

Curriculum Vitae
M. Elizabeth Sandel, MD
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Oakland, California
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EDUCATION

Fellowship, Brain Injury Rehabilitation Magee Rehabilitation Hospital, Philadelphia, PA Additional rotations: Braintree Hospital, Braintree, MA San Francisco General Hospital, San Francisco, CA	1984-1985
Residency, Physical Medicine and Rehabilitation Thomas Jefferson University Hospital, Philadelphia, PA	1981-1984
M.D. Medical College of Pennsylvania, Philadelphia, PA (now Drexel College of Medicine) - Humanities Scholar	1977-1981
Bryn Mawr College, Bryn Mawr, PA Post-Baccalaureate Pre-Medical Program	1975-1977
B.A. Bucknell University, Lewisburg, PA	1967-1971

CURRENT POSITIONS

Clinical Professor, Adjunct, University of California/Davis	1998-present
Medical Director, Catastrophic Care Management Paradigm, Walnut Creek, CA: https://www.paradigmcorp.com/	2013-present

CERTIFICATION

American Board of Physical Medicine and Rehabilitation Brain Injury Medicine – 10-year certificate	2014
PM&R - Lifetime certificate	1985
National Board of Medical Examiners	1982

LICENSURE

State of California (Active)	1997
Commonwealth of Pennsylvania (Inactive)	1981
State of New Jersey (Inactive)	1986

OTHER PROFESSIONAL EXPERIENCE

Chief, Physical Medicine and Rehabilitation, Napa Solano Service Area Kaiser Permanente Northern California	1997-2012
Director, Center of Excellence for Individuals with Disabilities Kaiser Permanente Institute for Culturally Competent Care, Oakland, CA	2001-2012
Director, Research and Training Kaiser Foundation Rehabilitation Center, Vallejo, CA	2006-2012
Medical Director, Kaiser Foundation Rehabilitation Center Kaiser Foundation Hospital, Vallejo, CA	1997-2006
Administrative Consultant Beechwood Centers of New Jersey, Merchantville, NJ	1995-1997
Medical Director, Piersol Rehabilitation Unit Hospital of the University of Pennsylvania, Philadelphia, PA	1993-1997
Medical Director, Brain Injury Programs Magee Rehabilitation Hospital and Thomas Jefferson University Hospital, Philadelphia, PA	1991-1993
Consulting Psychiatrist, Center for Women with Disabilities Thomas Jefferson University, Philadelphia, PA	1992-1993
Mediplex Rehab-Camden, Camden, NJ	
Clinical Director	1987-1988
Medical Director	
Inpatient and Outpatient Services	1988-1991
Mediplex Transitions	
Director of Medical Research and Training	1988-1991
Attending Psychiatrist Department of Physical Medicine and Rehabilitation Cooper Hospital/University Medical Center, Camden, NJ	1987-1991
Associate Director, Brain Injury Programs Magee Rehabilitation Hospital, Philadelphia, PA	1985-1987

HOSPITAL AND COMMITTEE MEMBERSHIPS

Kaiser Permanente Northern California, Oakland, CA	
Rehabilitation Services Oversight Group	2009-2012
Course Director, Annual Rehabilitation Symposium	1997-2012

HOSPITAL AND COMMITTEE MEMBERSHIPS, Cont.

Kaiser Permanente Northern California, Oakland, CA, cont.	
Regional Stroke Guidelines Committee	1997-2010
Regional Rehabilitation Advisory Board	1997-2009
Kaiser Permanente Health Plan, Inc., Oakland, CA	
National Diversity Council Member	2008-2012
Member, LGBT Task Force	2011-2012
Physician Champion, Provider Handbook for Individuals with Disabilities, National Diversity Department	2004-2012
Kaiser Foundation Hospital, Vallejo, CA	
Executive Committee	1997-2012
President, Professional Staff	2003-2004
President Elect /Secretary, Professional Staff	2002-2003
Primary 1 Peer Group	1999-2001
Resource Management Committee	1997-2007
Quality Assurance Committee	1997-2012
Kaiser Foundation Rehabilitation Center, Vallejo, CA	
Co-Chair, Executive Management Committee	1997-2012
Co-Chair, Rehabilitation Collaborative Practice Council	1997-2012
University of Pennsylvania School of Medicine	
Comprehensive Injury Center Committee	1997
Committee, Review the Department of Otorhinolaryngology	1996-1997
Chair, Education Subcommittee	
Program Evaluation and Planning Steering Committee	1996-1997
Departmental Representative, Educational Retreat	1996
Administrative Council Committee	1996-1997
Committee on Appointments and Promotions	1996-1997
Committee on Students with Learning Disabilities	1995-1997
Executive Committee, Department of Rehabilitation Medicine	1994-1997
Admissions Committee	1994
Medical Quality Assessment and Improvement Committee	1993-1997
Chair, Rehabilitation Medicine Quality Assurance Committee	1993-1994
Thomas Jefferson University Hospital/Magee Rehabilitation Hospital	1991-1993
Chair, Research Task Force on Brain Injury	
Infection Control Committee	
Magee Rehabilitation Hospital	1991-1993
Medicine and Society Course Committee	
Credentials Committee	

HOSPITAL AND COMMITTEE MEMBERSHIPS, Cont.

Thomas Jefferson University School of Allied Health Advisory Board Member, Experimental and Innovative Training Grant on Employability for Individuals with Traumatic Brain Injury funded by Rehabilitation Services Administration	1992-1994
Mediplex Rehab-Camden Chair, Utilization Review Committee Quality Assurance Committee Executive Committee	1987-1991

FACULTY APPOINTMENTS

University of California at Davis Health System, Sacramento, CA Clinical Professor, Physical Medicine and Rehabilitation (Volunteer Faculty)	1998-present
Touro University College of Osteopathic Medicine, Vallejo, CA Adjunct Faculty	2000-2003
University of Pennsylvania School of Medicine, Philadelphia, PA Vice-Chair for Graduate Medical Education Associate Professor of Rehabilitation Medicine Director, Division of Neurorehabilitation Mentor, Clinical Neuroscience Track	1995-1997 1993-1997 1993-1997 1993-1997
UMDNJ-Robert Wood Johnson Medical School, Camden, NJ Clinical Assistant Professor, Department of Medicine/Neurology	1988-1991
Jefferson Medical College (now known as Sidney Kimmel Medical College at Thomas Jefferson University), Philadelphia, PA Clinical Assistant Professor Instructor, Rehabilitation Medicine	1989-1993 1985-1989

AWARDS AND HONORS

Distinguished Alumni Award Lower Dauphin High School Hummelstown, PA	2016
James Rae Day, Honorary Lectureship Department of Physical Medicine and Rehabilitation University of Michigan, Ann Arbor, MI	2015

AWARDS AND HONORS, Cont.

Krusen Lifetime Achievement Award American Academy of Physical Medicine and Rehabilitation Rosemont, IL	2012
Visiting Professorship Department of Physical Medicine and Rehabilitation University of Pittsburgh, Pittsburgh, PA	2012
Phala Helm Distinguished Lectureship Department of Physical Medicine and Rehabilitation University of Texas, Southwestern, Dallas, TX	2012
Visiting Professorship Department of Physical Medicine and Rehabilitation Loma Linda University, Loma Linda, CA	2011
Profession of Medicine Award The Permanente Medical Group 50th Anniversary Celebration, Oakland, CA	1999
The John Morgan Society University of Pennsylvania School of Medicine, Philadelphia, PA	1995
Fellow, The College of Physicians, Philadelphia, PA	1995
Award of Excellence, Keystone Head Injury Association	1993
Practitioner of the Year Award South New Jersey Rehabilitation Association	1988

CURRENT PROFESSIONAL MEMBERSHIPS

American Academy of Physical Medicine and Rehabilitation
Association of Academic Physiatrists
International Society for Physical and Rehabilitation Medicine
International Brain Injury Association
North American Brain Injury Society

ACTIVITIES IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

American Board of Physical Medicine and Rehabilitation Brain Injury Medicine Examination Committee	2011-2015
Task Force on Brain Injury	1997-2011
Written Examinations Associate	1997-1999

ACTIVITIES IN PROFESSIONAL AND SCIENTIFIC SOCIETIES, Cont.

Commission on Accreditation of Rehabilitation Facilities	
Presenter, Culturally Competent Care Webinar Series	2014
Surveyor	1988-91
National Advisory Committees	
Post-Acute Head Injury Programs	1987
Outpatient Programs	1989
American Medical Association	2011-2016
Physician Consortium for Performance Improvement	2013-2015
Member, Outcomes Ad Hoc Committee	
Brain Injury Association of America/Icahn Expert Panel	2014-present
Guidelines for the Rehabilitation and Disease Management of Adults with Moderate to Severe Traumatic Brain Injury	
American Academy of Physical Medicine and Rehabilitation	
Board of Governors	2003-2011
President	2009-2010
President Elect	2008-2009
Vice President	2007-2008
Treasurer	2005-2007
Member at Large	2003-2005
Historian	2013-present
Councils: Central Nervous System; Medical Rehabilitation	2009-present
Liaison, National Quality Forum	2012-2015
Evidence Based Practice Committee	2012-2015
Performance Metrics Committee, Chair	2012-2015
Awards Committee	2014
Analytics Committee, Co-Chair	2011-2013
Nominating Committee	2009-2012
Medical Inpatient Rehabilitation Criteria Task Force	2006
Strategic Management Committee	1995-1997
Subcommittee for Education and Research	
Chair, Special Interest Groups Task Force	
Committee to Revise the Syllabus	1995-97
Chair, Traumatic Brain Injury	
Fellowship Guidelines Task Force	1994-96
Chair, Brain Injury	
Practice Parameter Task Force	1992-1994
Chair, The Agitated Brain-Injured Patient	
Special Interest Group on Brain Injury	1993-2009
Chair	1992-1994
Secretary	1990-1992

ACTIVITIES IN PROFESSIONAL AND SCIENTIFIC SOCIETIES, Cont.

Foundation for Physical Medicine and Rehabilitation, Co-Chair, Brain Injury Research Task Force Research Summit Participant, Crystal City, VA	2019-present 2005 & 2007
National Institute of Neurological Disorders and Stroke Traumatic Brain Injury Common Data Elements Project Member, Rehabilitation Subgroup	2011-2012
International Society for Neuro-emergencies Chair, Rehabilitation and Psychology Committee	1996-2001
Clinical Research Roundtable, Member Classification of Inpatient Rehabilitation Facilities Institute of Medicine, National Academy of Sciences, Washington, DC	2004
Technical Expert Panel, Member Inpatient Rehabilitation Facility Quality Reporting Program Convened by RTI International, Baltimore, MD	2011-2014
Technical Expert Panel, Member Developing Quality Measures for People with Disabilities Agency for Healthcare Research and Quality, Bethesda, MD	2010
Technical Expert Panel, Member Medicare Patient Instrument Development, Baltimore, MD	2007
Multiple Sclerosis Society, Northern California Chapter Member, Professional Advisory Group	2002-2012
National Stroke Association, Denver, CO Member, Task Force on Disparities	2003
California Rehabilitation Association Member, Board of Directors	2002-2006
Defense and Veterans Head Injury Program, Washington, DC Member, Scientific Advisory Board	2001-2002
Medicaid Quality Measures for Individuals with Disabilities NIDRR Research Grant - George Mason University-Delmarva Foundation Member, Advisory Council	2005-2006
American Congress of Rehabilitation Medicine	1983-2021

EDITORIAL POSITIONS

PM&R

History Series	2013-2021
Senior Editor	2008-2014

Guest Editor: *Brain Injury Source* (Brain Injury Association Journal)
“Socialization and Intimacy Issues after Traumatic Brain Injury” 2011

Journal of Head Trauma Rehabilitation, Associate Editor 1994-2001

Our Bodies/Our Selves, Boston Women’s Health Collective
Consultant, Chapter on: “Sexuality and Disability” 1998

Previous reviewer for the following journals:

Disability and Health

Archives of Physical Medicine and Rehabilitation

American Journal of Physical Medicine and Rehabilitation

Journal of Head Trauma Rehabilitation

Health Affairs

FUNDED RESEARCH

Co-Investigator: Kaiser Permanente Community Benefits Program, R Delmonico, Principal Investigator, and J Terdiman, M Armstrong, R Whitmer, J Appelman. “Depression and Anxiety Disorders Prior to and Following Mild Traumatic Brain Injury,” \$70,000, 2011-2012.

Co-Investigator: Kaiser Permanente Community Benefits Program, H Wang, PhD, Principal Investigator, S Sidney, M Armstrong, A Klatsky. “Relationship of Post-Acute Care and Stroke Mortality in the Kaiser Permanente Northern California Health System,” \$60,000, 2010-2011.

Co-Principal Investigator: NIH Clinical Center, with L Chan, Co-Principal Investigator, E Rasch, D Brandt, et al. “Examining Functioning and Coordination of Care Following Stroke: A Validation Study,” HHSN269200700002C, \$82,854, 2009-2012.

Co-Principal Investigator: NIH Clinical Center, with L Chan, Co-Principal Investigator, E Rasch, D Brandt, et al. Managing Health and Functioning, NIHCL2009038, \$199,748.00, 2009-2012.

Principal Investigator: National Institute of Neurological Diseases and Stroke, with A Jette, Co-Principal Investigator, L Chan, E Rasch, D Brandt, et al; “The Kaiser Permanente Functional Outcomes System,” 1RC1NS068397, \$1,000,000, 2009-2012.

Principal Investigator: Kaiser Permanente Community Benefits Program, with R Whitmer, R Delmonico, M Armstrong, et al; “Dementia after Traumatic Brain Injury: A Longitudinal Study of Risk Factors and Relative Risk,” \$60,000, 2009-2010.

FUNDED RESEARCH, Cont.

Co-Investigator: Human Health Service Grant, General Clinical Research Centers, National Center for Research Resources, NIH, with L Katznelson, MD, Principal Investigator, et al. "Consequences of Hypopituitarism Following Traumatic Brain Injury," \$4000, 2007-2009.

Co-Principal Investigator: NIH Clinical Center, with L Chan, Co-Principal Investigator, E Rasch, A Jette, et al. "An Outcomes Monitoring System for Post-Acute Care," \$249,389, 2007-2009.

Co-Investigator: Kaiser Permanente Community Benefits Program, with Y Tai, MD, PhD, Principal Investigator, and H Wang. "Training Conscious Vision in the Blind Field of Homonymous Hemianopia," \$60,000, 2007-2009.

Co-Investigator: Centers for Disease Control and Prevention; University of Washington (subcontract); with L Chan, J Terdiman, S Sidney, M Ciol, B Dudgeon, J Hoffman, and K Yorkston. "Disparities in Outpatient Post-Stroke Rehabilitation: A National Assessment," \$151,776, 2005-2008.

Co-Principal Investigator: Innovations Program, Kaiser Permanente, with A Hobbs, Principal Investigator, and J Terdiman. "Establishing a Traumatic Brain Injury Registry and Tracking System," \$150,000, 1999-2001.

Co-Principal Investigator: Positron Emission Tomography Center, Head Injury Clinical Research Center, University of Pennsylvania, with B Diamond, M Reivich, R Plotkin, R Zorowitz. "Memory Disorders Following Ruptured Aneurysms in the Anterior Portion of the Circle of Willis," \$12,800, 1997-98.

Co-Investigator/Clinical Project Coordination: Head Injury Clinical Research Center, University of Pennsylvania, with TK McIntosh, RI Grossman, G Sinson, ES Flamm. "Traumatic White Matter Abnormalities in Human Head Injury," \$6600, 1996-97.

Co-Investigator: Searle Drug Company, with JM Williams, S Nair, S Stein. "A Double-Blind, Placebo Controlled, Parallel Group Pilot Study of Cycloserine in the Treatment of Post-Traumatic Memory Impairment," \$90,000, 1992-93.

Co-Investigator: Cooper University Hospital, University of Medicine and Dentistry of New Jersey, with TP Stein, ED Norcross, SR Ross, M Flocco. "Protein Metabolism after Severe Brain Injury," \$40,000, 1989-90.

TEACHING AND MENTORSHIP

Fellowship Mentor/Teacher

Kaiser Foundation Rehabilitation Center	1999-2011
University of Pennsylvania	1995-1996
Magee Rehabilitation Hospital	1991-1992
Mediplex Rehab-Camden, Camden	1989-1991

TEACHING AND MENTORSHIP, Cont.

Resident Mentor/Teacher	
University of California/Davis	1998-present
Brain Injury Clinical Rotation, Kaiser Vallejo	2006-2008
University of Pennsylvania	1993-1997
Graduate Hospital/University of Pennsylvania	1989-1991
Jefferson Medical College	1985-1988
	1991-1993
Medical Student Mentor	
Touro University School of Osteopathic Medicine	1998-2001
University of Pennsylvania	1994-1997
Jefferson Medical College	1991-1992
Other Teaching Activities	
Concussion Alliance Undergraduate Internship Program	2020-present
Dissertation Advisor	1996-1997
Neuropsychology Graduate Program	
Widener University, Chester, PA	
Faculty Research Mentor	1996-1997
Department of Rehabilitation Medicine	
University of Pennsylvania	
Lecturer, Recovery after Neural Injury (INSC 618)	1993
University of Pennsylvania	
Summer Institute in Rehabilitation Engineering (BE 750)	1994
University of Pennsylvania	
Jefferson Medical College Allied Health Professionals	1991-1993

PRESENTATIONS

A Patient-Centered Approach to Concussion Care for Emergency Medicine and Primary Care Physicians, Med Learning Group, with Conor Gormally, Concussion Alliance, June, 2022.

Bringing Concussion Education and Advocacy to the Next Generation of Healthcare and Public Health Professionals, International Brain Injury Association's Virtual World Conference on Brain Injury: A Global Conference and Meeting of Minds for Adults and Pediatric Brain Injury, with Conor Gormally and Malayka Gormally, July 2021.

Women and Traumatic Brain Injury: Current Research and Implications for Care, Polytrauma VA/Virginia Commonwealth University, March 2021.

PRESENTATIONS, Cont.

Women and Traumatic Brain Injury: Current Research and Implications for Care, UC Davis PM&R Department Webinar, March 2021.

Concussions/Mild Traumatic Brain Injury: Interventions to Achieve the Best Outcomes. Paradigm National Webinar with Deborah Benson, PhD, December 2020

Shaken Brain: Why Write a Book on Concussion? UC Davis PM&R Department Webinar, March 2020

Shaken Brain: Why Write a Book on Concussion? The Permanente Medical Group Retired Physician Association, March 2020

Panel Participant: Mild Traumatic Brain Injury; Alternative Medicine; North American Brain Injury Society Meeting, New Orleans, LA, February 2020

Mild Traumatic Brain Injury, National Interstate Insurance Co., Richfield, Ohio, December 2019

Neuropharmacology of Traumatic Brain Injury, UC Davis Medical Center, Sacramento, CA, March 2019

Post-Concussive Syndrome: From Diagnosis to Recovery, Insurance Rehabilitation Synergy Group, San Francisco, California, May 2018

Course Director - Sports-Related Concussion: Framing the Debates, AAPM&R Annual Assembly, Orlando, FL, October 2018.

Traumatic Brain Injury: Pathophysiology and Prognosis. UC Davis Medical Center, Sacramento, CA, March 2018

The Subtle Brain Injuries: Definitions and Diagnosis. Brain Injury Association of California Medico-Legal Conference, San Diego, CA, February 2018

Post-Concussion Syndrome: Examining a Controversial Diagnosis, Paradigm Management Services Webinar Series, September 2017

Concussion and Controversy: Framing the Debates, NY Institute of Technology Conference: Beyond the Sideline: Unique Athletic Populations, Old Westbury, NY, September 2017

Diagnosis and Prognosis of Concussion and Post-Concussion Syndrome: An Update, Paradigm Management Services Webinar Series, Eastern Alliance Ins. Co., May 2017

Culturally Competent Care, Diversity and Clinical Teams, AAPM&R Annual Assembly, New Orleans, LA, October 2016

PRESENTATIONS, Cont.

What's the Institutional Culture? Women's Leadership Panel, AAPM&R Annual Assembly, New Orleans, LA, October 2016

Controversies in Diagnosis and Treatment of Concussion; Post-Concussive Disorder, CTE, and Other Late Effects of Concussion, UC Davis Medical Center, Sacramento, CA, April 2017.

Diagnosis after Concussion: Can We Reach the Goal, Association of Academic Physiatrists Annual Meeting, Sacramento, CA, February 2016

Traumatic Brain Injury, Munich Reinsurance America, San Francisco CA, November 2015

Commotio Cerebri: More Questions Than Answers, University of Michigan, James Rae Day Lectureship, Ann Arbor, Michigan, May 2015

Concussion; Cognitive Rehabilitation, UC Davis Medical Center, Sacramento, CA, May 2015

Selecting Outcome Metrics for Your Outpatient Practice: An ICF-Based Approach, AAPM&R Annual Assembly, San Diego, CA, November 2014

Culturally Competent Care Series (8 Webinars), CARF International, July-October 2014

Long-Term Behavioral Outcomes in Traumatic Brain Injury, UC Davis Medical Center, Sacramento, CA, May 2014

ACO Prototypes in Academic Medicine: Past, Present, and Maybe Future, Association of Academic Physiatrists Annual Assembly, Nashville, TN, March 2014

Building Outcome Measurement into Your Busy Outpatient Practice: A Pragmatic Approach for Physiatrists, AAPM&R Annual Assembly, National Harbor, MD, November 2013

Neuroendocrine Disorders in Traumatic Brain Injury, UC Davis Medical Center, Sacramento, CA, November 2013

Neuropharmacology in Traumatic Brain Injury, UC Davis Medical Center, Sacramento, CA, August 2013

Why Are We So Special? Measuring Quality and Outcomes in PM&R Practice, Stanford University PM&R Grand Rounds, Palo Alto VA, Palo Alto, CA, August 2013

Panel Moderator, Physician Conference, Uniform Data System for Medical Rehabilitation, Buffalo, NY, August 2013

Traumatic Brain Injury: Pathophysiology, UC Davis Medical Center, Sacramento, CA, July 2013

PRESENTATIONS, Cont.

Mild Traumatic Brain Injury: Evaluation and Treatment for Optimal Outcomes, UC Davis Medical Center, Sacramento, CA, May 2013

Traumatic Brain Injury: Mechanisms of Injury and Recovery, UC Davis Medical Center, Sacramento, CA, March 2013

Culturally Competent Brain Injury Rehabilitation Across the Continuum”, with Stephanie Kolakowski-Hayner. Annual Santa Clara Valley Brain Injury Conference: Conversations on Coma to Community, San Jose, CA, March 2013

Trauma Rehabilitation, Annual Emergency Medical Response Summit, Solano Public Health Department, Hampton Inn Conference Center, Vacaville, CA, October 2012

Stroke Rehabilitation: Studying Outcomes within a Large Integrated Health System, Annual PM&R Scientific Day, University of Texas/Southwestern, Dallas, TX, June 2012

Utilizing the AM-PAC across Post-Acute Care Settings to Measure Functional Outcomes after Stroke, MediServe Annual Conference: Leading Change, Scottsdale, AZ, June 2012

Studying Stroke Outcomes within a Large Integrated Health System, Rehabilitation Institute Research Day, University of Pittsburgh, Pittsburgh, PA, May 2012

Why We Need Common Data Elements for Research and Quality Initiatives across the Care Continuum, Santa Clara Valley Brain Injury Conference: Building on the Legacy of Coma to Community, San Jose, CA, February 2012

By the Numbers: What Research Tells Us about Outcomes in Rehabilitation, California Hospital Association/Center for Post-Acute Care, Newport Beach, CA, January 2012

Developing a Quality Measurement Agenda for Physical Medicine and Rehabilitation, AAPM&R Annual Assembly, Orlando, FL, November 2011

Comparative Effectiveness Research: A Focus on Stroke Rehabilitation, Department of Physical Medicine and Rehabilitation, Stanford University, Palo Alto, CA, February 2011

Taking the Leap: The Launch of a Community Oral History Project, UC Berkeley Bancroft Library Summer Institute, Berkeley, CA, August 2011

Quality Measurement in PM&R/PRM Practice, International Society for Physical and Rehabilitation Medicine, 6th World Congress, San Juan, Puerto Rico, June 2011

Moderate/Severe TBI: Late Outcomes, ISPRM 6th World Congress, San Juan, PR, June 2011

PRESENTATIONS, Cont.

Loma Linda University, Loma Linda, CA, Visiting Professor Lectures, March 2011: Mild Traumatic Brain Injury: Evaluation and Treatment for Optimal Outcomes; Comparative Effectiveness Research: A Focus on Stroke Rehabilitation; Traumatic Brain Injury: Mechanisms of Injury and Recovery; Stroke: Physician and Patient Perspectives about Recovery

The Future of Stroke Care: Research is the Compass, Annual Rehabilitation Symposium: New Directions in Stroke Care: Recovery, Rehabilitation and Research, Kaiser Foundation Rehabilitation Center, Vallejo, CA, November 2010

Presidential Address: Playback/PM&R: Our Voices, Our Vision; Oral History Interviews of Members of the AAPM&R, AAPM&R Annual Assembly, Seattle, WA, November 2010

Studying Traumatic Brain Injury Using a Natural Experiment Approach, Annual Neurotrauma National Symposium, Las Vegas, NV, June 2010

Patient-Centered Care for Individuals with Disabilities, Permanente Medical Group CME Conference, Chardonnay Country Club, April 2010

Beyond Patient-Centered Care, Kaiser Permanente National Diversity Conference, San Francisco, CA, November 2009

Course Director: Gender, Race, Disability: Current Perspectives on Diversity Issues in Career Development, AAPM&R Annual Assembly, Austin, TX, October 2009

Comparative Effectiveness Research, AAPM&R Annual Assembly, Austin, TX, October 2009

Stroke Rehabilitation in a Large U.S. Integrated Health System: Care Pathways, Utilization, and Outcomes, Stroke Rehabilitation Symposium, Weill Cornell Medical Center, NY, May 2009

Translating Activity Limitations into Functional Life Experiences, Kaiser Permanente, Vallejo, CA, December 2008

Early Intervention and Care Management: The Role of Trauma Rehabilitation Starting from Day One, Annual Rehabilitation Symposium, Oakland Marriott, Oakland, CA, November 2008

Untapped Potential: Strategies to Engage Persons with Disabilities in the Workplace, National Diversity Conference, San Francisco, CA, December 2007

Disparities in Post-Acute Stroke Rehabilitation, Poster Presentation, AAPM&R Annual Assembly, Boston, MA, September 2007

Statin Drugs: Benefits and Potential Risks for Polio Survivors, Post- Polio Survivors Group, Martinez, CA, April 2007

PRESENTATIONS, Cont.

Community Re-Integration Following Neurotrauma: Case Studies, San Francisco Neurological Society, Sonoma, CA, March 2007

Disparities in Post-Acute Stroke Rehabilitation: Results of an Integrated Health System Study in Northern California, Symposium on Post-Acute Rehabilitation, Crystal City, VA, February 2007

Neurotrauma Care and Stroke: International and National Standards, Annual Rehabilitation Symposium, Oakland Marriott, Oakland, CA, September 2006

Spinal Cord Injury: Diagnosis and Practical Management, Kaiser Permanente, Walnut Creek, CA, January 2005; Vallejo, CA, September 2005.

Sexual Evaluation and Medical Management for Individuals with Disabilities and Chronic Health Conditions, Annual Rehabilitation Symposium, Oakland Marriott City Center, Oakland, CA, September 2005

Culturally Competent Care for Individuals with Disabilities, Kaiser Permanente, Oakland, CA, October 2004

Best Practices and Models of Care for Individuals with Disabilities, Kaiser Permanente Capital Service Area Continuing Medical Education Program: Quality Caring Across the Continuum, Sacramento, CA, September 2004

Traumatic Brain Injury, Permanente Medicine Today, Oakland, CA, November 2003

Culturally Competent Care for Individuals with Disabilities, National Diversity Conference, Half Moon Bay, CA, September 2003

Aging with a Disability: The Late Effects of Polio, Kaiser Foundation Rehabilitation Center's Annual Rehabilitation Symposium, Oakland Marriott, Oakland, CA, September 2003

History of Kaiser Foundation Rehabilitation Center, TPMG Learning Lunch, Kaiser Regional Offices, Oakland, CA, August 2003

Polio in the 21st Century, The Rotary Club, Pleasant Hill, CA, July 2003

Fatigue: Is There Any Science to Help Us Treat This Symptom? San Francisco Bay Area Polio Survivors group, Kaiser Medical Office Building, Martinez, CA, May 2003

Post-Polio Syndrome, Grand Rounds, Kaiser Foundation Hospital, Vallejo, CA, April 2003

Culturally Competent Care: Meeting the Needs of our KP Members with Disabilities, Learning Lunch, Kaiser Foundation Hospital, San Francisco, CA, February 2003

PRESENTATIONS, Cont.

Stroke: Post-Acute Care and Rehabilitation in an Integrated Health System, National Health Services representatives, Kaiser Foundation Hospital, Vallejo, CA, February 2003

Late Effects of Polio, Kaiser Foundation Hospital, Oakland, CA, January 2003

Providing Culturally Competent Care to Our Members with Disabilities, Kaiser Foundation Hospital, Oakland, CA, November 2002

History: Kaiser Foundation Rehabilitation Center, Program Offices, Oakland, CA, October 2002

Providing Culturally Competent Care to Our Members with Disabilities, Kaiser Permanente's National Diversity Conference, Pasadena, CA, October 2002

Providing Culturally Competent Care to Our Members with Disabilities: Best Practices - Adult Populations, Kaiser Foundation Rehabilitation Center's Annual Rehabilitation Symposium, Oakland Marriott, Oakland CA, September 2002

Traumatic Brain Injury and Recovery, UC Davis Medical Center, Davis, CA, July 2002

Consciousness: Coma and Related States, Grand Rounds, Kaiser Foundation Rehabilitation Center, Vallejo, CA, July 2002

Mild Traumatic Brain Injury: Implications for Clinical Practice, Neuroscience Group, Northern California Kaiser Permanente, Oakland, CA, March 2002

Mild (Subtle!) Traumatic Brain Injury, Vallejo Medical Staff, Kaiser Foundation Hospital, Vallejo, CA, February 2002

Measuring Stroke Outcomes and Rehabilitation Triage in an Integrated Health System, California Rehabilitation Association conference, San Diego, CA, January 2002

Caring for Patients with Neurological Disorders, Medicine Department Nurse Practitioners' Professional Education Seminar, Kaiser Foundation Hospital, Vallejo, CA, December 2001

Dynamic Imaging in Mild Traumatic Brain Injury: Topics and Trends in Quantifying Rehabilitation, VA Greater Los Angeles Healthcare System, Los Angeles, CA, September 2001

The Permanente Medical Group Clinical Practice Guidelines for Stroke: Development and Implementation, Cedars-Sinai Medical Center, Los Angeles, CA, September 2001

The Role of the Psychiatrist in Managed Care - Institutional Perspective, AAPM&R Annual Assembly, New Orleans, LA, September 2001

PRESENTATIONS, Cont.

The Permanente Medical Group Guidelines for Stroke, The Rehabilitation Continuum: A Focus on Stroke, Kaiser Foundation Rehabilitation Center, Claremont Hotel, Berkeley, CA, May 2001

Measuring Functional Outcomes After Stroke: Results of the FIM Study, with A. McCarthy, and D. Brown, Annual Research Conference - Dialogue of the Future: Integrity in Research & Practice, Kaiser Permanente Medical Center, Walnut Creek, CA, March 2001

Physical, Cognitive, and Behavioral Effects of Chemical Dependency: A Rehabilitation Perspective, Kaiser Permanente Medical Center, Vallejo, CA, January 2001

The Role of the Psychiatrist in Managed Care: The Institutional Perspective, AAPM&R Annual Assembly, San Francisco, CA, November 2000

Course Director - The Permanente Medical Group Clinical Practice Guidelines for Stroke: Development and Implementation in an Integrated Health System, AAPM&R Annual Assembly, San Francisco, CA, November 2000

Telemedicine in TBI: Establishing a Registry and Tracking System, AAPM&R Annual Assembly, San Francisco, CA, November 2000

Spinal Cord Injury: New Frontiers in Treatment, Annual Rehabilitation Symposium – Rehabilitation Continuum: A Focus on Spinal Cord Injury, Kaiser Foundation Rehabilitation Center, Touro University, Vallejo, CA, May 2000

Pharmacologic Management of Behavior in Traumatic Brain Injury, UC Davis Ambulatory Care Center, UC Davis Medical Center, Sacramento, CA, April 2000

Traumatic Brain Injury: Mechanisms of Injury and Recovery, UC Davis Medical Center, Sacramento, CA, April 2000

Pharmacologic Management of Behavior in Traumatic Brain Injury, California Society of Physical Medicine and Rehabilitation Annual Conference, Renaissance Parc 55 Hotel, San Francisco, CA, April 2000

Telemedicine and Research Interfaces for the New Millennium, with A Hobbs, PhD, Annual Research Conference: Changing Views for the New Millennium, Kaiser Permanente Medical Center, Walnut Creek, CA, March 2000

Physiatry and Managed Care: The Kaiser Permanente Model, AAPM&R Annual Assembly, Washington, DC, November 1999

Traumatic Brain Injury: Mechanisms of Injury and Recovery, Annual Rehabilitation Symposium Rehabilitation Continuum: A Focus on Brain Injury, Kaiser Foundation Rehabilitation Center, Vallejo, CA, June 1999

PRESENTATIONS, Cont.

Brain Injury: Neuropharmacologic Interventions to Improve Cognitive-Behavioral and Physical Outcomes, Annual Review Course: Physical Medicine and Rehabilitation, University of Washington School of Medicine, Seattle, WA, March 1999

Brain Injury and Alzheimer's Disease: Is There a Genetic Link? Annual Research Conference, Kaiser Permanente Medical Center, Walnut Creek, CA, March 1999

Neuroinformatics: An Emerging Interface in Kaiser Permanente, with Allen Hobbs, PhD, Rehabilitation of Persons with Traumatic Brain Injury. NIH Consensus Development Conference, NIH, Bethesda, MD, October 1998

Neural Plasticity, International Proprioceptive Neuromuscular Facilitation Conference, Kaiser Foundation Rehabilitation Center, Vallejo, CA, September 1998

Deep Venous Thrombosis and Pulmonary Embolism after Stroke, First Annual Rehabilitation Symposium: Stroke Rehabilitation Across the Continuum, Kaiser Foundation Rehabilitation Center, Vallejo, CA, June 1998

Managed Care and Spinal Cord Injury: The Kaiser Experience, American Spinal Injury Association National Meeting, Cleveland, OH, April 1998

Prognostication: Challenges for the Field of Rehabilitation Medicine, State University of New York at Buffalo, Buffalo, NY, March 1997

Course Director - Injury Prevention: Traumatic Brain Injury, AAPM&R Annual Assembly, November 1997

Outcome After Traumatic Brain Injury: A Rehabilitation Medicine Perspective, University of Colorado Health Sciences Center, Denver, CO, February 1997

The Role of Neuropharmacologic Intervention in Optimizing Outcomes After Traumatic Brain Injury, The Brain Injury Prognosis and Outcome Conference, Queens Landing, Niagara-on-the-Lake, Ontario, Canada, July 1996

Early Rehabilitation Strategies for Severe Acute Brain Trauma in Adults, First Symposium of the International Society for Neuroemergencies, Freeport, Bahamas, July 1996

Outcome Measures in Rehabilitation Medicine: An Overview, Symposium of the International Society for Neuroemergencies, Freeport, Bahamas, July 1996

Disorders of Consciousness, Annual Conference: Rebuilding Shattered Lives, JFK Johnson Rehabilitation Institute, Edison, NJ, May 1996

PRESENTATIONS, Cont.

Partial Kliver-Bucy Syndromes Following Diffuse Brain Injury, with LB Kile, MD, A Zwil, MD, T McAllister, MD, and K Williams, MD. American Neuropsychiatric Association Annual Meeting, Pittsburgh, PA, November 1995

Noninvasive Magnetic Resonance Imaging in Cerebrovascular Disease, with D Roberts, JS Leigh, H Goldberg, JA Detre, and R Rizi. Radiologic Society of North American Annual Meeting, Chicago, IL, November 1995

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Prognostic Factors in Traumatic Brain Injury: An Overview, Magee Rehabilitation Hospital Seminar, Four Seasons Hotel, Philadelphia, PA, April 1992

Rehabilitation of the Mild Brain Injured Patient: Early Interventions, Closed Head Injury: The Medical, Legal, and Rehabilitative Continuum, Department of Psychiatry and Human Behavior, Jefferson Medical College, Philadelphia, PA, April 1992

Family Issues in Brain Injury Rehabilitation, Grand Rounds, Department of Psychiatry, Thomas Jefferson University Hospital, Philadelphia, PA, February 1992

Nutritional Management of the Traumatic Brain Injured Patient, Leader Nursing Home, West Deptford, NJ, January 1992

Persistent Facial Myoclonus: A Negative Prognostic Sign After Brain Injury, with Michael O'Dell, MD, AAPM&R Annual Assembly, Washington, DC, October 1991

Outcome After Traumatic Brain Injury, Trauma Rounds, Thomas Jefferson University Hospital, Philadelphia, PA, September 1991

Long-term Management of Traumatic Brain Injured Patients, Keeping Ahead Seminar, Magee Rehabilitation Hospital, Philadelphia, PA, September 1991

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Resident Training in Traumatic Brain Injury, with Maria Labi, MD, AAPM&R Annual Assembly, Phoenix, AZ, October 1990

Protein Metabolism After Severe Brain Injury, with Douglas Norcross, MD, AAPM&R Annual Assembly, Phoenix, AZ, October 1990

Early Intervention in Head Injury Rehabilitation, with Claire Spettell, PhD, AAPM&R Annual Assembly, Phoenix, AZ, October 1990

Assessment of Chemical Dependency in Head Injured Patients, with Rose Plotkin, PhD, AAPM&R Annual Assembly, Phoenix, AZ, October 1990

Coma Rehabilitation, University Hospital Trauma Division, Newark, NJ, May 1990

Rehabilitation of Traumatic Brain Injury, Central New York Academy of Medicine, Physical and Rehabilitative Medicine Teaching Day, Utica, NY, February 1990

Prognosis After Traumatic Brain Injury: State of the Art and Research Directions, AAPM&R Annual Assembly, San Antonio, TX, November 1989

Mild Head Injury, Grand Rounds, Moss Rehabilitation Hospital, Philadelphia, PA, June 1989

Mild Head Injury: The Neurodiagnostic Evaluation, Professional Conference, Mediplex Rehab-Camden, Camden, NJ, May 1989

Pathophysiology of Mild Head Injury, Selective Insurance Company, Princeton, NJ, May 1989

Predicting Outcome After Traumatic Brain Injury, Professional Rehabilitation Network, Marlton, NJ, April 1989

Unpredicted Recovery After Massive Left Hemispheric Injury, with Rebecca Resh, MEd and Edward J. Alexander, MD, AAPM&R Annual Assembly, Seattle, WA, November 1988

Acquired Factor VIII Deficiency After Brain Injury, with Lance Busch, DO, AAPM&R Annual Assembly, Seattle, WA, November 1988

Behavioral Outbursts and Temporo-Limbic Activity: An Integrated Behavioral-Medical Investigation, with Mark Rader, PhD, Head Injury Conference: An Integrated Approach to Behavioral Rehabilitation, Tufts/New England Medical Center, Boston, MA, April 1988

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Minor Brain Injury, South Jersey Claims Managers Association, Mt. Laurel, NJ, April 1987

Medical Complications Encountered in Head-Injured Adults: Neuroendocrinology and Autonomic Dysfunction, AAPM&R Annual Assembly, Orlando, FL, October 1987

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Spasticity: Neurophysiology and Treatment, Fourth Annual Symposium on Current Trends in Research, Diagnosis, and Rehabilitation of the Multiple Sclerosis Patient, The Wistar Institute, Philadelphia, PA, May 1986

Hypertension After Brain Injury, Annual Conference on Rehabilitation of the Brain-Injured Adult and Child, Williamsburg, VA, June 1985

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See University of California Bancroft Library for Dr. Sandel's oral history:

<https://bancroft.berkeley.edu/ROHO/projects/kaiser/interviews.html>

See Dr. Sandel's website for blogs, and other media presentations, including podcasts and interviews: <https://elizabethsandelmd.com/>.

ADDITIONAL EDUCATION AND WORK EXPERIENCE

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|-----------|---|
| 1971-1972 | Boston University School of Theology, Boston, MA; M.Div. graduate program |
| 1972-1973 | Internship in Campus Ministry, University of Pennsylvania, Philadelphia, PA |
| 1973-1975 | Administrative Assistant, Women's Studies Program
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