguyen M-H, Letvin NL, Pearl R, Davis RL, Adelman M, Lees JB, Lington C, **Hauser SL**. Antibody facilitation of multiple sclerosis-like lesions in a non human primate. *J Clin Invest*. 96:2966-2974, 1995.
- Genain CP, **Hauser SL**. Allergic encephalomyelitis in common marmosets: pathogenesis of a multiple sclerosis-like lesion. *Methods: A companion to Methods in Enzymology*. 10:420-434, 1996.
- Genain CP, Abel K, Belmar N, Villinger F, Rosenberg DP, Lington C, Raine CS, **Hauser SL**. Late complications of immune deviation therapy in a non-human primate. *Science*. 274:2054-2057, 1996.

Identification of humoral immune mechanisms underlying autoimmune demyelination.

Using the animal model described above, I demonstrated that autoantibodies directed against myelin oligodendrocyte glycoprotein (MOG), a quantitatively minor myelin protein, are a major factor in producing MS-like lesions. These data challenged previous assumptions on the pathogenesis of MS, and indicated clearly that autoimmune T cells, previously thought to be the sole trigger of MS, synergize with pathogenic autoantibodies. I then identified myelin reactive autoantibodies in direct contact with disintegrating myelin membranes within lesions in situ, both in the animal model and also in humans with MS.

- Genain C, Cannella B, **Hauser SL**, Raine CS. Identification of autoantibodies associated with myelin damage in multiple sclerosis. *Nat Med*. 5:170-175, 1999.
- Raine CS, Cannella B, **Hauser SL**, Genain CP. Demyelination in primate autoimmune encephalomyelitis and acute lesions: A case for antigen specific antibody mediation. *Ann Neurol*. 46: 144-160, 1999.
- von Büdingen HC, Kuo TC, Sirota M, van Belle CJ, Apeltsin L, Glanville J, Cree BA, Gourraud PA, Schwartzburg A, Huerta G, Telman D, Sundar PD, Casey T, Cox DR, **Hauser SL**. B cell exchange across the blood-brain barrier in multiple sclerosis. *J Clin Invest*. 122:4533-43, 2012.

Development of new therapies and improved management tools for multiple sclerosis.

Based on my work implicating humoral pathogenesis in MS, I designed and led the clinical trials with the CD20+ B cell depleting drugs Rituximab (Genentech) and Ocrelizumab (Roche/Genentech). In phase 2 studies, both agents demonstrated robust efficacy in relapsing-remitting multiple sclerosis. I have also led the global phase III trials for Ocrelizumab that have also recently been concluded, demonstrating spectacular efficacy. My colleagues and I recently published an exciting new approach for rapid parallel sequencing of hundreds of thousands of B cell receptors from spinal fluid and blood of individual MS patients, revealing specific clones (“oligoclonal B-cells”) that are selectively amplified in the nervous system and that could in the future be selectively targeted to create precise therapy against culprit B-cell populations. I’ve also established a prospective cohort of MS patients that is providing useful information about the long-term clinical outcomes of MS in the modern treatment era, and has provided a database resulting in our development of an online application for personalizing MS care, including monitoring the course and predicting outcomes.

- **Hauser SL**, Waubant E, Arnold DL, Vollmer T, Antel J, Fox RJ, Bar-Or A, Panzaro M, Sarkar N, Agarwal S, Langer-Gould A, Smith CH; HERMES Trial Group. B-cell depletion with rituximab in relapsing-remitting multiple sclerosis. *N Eng J Med.* 358:676-88, 2008.
- Kappos L, Li D, Calabresi PA, O'Connor P, Bar-or A, Barkhof F, Yin M, Leppert D, Glanzman R, Tinbergen J, **Hauser SL**. Ocrelizumab in relapsing-remitting multiple sclerosis: results of a Phase II randomized placebo-controlled multicentre trial. *Lancet*, 378:1779-87, 2011.
- Hauser SL. The Charcot Lecture. Beating MS: A story of B cells, with twists and turns. *Mult Scler.* 2014
- Gourraud PA, Henry R, Cree BA, Crane JC, Lizee A, Olson MP, Santaniello AV, Datta E, Zhu AH, Bevan CJ, Gelfand JM, Graves JA, Goodin DE, Green A, von Büdingen HC, Waubant E, Zamvil SS, Crabtree-Hartman E, Nelson S, Baranzini SE, **Hauser SL**. Precision medicine in chronic disease management: The MS BioScreen. *Ann Neurol.* 76(5):633-42., 2014. PMC4214886.

RESEARCH AWARDS - CURRENT

| | | | |
|--|----|---------------------------|--------------------|
| 1. R01NS049477 | PI | | Hauser (PI) |
| NIH | | 08/15/2011 | 5/13/2017 |
| A Haplotype Map for Multiple Sclerosis | | \$ 789,928 direct/yr 1 | \$ 9,036,528 total |

The objective is to identify and characterize the complete repertoire of genes that predispose to multiple sclerosis and modulate its presentation. To this aim, we have established a multidisciplinary research team that aggregates clinical and basic science efforts across six different institutions.

| | | | |
|--|--|---------------------------|---------------------------|
| 2. R01NS092835 | Co-Principal Investigator with H-C von Buedingen | | Hauser/von Buedingen (PI) |
| NIH | | 07/01/2012 | 06/30/2017 |
| Disease relevance of CD20 expression on T cells in multiple sclerosis patients | | \$ 241,157 direct/yr 1 | |

This project seeks to determine in how far CD20-expressing T cells are involved in the autoimmune attack against myelin of the central nervous system in MS, to understand whether targeted depletion of this lymphocyte subset may represent a viable novel therapeutic option for MS with a potentially superior safety profile.

| | | | |
|--|----|---------------------------|--------------------|
| 3. R25NS070680-06 | PI | | Hauser (PI) |
| NIH | | 04/01/2010 | 06/30/2020 |
| Educating Physician-Neuroscientists: The R25 at UCSF | | \$ 238,701 direct/yr 1 | \$ 1,068,160 total |

To provide support for a 6 month period of dedicated research training during residency, followed by a 1 year continuation of research support for fellowship training. 1. Facilitate the transition of outstanding academically-oriented residents in Neurology, Neurosurgery, and Radiology to successful careers in neuroscience research. 2. Aggregate the intellectual resources across many departments towards this goal. 3. Shorten the total training time for physician-neuroscientists.

| | | | |
|--|---|------------------------|-----------------------|
| 4. RG 2899-D11 | Co-PI with Jorge Oksenberg | | Hauser/Oksenberg (PI) |
| National Multiple Sclerosis Society | | 7/01/2012 | 6/30/2017 |
| Establishment of a Core DNA Repository for Multiple Sclerosis | | \$ 292,268 direct/yr 1 | |
| We will maintain and expand both the MS DNA repository of MS patients and family members and the centralized relational database system storing clinical, demographic, repository and laboratory generated data. The information will be used by the MS Genetics Group for association studies as well as by qualified outside investigators. | | | |
| 5. | co-Principal Investigator with Riley Bove | | Hauser (PI) |
| The Conrad H. Hilton Foundation | | 12/01/2013 | 11/30/2019 |
| From the Institute Into MS Clinic: Expanding the MS Bioscreen to deliver real-world precision medicine | | \$ 270,500 direct/yr 1 | |
| We have developed a first-generation data navigation tool for MS called the Bioscreen, designed to bridge the power of high-quality data with the efficiency of cloud-based data-management, and the user-friendliness of a tablet-based application. This grant will further the development of the prognostic algorithms and extend the use of this instrument to non-research patients by capturing in real-time key elements of their disease course. | | | |
| 6. W81XWH-14-1-0493 | co-investigator | | Henry (PI) |
| Department of Defense | | 09/30/2014 | 09/29/2016 |
| Neuronal Determinants of Motor Disability in MS | | \$ 200,000 direct/yr 1 | |
| We propose a longitudinal design to the study in order to acquire data supporting both a model of the relationships between MS disease processes, motor tissue structure and function, and clinical motor dysfunction as well as a model of the dynamical evolution of these constituents. Even if the longitudinal model does not yet identify predictors of motor function decline with statistical significance over 1 year, such data will establish a basis for hypotheses regarding predictors of motor decline and the power needed to verify those hypotheses; the second time point data will also lend repeated measures support to the cross-sectional model. | | | |

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|--|------------------------|------------------------|--------------------|
| 7. 2R01NS026799-25A1 | Principal Investigator | | Hauser (PI) |
| NIH/NINDS | | 09/30/2015 | 07/31/2019 |
| Gene Linkage Study of Multiple Sclerosis Sibling Pairs | | \$ 268,125 direct/yr 1 | \$ 1,072,500 total |

Gene Linkage Study of Multiple Sclerosis Sibling Pairs (Hauser PI) We will harness the power of neuroimaging information to bridge genetics with clinical expression of the disease (i.e. the phenotype), representing therefore an important step to promote evidence-based personalized medicine in a complex neurological disease.

RESEARCH AWARDS - PAST

| | | | |
|--|----|------------------------|--------------------|
| 1. R01 NS026799-22 | PI | | Hauser (PI) |
| NIH | | 12/01/1988 | 06/30/2014 |
| Gene Linkage Study of Multiple Sclerosis Sibling Pairs | | \$ 331,209 direct/yr 1 | \$ 1,175,000 total |

The objective of this grant is to collect multiplex MS families and a dataset of 1000 US simplex families to perform linkage and association studies of disease candidate loci.

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| 2. POO46726 | co-PI (with Pierre-Antoine Gourraud) | | Hauser (PI) |
| Patient-Centered Outcomes Research Institute (PCORI) | | 07/01/2012 | 07/01/2014 |
| A BioScreen for Multiple Sclerosis | | \$ 250,000 direct/yr 1 | \$ 500,000 total |

Our goal is to develop an effective and secure digital portal named BioScreen to access and display real-time clinical and biomarker information for use by patients and health providers, linked to the development of novel instruments and methods that promote evidence-based education, the generation of innovative hypotheses and an integrative approach for patient centered outcomes research. This project will initially focus on multiple sclerosis, but will include the elements for transferability to other chronic diseases.

| | | | |
|---------------------------------------|----|------------|--------------------|
| 3. U19AI067152-01 | PI | | Hauser (PI) |
| NIH | | 09/01/2005 | 02/28/2011 |
| Molecular Genetics of HLA and Disease | | | \$ 8,581,594 total |

The goal of this application is to identify and characterize the complete repertoire of genes encoded in the MHC region that predispose and/or modulate the expression of autoimmune disease.

| | | | |
|---|----|------------|------------------|
| 4. no number | PI | | Hauser (PI) |
| Nancy Davis Center Without Walls MS Research Programs | | 07/01/2009 | 06/30/2011 |
| | | | \$ 125,000 total |

The major goal of this multi-center project is to study the immune response in multiple sclerosis and genetic correlates of this response.

| | | | |
|--|--------------------------------------|---------------------------|------------------|
| 5. POO46726 | co-PI (with Pierre-Antoine Gourraud) | | Hauser (PI) |
| Patient-Centered Outcomes Research Institute (PCORI) | | 07/01/2012 | 03/21/2015 |
| A BioScreen for Multiple Sclerosis | | \$ 250,000 direct/yr 1 | \$ 500,000 total |

Our goal is to develop an effective and secure digital portal named BioScreen to access and display real-time clinical and biomarker information for use by patients and health providers, linked to the development of novel instruments and methods that promote evidence-based education, the generation of innovative hypotheses and an integrative approach for patient centered outcomes research. This project will initially focus on multiple sclerosis, but will include the elements for transferability to other chronic diseases.

PEER REVIEWED PUBLICATIONS

1. Hauser SL, DeLong GR, Rosman NP. Pneumographic findings in the infantile autism syndrome: a correlation with temporal lobe disease. *Brain*. 98:657-688, 1975.
2. Hauser SL, Weiner HL, Bresnan MH, Ault KA. Lymphocyte capping in muscular dystrophy. *Neurology*. 29:1419-1421, 1979.
3. Williams RS, Hauser SL, Purpura D, DeLong GR, Swisher CN. Autism and mental retardation: neuropathologic studies performed in retarded persons with autistic behavior. *Arch Neurol*. 37:749-753, 1980.
4. Reinherz EL, Weiner HL, Hauser SL, Cohen JA, Distaso JA, Schlossman SF. Loss of suppressor T cells in active multiple sclerosis. Analysis with monoclonal antibodies. *New Eng J Med*. 303:125-129, 1980.
5. Hauser SL, Weiner HL, Levin M, Ault KA. Natural killer cell activity in multiple sclerosis. *J Immunol*. 127:1114-1117, 1981.
6. Hauser SL, Weiner HL, Ault KA. Clonally-restricted B cells in peripheral blood of multiple sclerosis patients: kappa/lambda staining patterns. *Ann Neurol*. 11:408-412, 1982.
7. Hauser SL, Bresnan MJ, Reinherz EL, Weiner HL. Childhood multiple sclerosis: clinical features and demonstration of T-cell subset changes with disease activity. *Ann Neurol*. 11:463-468, 1982.
8. Hauser SL, Fosburg M, Kevy S, Weiner HL. Plasmapheresis, lymphocytapheresis and immunosuppressive drug therapy in multiple sclerosis. *Prog Clin Biol Res*. 106:239-54, 1982.
9. Hauser SL, Dawson DM, Lehrich JR, Beal MF, Kevy SV, Propper RD, Mills JA, Weiner HL. Intensive immunosuppression in progressive multiple sclerosis: randomized three-arm study of high dose intravenous cyclophosphamide, plasma exchange and ACTH. *N Eng J Med*. 308:173-180, 1983.

10. Hauser SL, Reinherz EL, Schlossman SF, Hoban CJ, Weiner HL. Immunoregulatory T-cells and lymphocytotoxic antibodies in active multiple sclerosis: weekly analysis over a six-month period. *Ann Neurol.* 13:418-425, 1983.
11. Hauser SL, Reinherz EL, Hoban CJ, Schlossman SF, Weiner HL. CSF cells in multiple sclerosis: monoclonal antibody analysis and relationship to peripheral blood T-cell subsets. *Neurology.* 33:575-579, 1983.
12. Crary B, Hauser SL, Borysenko M, Kutz I, Hoban CJ, Ault KA, Weiner HL, Benson H. Epinephrine induced changes in the distribution of lymphocyte subsets in peripheral blood of humans. *J Immunol.* 131:1178-1181, 1983.
13. Hauser SL, Dawson DM, Lehrich JR, Bea MF, Kevy SV, Weiner HL. Immunosuppression and plasmapheresis in chronic progressive multiple sclerosis. Design of a clinical trial. *Arch Neurol.* 40:687-690, 1983.
14. Hauser SL, Bhan A, Gilles F, Hoban CJ, Reinherz EL, Schlossman SF, Weiner HL. Immunohistochemical staining of human brain with monoclonal antibodies that identify lymphocytes, monocytes, and the Ia antigen. *J Neuroimmunol.* 5:197-205, 1983.
15. Tardieu M, Powers ML, Hafler DA, Hauser SL, Weiner HL. Autoimmunity following viral infection. I. Demonstration of monoclonal antibodies against normal tissue following infection of mice with reovirus and demonstration of shared antigenicity between virus and lymphocytes. *Euro J Immunol.* 14:561-565, 1984.
16. Hauser SL, Fosburg M, Kevy SV, Weiner HL. Lymphocytapheresis in chronic progressive multiple sclerosis: immunologic and clinical effects. *Neurology.* 34:922-926, 1984.
17. Weiner, H.L, Hafler, D.A, Fallis, R.J, Johnson, D, Ault, K.A. and Hauser SL. Altered blood T-cell subsets in patients with multiple sclerosis. *J Neuroimmunol.* 6:115-121, 1984.
18. Hauser SL, Weiner HL, Che M, Shapiro ME, Gilles F, Letvin NL. Prevention of experimental allergic encephalomyelitis in the SJL/J mouse by whole body ultraviolet irradiation. *J Immunol.* 132:1276-1281, 1984.
19. Hauser SL, Bhan AK, Che M, Gilles F, Weiner HL. Redistribution of Lyt-bearing T cells in acute murine experimental allergic encephalomyelitis: selective migration of Lyt-1 cells to the central nervous system is associated with a transient depletion of Lyt-1 cells in peripheral blood. *J Immunol.* 133:3037-3042, 1984.
20. Hauser SL, Weiner HL, Bhan AK, Shapiro ME, Che M, Aldrich WR, Letvin NL. Lyt-1 cells mediate acute murine experimental allergic encephalomyelitis. *J Immunol.* 133: 2288-2290, 1984.
21. Weiner HL, Dawson DM, Hafler DA, Fallis RJ, Lehrich JR, Hauser SL. The use of cyclophosphamide in the treatment of multiple sclerosis. *Ann NY Acad Sci.* 436:373-381, 1985.
22. Hauser SL, Reinherz EL, Ault KA, Johnson D, Hoban CJ, Weiner HL. Increased IgG secretion by unstimulated mononuclear cells in active multiple sclerosis and functional assessment of the T8 subset. *Clin Immunol Immunopathol.* 37:312-323, 1985.
23. Brown RH, Hauser SL, Harrington H, Weiner HL. Failure of immunosuppression with a 10 to 14-day course of high dose intravenous cyclophosphamide to alter progression of amyotrophic lateral sclerosis. *Arch Neurol.* 43:383-384, 1986.

24. Hauser SL, Bhan AK, Gilles F, Burks J, Kerr E, Weiner HL. Immunohistochemical analysis of the multiple sclerosis infiltrate. *Ann Neurol.* 19:578-587, 1986.
25. Hauser SL, Aubert C, Burks JS, Kerr C, Lyon-Caen O, DeThe G, Brahic M. Analysis of human T-lymphotrophic virus sequences in multiple sclerosis tissue. *Nature.* 322:176-177, 1986.
26. Hauser SL, Henderson CE, Lyon-Caen O, Taguchi T, Changeux JP, Cazenave PA. Analysis of antibodies to muscle proteins in amyotrophic lateral sclerosis. *Neurology.* 36:1614-1618, 1986.
27. Lyon-Caen O, Jouvent R, Hauser SL, Chaunu M-P, Benoit N, Widlocher D, Lhermitte F. Cognitive function in recent-onset demyelinating diseases. *Arch Neurol.* 43:1138-1141, 1986.
28. Henderson CE, Hauser SL, Huchet M, Dessai F, Hentati F, Taguchi T, Changeux JP, Fardeau M. Spinal muscular atrophies: extracts of muscle biopsies inhibit neurite outgrowth from spinal neurons in vitro. *Neurology.* 37:1361-1364, 1987.
29. Hauser SL, Che M, Fallis RJ, Weiner HL. Immunoregulatory abnormalities induced by experimental reovirus infection; functional alterations in T-cell subpopulations. *Clin. Immunol. Immunopathol.* 45:481-490, 1987.
30. Hayashi T, Morimoto C, Burks JS, Kerr C, Ringler DA, Hauser SL. Dual-label immunocytochemistry of the active multiple sclerosis lesion: Major histocompatibility complex and activation antigens. *Ann Neurol.* 24:523-531, 1988.
31. Ciulla TA, Sklar R, Hauser SL. A simple method for DNA purification from human blood. *Analyt Biochem.* 174:485-488, 1988.
32. Hayashi T, Burks JS, Hauser SL. Expression and cellular localization of major histocompatibility complex antigens in active multiple sclerosis lesions. *Ann NY Acad Sci.* 540:301-305, 1988.
33. Ciulla TA, Robinson MA, Doolittle T, Lehrich JR, Kindt TJ, Hauser SL. Molecular genotyping of the T-cell receptor beta chain in families of multiple sclerosis patients. *Ann NY Acad Sci.* 540:271-276, 1988.
34. Hauser SL, Robinson MA, Doolittle TH, Ciulla TA, Kindt TJ, and Seboun E. The inheritance of T-cell receptor genes in multiple sclerosis families. *Prog. Neuroendocrinimmunol.* 1:33-35, 1988.
35. Hauser SL, Fleischnick E, Weiner HL, Marcus D, Adweh Z, Alper CA. Extended major histocompatibility complex haplotypes in multiple sclerosis. *Neurology.* 39:275-277, 1989.
36. Seboun E, Robinson MA, Doolittle TH, Ciulla TA, Kindt TJ, Hauser SL. A susceptibility locus for multiple sclerosis is linked to the T-cell receptor B chain complex. *Cell.* 57:1095-1100, 1989.
37. Seboun E, Robinson MA, Kindt TJ, Hauser SL. Insertion/deletion related polymorphisms in the human T-cell receptor β gene complex. *J Exp Med.* 170:1263-1270, 1989.
38. Kostyk SK, Kowall NW, Hauser SL. Substance P immunoreactive astrocytes are present in multiple sclerosis plaques. *Brain Res.* 504:284-288, 1989.

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PATENTS ISSUED OR PENDING

1. Diagnosis and Treatment of Autoimmune Diseases
Patent application filed in the United States on March 18, 1993
US Utility Patent Application No: 08/033,463
2. NGF For the Prevention Of Demyelination in the Nervous System
Patent application filed in European Patent Office on April 8, 1998
PCT/EP98/02029
Patent application filed in United States on May 10, 2001
US Patent Application No: 09/854/142
UC Regents Ref. No.: SF2000-012-3
Pending allowance in the United States, February 13, 2007
3. Treatment of Demyelinating Disease with Recombinant Pox Virus Encoding Myelin Protein
Patent application filed in the United States on September 23, 1998
US Patent Application No: 09/159/179
UC Regents Ref. No.: 96-292-2
4. Inhibiting MOG-Antibody Binding
Patent application filed in the United States on June 3, 2003
US Patent Application No: 6,573,236
UC Regents Ref. No.: SF1999-020-3
5. Recombinant Antibody Fragments as Autoantibody Antagonists
Patent application filed in Australia on October 17, 2001
Australian Patent Application No: 2002211771
6. A Method for Diagnosis and Prognosis of Multiple Sclerosis
Patent application filed in United States on October 10, 2003
US Patent Application No.: 10/683,451
UC Regents Ref. No.: SF 2003-01902

ADDITIONAL RELEVANT INFORMATION

Other University Service

MASSACHUSETTS GENERAL HOSPITAL

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| 1987-1991 | Subcommittee on Review of Research Proposals |
| 1989-1992 | Executive Committee, Department of Neurology |

