

April 2016

CURRICULUM VITAE

NAME: Susan Holly Curwin Brown

PLACE OF BIRTH: Windsor, Nova Scotia, Canada

ACADEMIC DEGREES:

- 1972-1976 Acadia University, Wolfville, Nova Scotia
B.Sc. Biology (Honours)
- 1977-1979 University of Western Ontario, London, Ontario, Canada
M.Sc. Physiology *Movement-Related EMG Activity in Humans*
- 1981-1986 University of Western Ontario, London, Ontario, Canada
Ph.D. Physiology *Control of Movement Initiation in Humans*

EMPLOYMENT:

- 1979-1981 Research Assistant, Dept. of Physiology, Univ. Western Ontario
- 1986-1987 Research Associate, Dept. of Physiology, Univ. Western Ontario
- 1987-1989 Post-doctoral Research Fellow, Dept. of Neurology, Univ. Duesseldorf, Germany
- 1989-1990 Research Associate, Dept. of Neurology, Univ. Western Ontario
- 1991-1992 Research Associate, Faculty of Applied Health Sciences, Univ. Western Ontario
- 1992-1998 Assistant Professor, Division of Kinesiology, Univ. Michigan
- 1998- present Associate Professor, Division of Kinesiology, Univ. Michigan
- 1999- 2006 Associate Dean for Research, School of Kinesiology, Univ. Michigan

RELATED CLINICAL EXPERIENCE:

- 1990-1991 Combined courses, field work in Physical Therapy, Univ. Western Ontario

HONORS AND AWARDS (post graduate):

- 1987-1989 Alexander von Humboldt Fellowship, Germany
- 1991-1992 Ontario Ministry of Health Fellowship
- 1996 Teaching Excellence Award, Division of Kinesiology, University of Michigan
- 1997 Career Development Award for Women Faculty, University of Michigan
- 2000 Teaching Excellence Award, Division of Kinesiology, University of Michigan
- 2001 University of Michigan Thurnau Professorship for Excellence in Undergraduate Teaching
- 2002 St. Thomas University Visiting Chair Professorship in Gerontology (Fredericton, New Brunswick, Canada)
- 2004, 2012 UM Elizabeth Crosby National Science Foundation ADVANCE Award
- 2008 American Academy for Cerebral Palsy and Developmental Medicine Gayle G. Arnold Award for Excellence 2009 nominee
- 2009 Rush University Forum for Research and Clinical Investigation Cohn Symposium Distinguished Lecturer
- 2010 Undergraduate Research Opportunities Program Outstanding Research Mentor Award, University of Michigan
- 2013 Teaching Excellence Award, School of Kinesiology, University of Michigan
- 2015, 2016 University of Michigan Golden Apple Teaching Award nominee

PROFESSIONAL MEMBERSHIPS:

1978- present Society for Neuroscience
1998- present International Movement Disorders Society
1998- present Gerontological Society of America

PROFESSIONAL DEVELOPMENT:

2010 Ann Arbor SPARK Entrepreneurial Boot Camp (November)
2010 Annual Collaboration for Entrepreneurship (Great Lakes) (December)
2011 SBIR Grant Proposal Workshop (February)
2011 MichBio Annual Meeting and Showcase (April)

SERVICE (RESEARCH):

1993-2000 Co-organizer - Center for Human Motor Research Seminar Series, Division of Kinesiology
1993-1998 Founder - Kinesiology Day (annual one-day meeting to showcase multi-disciplinary activities within the Division of Kinesiology)
1991- present Manuscript Reviewer for: Archives Physical Medicine and Rehabilitation, Brain, Brain Research, Experimental Brain Research, Journal of Motor Behavior, Journal of Neurophysiology, Motor Control, Journal of Gerontology, Neuropsychology, Journal of Hand Therapy, Ergonomics
2000-present Grant Reviewer for Canada Foundation for Innovation, Medical Research Council of Canada, Fonds de Recherche sur la Nature et les Technologies Quebec, Sick Children's Hospital
2006-2007 NIH Taskforce on Childhood Motor Disorders
2006 NIH reviewer: ZRG1 BBBP-E (02) Motor Dysfunction, Learning, and Voice
2007 workshop organizer (Adults with Cerebral Palsy) American Academy of Cerebral Palsy and Developmental Medicine
2007- present Editorial Board Member, Motor Control Journal
2009 University of Wisconsin –Milwaukee Graduate School - external grant reviewer
2012 Blue Cross Blue Shield Foundation of Michigan grant reviewer
2012- present International Conference on Disability, Virtual Reality and Associated Technologies (ICDVRAT) international program committee member
2011- present Promotion and Tenure reviewer
2014, 2016 Oak Ridge Associated Universities Consortium grant reviewer

SERVICE (UNIVERSITY):

1999 – 2006 Research Associate Deans Group, University of Michigan
2001 – 2007 Provost's Council on Student Honors
Senate Assembly Tenure Committee
University of Michigan Initiative on Disability Studies Steering Committee
2002- 2007 University of Michigan Shipman Scholars Society faculty advisor
2002 University of Michigan President's Council on Undergraduate Education
2003 – 2004 Center for Research on Learning and Teaching Faculty Advisory Committee
2004- 2007 Provost's Student Honors Sub-Committee for Rhodes, Mitchell, Marshall nominees
2005- 2007 University of Michigan NIH- Clinical and Translational Science Award proposal working committee, CTSA institutional support, community engagement subcommittees)
2005-2014 UM Multidisciplinary Clinical Researchers in Training (MCRiT) Advisory Committee
2006-present UROP/Women in Science and Engineering invited seminar speaker
2006 UM Biomedical Research Council grant reviewer
2007-2010 Rackham Graduate School Barbour Scholarship Selection committee member

2007-2008	Michigan Institute for Clinical and Health Research (MICHR) Scientific Advisory Committee member and internal grant reviewer
2008 -	MICHR Educational Unit – Unified Curriculum Committee member
2008-2009	Physical Medicine and Rehabilitation Bioengineering Faculty Search Committee member
2009-2011	University Grievance Review Board – cognate chair faculty panel
2010- 2014	MICHR Post Doctoral Programs Admissions Committee
2011- 2013	Chair, Provost Ad Hoc Committee on Curriculum Related to Sport and Physical Activity
2011- 2014	MICHR Pilot Grant Program reviewer
2012	UROP New Faculty Orientation Panel member
2012	UROP Faculty Advisory Committee member
2013	Promotion and Tenure Reviewer – Florida International University, Faculty of Nursing and Health Services
2013	Portfolio Reviewer – University of Michigan Minor in Writing
2013-2014	UM Theme Semester “Sport and the University” planning committee member
2015	Dean of Kinesiology Search Committee member (Provost appointed)

SERVICE (KINESIOLOGY):

1993-1996	Kinesiology Day Committee (chair, committee member)
1994-1995	Kinesiology K-Quality Committee - Ph.D. review (member)
	Martin Luther King Day panel discussion, Kinesiology (co-moderator)
	Planning Committee - Joint Ph.D. Program between Dept. of Physical Therapy and Division of Kinesiology (Kinesiology representative)
1994-1998	Graduate Committee (member)
1996-1997	Learning Environment Advisory Committee (member)
	Faculty Search Committee (member)
1996-1998	Executive Committee (member)
1997-1998	UM Provost Grant Governing Team (member)
	Kinesiology Dean Search Committee (member)
	Awards Committee (member)
1998-1999	Chair, Movement Science Curricular Unit
	Faculty Search Committee (member)
	Systems Administrator Search Committee (member)
1999-2000	Chair, Graduate Committee
	Coordinator, Kinesiology Minority Undergraduate Student Initiative
1999-2006	Associate Dean for Research
2000-2002	Chair, Senior Faculty Search Committee
2000-2005	Coordinator, Kinesiology Seminar Series
2002-2006	Awards Committee
2004-present	Movement Science Honors Coordinator
2004- 2007	Technology Committee
2005-2006	Lecturer Search Committee member
2007-2009	Kinesiology Endowed Professorship Search Committee (co-chair)
2008-2011	Kinesiology Neuromotor Control Search Committee (co-chair)
2008-2011	Kinesiology Graduate Studies Committee member
2008-2009	Movement Science representative – Curriculum Committee
2009-2010	Scientific Writing Lecturer Search Committee member
2009-2012	Chairperson - Movement Science Faculty Committee
2010-present	Shipman Scholar Interviewer
2011	Search Committee – Director of Office of Student Services – ad hoc member
2011	Search Committee – Technical Support Staff position – ad hoc member
2011-present	MVS Presenter – Campus Days recruiting
2011-2012	Core Committee member – Revised Kinesiology Major in Health and Wellness
2014-	Graduate Committee member
2014	Search Committee –Director of Office of Undergraduate Student Affairs
2015	Associate Dean Search Committee member
2015	Faculty pre-health advisor, Office of Undergraduate Student Affairs

2014-present Faculty advisor – UM Pre-Physical Therapy Club

SERVICE (COMMUNITY) (1992-):

1993-1994 Washtenaw County Intermediate School Board - Females in Technology Program
Site Visit Coordinator and Host
1994 Angell School, Ann Arbor - Grade 4 Laboratory Site Visit
1995 Washtenaw County Parkinson Support Group - Board of Directors presentation
1997 Coordinator for summer presentation series to Parkinson support group
1997-present Technical Expert - Technical Advisory Service for Attorneys
1997-present Speaker - Parkinson Support Groups in southeastern Michigan
2000-2002 Ann Arbor Exercise and Mobility Program for Individuals with Parkinson's Disease –
coordinator
2004 Local radio interview (WAAM) – aging and physical activity
2004 -2005 Coordinator for service learning wellness project – Ann Arbor Center for Independent
Living and Division of Kinesiology collaboration
2006 City of Ann Arbor Science Safari presenter
2009-present Faculty mentor, Michigan Mentorship Program, Washtenaw County Alliance for Gifted
Education

RESEARCH GRANTS (funded unless otherwise stated):

1992-1994 Univ. Western Ontario Academic Development Fund, \$50,000
Development of a Portable Unit for Testing of Movement Function
co-investigator
1993 OVPR small projects grant, Univ. Michigan, \$1,200
Support for Dr. M.Thaut (visiting scholar)
1993-1994 Rackham Faculty Grant, Univ. Michigan, \$14,700
Auditory Facilitation of Upper Limb Movements
principal investigator
1995 National Parkinson Foundation \$2,200
Role of Auditory Cueing in Assisting Movement In Parkinson's Disease
Summer Graduate Research Fellowship for T. Liberzon, doctoral student)
1995 Washtenaw County Parkinson Support Group \$1,200
Role of Auditory Cueing in Assisting Movement in Parkinson's Disease
Graduate Student Support
1996 National Institute of Aging FIRST Award \$498,477
Facilitation of Motor Function Through Sensory Cueing
principal investigator (09/96-08/01)
1996 National Parkinson Foundation \$2,200
*Role of Auditory Cueing in Facilitating Limb-Posture Coordination in Parkinson's
Disease*
Summer Graduate Research Fellowship for T. Liberzon, doctoral student)
1996 National Institute for Disability and Rehabilitation Research \$348,000
*Treatment of Upper Extremity Spasticity with Botulinum Toxin: Motor Control
Evaluation to Determine Efficacy*
co-principal investigator (09/96-08/99)

- 1996 National Institutes of Health \$1,213,420
University of Michigan Medical Rehabilitation Research Training Program, Dept. of Physical Medicine and Rehabilitation
(participating investigator) 07/96 - 06/01
- 1996 RCMC Clinical Research Center Pilot Project - Univ. Puerto Rico \$20,000
Quantitative Assessment of Upper Limb Function in Children with Myelodysplasia
(co-principal investigator with Dr. Eduardo Ramos, Univ. of Puerto Rico)
12/96-12/97
- 1996 Office of the Vice - President for Research and the Rackham Graduate School \$1,000
Computer Applications in Rehabilitation Workshop, London, Ontario
- 1997 Rackham Spring/Summer Research Grant \$2,000
Bilateral Force Control in the Elderly
(support for G. Conti, doctoral student)
- 1999 University of Michigan Career Development Fund for Women Faculty \$5,000
- 2000 National Center for Medical Rehabilitation Research – Centers of Excellence Programs
Restoration of Function in Neurologic Impairment – A Research Development Program
network scientist participating member (P.I. Dr. Z. Rymer, Rehabilitation Institute of Chicago)
- National Institute for Disability and Rehabilitation Research \$449,816
Repetitive Intensive Training Exercise: Effect on Upper Extremity Motor Function in S Spasticity
co-principal investigator, (PI - Dr. E. Hurvitz, Dept. of Physical Medicine and Rehabilitation) (09/00-08/03)
- Michigan Parkinson's Foundation \$1,500
Development of an exercise intervention program for Parkinson's Disease
- University of Michigan Summer Research Undergraduate Opportunity (SROP) Biomedical Fellowship (H. Feldhusen, undergraduate Kinesiology student) \$3,500
- UM Medical Rehabilitation Research Training Program (NIH T32) \$1,730,630 (5yr)
Bridging Science into Service
Assessment of Motor Performance Core Co-Director
- UM SROP Biomedical Fellowship (M.Bui, LSA) \$3500
- 2002 UM South Africa Initiatives Office \$5,000
Effects of Malnutrition on Motor Performance in Preadolescence and Adolescence in Rural South Africa principal investigator
- UM Graduate School \$5,000
Effects of Malnutrition on Motor Performance in South African Children
principal investigator
- UM Mott Children's Hospital \$28,000
Bilateral Coordination in Children with Unilateral Upper Limb Impairment
co-principal investigator (PI: E. Hurvitz)

- Preparation of Leadership Personnel Training Grant, U.S. Dept of Education \$793,000
Core faculty member providing pediatric research opportunities - funding for trainees only
(09/02-09/07)
- 2003 UM SROP Biomedical Fellowship \$3500 (S. Huang, Engineering)
- UM Office of the Vice President for Research \$5780.00
Auditory Facilitation of Limb-Posture Coordination in Healthy Aging and Parkinson's Disease principal investigator
- 2004 UM Elizabeth Crosby NSF Advance Award \$20,000
Limb-Posture Control and Proprioceptive Function in the Elderly
principal investigator
- 2005 National Institutes of Health R03 \$150,000
Age-related Changes in Upper Limb Proprioceptive Acuity
principal investigator (08/05-08/07)
- Weikert Family Foundation \$30,000
Movement and Music Program to Enhance Elementary School Learning, Motor Coordination and Health Attitudes – Planning Grant (2005-2006)
principal investigator
- National Institute on Disability Rehabilitation and Research \$450,000
Sensorimotor Training and Assessment in Adults with Hemiplegic Cerebral Palsy: The ULTrA Program
Principal Investigator (12/05-12/09)
- UM SROP Biomedical Fellowship \$3500 (C. Waechter, Kinesiology)
- UM Center for the Education of Women Reicher Scholarship for Undergraduate Research \$2,000
- 2006 UM Digital Media Commons GROCs program \$1500
ACE for Art: Adapted Computer Environment for Online Art Workshop
faculty advisor
- 2008 American Heart Association Midwest Affiliate \$142,000
Internet-based Upper Limb Training in Hemiplegic Stroke
Principal Investigator (score: 1.62 not funded)
- UM SROP Biomedical Fellowship \$3500 (E. Schweiger, Kinesiology)
- 2009 National Institute on Disability Rehabilitation and Research \$579,753.00
Home- and Internet-Based Sensorimotor Training in Adults with Cerebral Palsy
Principal investigator (12/09-11/12) to be resubmitted
- American Heart Association Midwest Affiliate \$142,000
Internet-based Upper Limb Training in Hemiplegic Stroke
Principal Investigator (resubmission – 1.8 not funded, program temporarily suspended)
- UM SROP Biomedical Fellowship \$3500 (C. Loji, Kinesiology)

- Nicholas Leoni Endowment Fund \$25,000
Enhancement of Movement Therapy Through Aerobic Exercise: Maximizing Performance in Adults with Cerebral Palsy
 Principal Investigator (09/09-09/10)
- 2010 Blue Cross Blue Shield of Michigan Foundation \$73,640
An Arm Telerehabilitation Program in Chronic Stroke
 Principal Investigator (02/10-01/11)
- UM Office of the Vice-President for Research \$9,396
Enhancement of Task-Specific Therapy Through Aerobic Exercise and Potential Underlying Mechanisms
 Principal Investigator (02/10-01/11)
- National Institute on Disability Rehabilitation and Research \$597,133
Home- and Internet-Based Sensorimotor Training in Adults with Cerebral Palsy
 Principal investigator (10/10-09/13) (91/100 score, not funding)
- American Heart Association Midwest Affiliate \$4,000
 Student Summer Fellowship (R. Napier, Kinesiology)
- UM SROP Biomedical Fellowship \$4,000 (K. DeLave, Kinesiology)
- National Institutes of Health R21 \$427,250
Telerehabilitation to improve upper limb sensorimotor function in chronic stroke
 Principal Investigator (04/11-03/13) (reviewed, 34th percentile, not funded)
- 2011 Michigan Universities Commercialization Initiative \$47,000
 Commercial Development of a Quantitative Device to Assessment Arm Reaching Performance
 (Principal Investigator (In collaboration with UM Office of Technology Transfer)
- National Institutes of Health R21 \$427,250
Telerehabilitation to improve upper limb sensorimotor function in chronic stroke
 Principal Investigator (03/15/2011) (resubmission - triaged)
- National Institutes of Health STTR Phase I \$170,000 (UM subcontract \$74,000)
Advanced Telerehabilitation Device to Improve Arm/Hand Use in Chronic Disability
 Co-Principal Investigator (04/-1/2011) (reviewed, 36th percentile, not funded)
- Michigan Initiative for Innovation and Entrepreneurship Phase I \$30,000
 Fabrication and Testing of the ULTrA Board
 Principal Investigator (in collaboration with UM Office of Technology Transfer)
- 2012 Michigan Initiative for Innovation and Entrepreneurship Phase II \$42,500
 Development of Commercial Bimanual Grasp Force and Tactile Discrimination Assessment Devices
 Principal Investigator (in collaboration with UM Office of Technology Transfer)
- UM College of Engineering Technology Development Fund \$10,000
 Prototype Development of a Therapeutic Bimanual Manipulation Device
 Principal Investigator
- Michigan Innovation Center \$27,000
 Development of Quantitative Stereognosis Device

Principal Investigator (in collaboration with UM Office of Technology Transfer)

Nicholas Leoni Endowment Fund \$20,000
Somatosensory Function in Neonatal Brachial Plexus Palsy
Principal Investigator

University of Michigan ADVANCE Program Elizabeth Crosby Award \$16,500
Building Better Assessment Tools for Neurorehabilitation: Clinical Utility in Developmental
Changes in Neonatal Brachial Plexus Palsy, PI

2013 University of Michigan Medical School and Spring Arbor University Collaborative
Research Program \$32,000
Determination of Tactile Perception Developmental Norms, PI

NIH R15 \$300,000
Effects of arm-hand training on upper limb and postural control in older adults.
Principal Investigator (revised submission, not funded)

2014 DARPA \$3,602,096
Touch and proprioceptive regenerative peripheral nerve interface.
Principal Investigators: P. Cederna, C. Chestek, UM
Brown: Co-investigator (Direct costs: \$125,238, Indirect: 39,167) (not funded)

UM-Pediatric Device Consortium \$39,600
Development of a Novel, Quantitative Pediatric Rehabilitation Platform
Principal Investigator Direct costs: \$36,000

2015 UM MICHHR \$25,000 (Co-PI)
Remote Assessment of Home-Based Arm Activity in Adult Patients with Traumatic
Brachial Plexus Injury
(Dr. L Yang, Neurosurgery, PI)

UM MCUBED \$60,000 (PI)
Remote monitoring of real world arm use in clinical populations

2016 Blue Cross Blue Shield Foundation of Michigan \$74,565.00 (PI)
Self-generated arm use following surgical intervention for brachial plexus injuries

RESEARCH PUBLICATIONS (refereed journals):

1. **Brown, S.H.C.**, Cooke, J.D. Amplitude-and instruction-dependent modulation of movement-related EMG activity in humans. *J. Physiol.* 316: 97-107, 1981a.
2. **Brown, S.H.**, Cooke, J.D. Compensation for force perturbation preceding voluntary human arm movements. *Brain Res.* 220: 350-355, 1981b.
3. **Brown, S.H.**, Cooke, J.D. Initial agonist burst duration depends on movement amplitude. *Exp. Brain Res.* 55: 523-527, 1984.
4. Cooke, J.D., **Brown, S.H.** Science and statistics in motor physiology. *J. Mot. Behav.* 17: 489-192, 1985.

5. Cooke, J.D., **Brown, S.H.**, Forget, R., Lamarre, Y. Initial agonist burst duration changes with movement amplitude in a deafferented patient. *Exp. Brain Res.* 60: 184-187, 1985.
6. **Brown, S.H.**, Cooke, J.D. Magnitude of the initial agonist burst is modified by perturbations preceding movement. *Brain Res.* 377: 311-322, 1986a.
7. **Brown, S.H.**, Cooke, J.D. Movement-related EMG activity compensates for position-dependent changes in limb properties. *J. Hum. Mov. Studies.* 12: 297-312, 1986b.
8. Cooke, J.D., **Brown, S.H.** Phase-plane tracking; a new method for shaping movements. *Behav. Brain Bull.* 16: 435-437, 1986.
9. Cooke, J.D., **Brown, S.H.**, Cunningham, D.A. Kinematics of arm movements in elderly humans. *Neurobiol. Aging.* 10: 150-165, 1989.
10. Darling, W.G., Cooke, J.D., **Brown, S.H.** Control of simple arm movements in elderly humans. *Neurobiol. Aging.* 10: 139-149, 1989.
11. **Brown, S.H.**, Cooke, J.D. Movement-related phasic muscle activation: I. Relations with temporal profile of movement. *J. Neurophysiol.* 63: 455-464, 1990.
12. **Brown, S.H.**, Hefter, H., Mertens, M., Freund, H.-J. Disturbances in movement trajectory due to cerebellar dysfunction. *J. Neurol. Neurosurg. Psychiat.* 53: 306-313, 1990.
13. Cooke, J.D., **Brown, S.H.** Movement-related phasic muscle activation: II. Generation and functional role of the "triphasic" pattern. *J. Neurophysiol.* 63: 465-472, 1990.
14. **Brown, S.H.**, Hefter, H., Cooke, J.D., Freund, H.-J. Preferential impairment of slow and fast alternating movements in patients with mild cerebellar ataxia. *J. Neurol. Neurosurg. Psychiat.* 56: 1038-1039, 1993.
15. **Brown, S.H.**, Kessler, K., Hefter, H., Cooke, J.D., Freund, H.-J. Role of the cerebellum in visuomotor coordination I. Delayed eye and arm initiation in patients with mild cerebellar ataxia. *Exp. Brain Res.* 94: 478-488, 1993.
16. Cooke, J.D., **Brown, S.H.** Movement-related phasic muscle activation: III. Control of the duration of phasic agonist activity. *Exp. Brain Res.* 99: 473-482, 1994.
17. Virji-Babul, N., Cooke, J.D., **Brown, S.H.** Effects of gravitational forces on single joint arm movements in humans. *Exp. Brain Res.* 99: 338-346, 1994.
18. Cooke, J.D., Hefter, H., **Brown, S.H.**, Toyka, K., Freund, H.-J. Kinematic and EMG analysis of motor dysfunction associated with Lambert-Eaton Syndrome. *Electromyogr. Clin. Neurophysiol.* 34: 87-93, 1994.
19. **Brown, S.H.** Kinematics of arm movements in the elderly. *in Advances in Psychology*, Teasdale, N. and Ferrandez, A.-M. (eds). Elsevier, pg. 27-52, 1996.
20. Hefter, H., **Brown, S.H.**, Cooke, J.D., Freund, H.-J. Basal ganglia and cerebellar impairment differentially affect the amplitude and time scaling during the performance of forearm step tracking movements. *Electromyogr. Clin. Neurophysiol.* 36: 1-8, 1996.

*undergraduate student, **graduate student:

21. Thaut, M.H., **Brown, S.H.**, Benjamin, J.** , Cooke, J.D. Rhythmic facilitation of movement sequencing: effects on spatiotemporal control and sensory modality dependence. *MusicMedicine*, 2: 104-113, 1996.
22. Thaut, M.H., **Brown, S.H.**, McIntosh, G., Rice, R. Effects of rhythmic auditory cueing on gait characteristics in Parkinson's patients. *J. Neurol. Neurosurg. Psychiat.* 36:47-54, 1996.
23. Hefter, H., Cooke, J.D., **Brown, S.H.**, Weiss, P., Kuhlman, H., Freund, H.-J. Kinematic properties of upper limb movement trajectories. in *Instrumental Methods and Scoring in Diagnosis and Quantification of Extrapyrarnidal Disorders*. Pryzuntek, T., Korzin, Kraus (eds). Springer-Verlag, 1996.
24. Ramos, E., Latash, M., Hurvitz, E., **Brown, S.H.** Assessment of reaching movements in children with ataxia using kinematic analysis techniques. *Arch. Phys. Med. Rehab.* 78: 491-496, 1997.
25. Hurvitz, E.A., Flansburg, E.L.** , Conti, G.E.** , **Brown, S.H.** The use of motor control testing to evaluate response to Botulinum toxin injections in the upper extremity. *Arch Phys. Med. Rehab.* 79: 1177-, 1998.
26. Hurvitz, E.A., Conti, G.E.** , Flansburg, E.L.** , **Brown, S.H.** Quantitative evaluation of upper limb function following Botulinum toxin injection: a case report. *Arch. Phys. Med. Rehab* 81: 1408-1415, 2000.
27. Hurvitz, E.A., Conti, G.E.** , **Brown, S.H.** Changes in movement characteristics of the spastic upper following Botulinum toxin injection. *Arch Phys. Med. Rehab.* 84: 444-451, 2003.
28. Goble, D.J.** , Lewis, C.A., Hurvitz, E., **Brown, S.H.** Development of upper limb proprioceptive accuracy in children and adolescents. *Human Mov Sci.* 24: 155-170, 2005.
29. Goble, D.J.** , Lewis, C.A., **Brown, S.H.** Upper limb asymmetries in the accuracy of proprioceptively-guided limb movements. *Exp. Brain Res* 168: 307-311, 2006.
30. Adamo, D.A.** , Martin, B.J. **Brown, S.H.** Age-related differences in upper limb proprioceptive acuity. *Percept Mot Skills* 104: 1297-1309, 2007
31. Goble, D.J.** , **Brown, S.H.** Task-dependent asymmetries in the utilization of proprioceptive feedback for goal-directed movement. *Exp. Brain Res.* 180 (4): 693-704, 2007
32. Goble, D.J.** , Brown, S.H. The biological and behavioural basis of upper limb asymmetries in sensorimotor performance. *Neurosci. Biobehav. Rev.* 32(3): 598-610, 2008
33. Goble, D.J.** , Brown, S.H. Upper limb asymmetries in the matching of proprioceptive versus visual targets. *J. Neurophysiol.* 99 (6): 3063-3074, 2008
34. Goble, D.J.** , **Brown, S.H.** Reply to Dr. Derakhshan. *J. Neurophysiol.* 100: 3459, 2008
35. Goble, S.H.** , **Brown, S.H.** Dynamic proprioceptive target matching behaviour in the upper limb: Task difficulty and arm/hemisphere asymmetries. *Behav Brain Res.* 200(1): 7-14, 2009
36. Adamo, D.A.** , Alexander, N.B., **Brown, S.H.** The influence of age and physical activity on the ability to perform proprioceptively- guided movements. *J. Aging Physical Activity* 17: 273-292, 2009
37. Goble, D.J.** , Hurvitz, E.A, **Brown, S.H.** Deficits in the ability to use proprioceptive feedback in children with hemiplegic cerebral palsy. *Int. J. Rehab* 32(3): 267-269, 2009
38. Goble, D.J.** , Noble, B.C.* , **Brown, S.H.** Proprioceptive target matching asymmetries in left-handed individuals. *Exp. Brain Res* 194(4): 403-408, 2009

39. Shafir, T.** , **Brown, S.H.** Timing and the control of rhythmic arm movements J. Mot Behav, 42: 71-84, 2010
40. **Brown, S.H.**, Lewis, C.A., McCarthy, J.M.* , Doyle, S.T.* , Hurvitz, E.A. The effects of internet-based home training on upper limb function in adults with cerebral palsy. Neurorehab Neural Repair, 6: 575-583, 2010
41. Goble, D.J.** , **Brown, S.H.** Upper limb asymmetries in the proprioceptively-guided matching of dynamic position. J. Exp. Psych – Human Perception Performance. 36 (3) 768-775, 2010
42. Goble, D.J.** , Noble, B.C.* , **Brown, S.H.** Where is my arm again? Memory-based matching of proprioceptive targets is enhanced by increased target presentation time. Neurosci Letters 481(1) 54-58, 2010
43. Hurvitz, E.A., **Brown, S.H.** The terms diplegia, quadriplegia and hemiplegia should be phased out. Dev. Med. Child Neurol. 52(11) 1070, 2010
44. Langan, J., Doyle, S.T.* , Hurvitz, E.A., **Brown, S.H.** Influence of task on interlimb coordination in adults with cerebral palsy. Arch Phys Med Rehab 91(10) 1571-1576, 2010
45. **Brown, SH**, Langan, J, Kern, K.L., Hurvitz, E.A. Remote monitoring and quantification of upper limb and hand function in chronic disability conditions, Int. J. Disabil Human Dev 10 (4), 2011
46. Wright, M.L.** , Adamo, DE** , **Brown, S.H.** Age-related declines in the detection of passive movement. Neurosci Letters, 500 (2) 108-112, 2011
47. Goble, D. J.** Mousigian, M.* , **Brown, S.H.** Compromised encoding of proprioceptively determined joint angles in older adults: The role of working memory and attentional load. Exp Brain Res 216 (1) 35-40, 2012
48. Langan, J., DeLave, K.* , Phillips, L.* , Pangilinan, P., **Brown, SH.** Home-based telerehabilitation leads to improved upper limb function in adults with chronic stroke J. Rehab Med 45 (2), 217-220, 2013
49. Huang, M.** , **Brown, S.H.** Limb-posture coordination during reaching from standing in elderly subjects Gait and Posture 38 (4), 837-842, 2013
50. **Brown, S.H.**, Noble, B.C.* , Yang, L., Nelson, V.S. Deficits in elbow position sense in neonatal brachial plexus palsy. Ped Neurol 49 (5) 324-328. 2013
51. Langan, J., Kern, K.L., Hurvitz, E.A, **Brown, S.H.** Upper limb position sense deficits in adults with cerebral palsy.. Am. J. Phys. Med. Rehab 93 (9), 774-781, 2014
52. Schaap, T.S ** , Gonzales, T. ** , Janssen, T.W.J., **Brown, S.H.** Proprioceptively-Guided Reaching Movements in 3D Space: Effects of Age, Task Complexity and Handedness Exp. Brain Res 233(2), 631-639, 2015
53. **Brown, S.H.**, Napier, R.* , Yang, L.J.S., Nelson, V.S. Home-based movement therapy in neonatal brachial plexus palsy J Hand Therapy 28, 307-313, 2015
54. Huang, M.H.** , **Brown, S.H.** Effects of task context during standing reach on postural control in young and older adults: A pilot study. Gait and Posture 41(1), 276-281, 2015
55. **Brown, S. H.**, Wernimont, C.W., Phillips, L.J.* , Kern, K.L., Yang, L. J-S., Nelson, V.S Hand sensorimotor function in older children with neonatal brachial plexus palsy. Ped Neurol 56, 42-47, 2016 (epub: Dec 2015)

MANUSCRIPTS UNDER REVIEW:

1. Gonzales, T. I.**, Rasmussen, L., Yang, L. J.-S., **Brown, S.H.** Postural deficits in adult brachial plexus palsy. (J. Rehab Med)
2. Smith, D., Chesney, D, Justice, D., Rasmussen, L., Chang, K., Nelson, V., **Brown, S.**, Yang, L. Motion tracking video game increases therapy time for children and adolescents with neonatal brachial plexus palsy. (Am J Phys Med Rehab, under revision)

MANUSCRIPTS IN PREPARATION:

1. Aaron, M.*, Bery, A. *, **Brown, S.H.** Influence of menstrual cycle phase on upper limb position sense. (Exp. Brain Res).
2. Marken, P., Albert, P., Eidy, M., Schermer, W., Caminita, M., Buratovich, M., **Brown, S.** A reevaluation of the Jebsen Hand Function Test norms in 8-12 yr and 16-20 yr olds (Child Neurol Dev Med)
3. Phillips, L.* , Smith, D., Chesney, D, Justice, D., Rasmussen, L., Chang, K., Nelson, V., Yang, L., **Brown, S.** Motion tracking video game improves arm reaching ability in children and adolescents with neonatal brachial plexus palsy (Am J Phys Med Rehab)
4. Kern, K.L., Loubert, M., Mousigian, M., **Brown, S.H.** Home training improves perception of grip force in older adults.
5. Hibino, H., **Brown, S.H.**, Huang, M. Effects of postural configuration on hand somatosensory function in young and older adults.
6. Schweiger, E*, **Brown, S.H.** Upper limb proprioceptive acuity in elite performers: A comparative study in modern and Irish dancers. (Behav. Brain Res)
7. Phillips, L., Nelson, V., Yang, L., **Brown, S.H.** Bilateral coordination in children and adolescents with neonatal brachial plexus palsy.
8. **Brown, S.H.** Effects of short term immobilization on upper limb position sense.

*indicates undergraduate student

** indicates current or former graduate student

MEDIA:

Brain Sense: The Science of the Senses and How We Process the World Around Us by Faith Brynie 2009 Chapter 3: On which side is your bread buttered, pg 15-20 Chapter focused on proprioception research <http://www.scribd.com/doc/24645054/Brain-Sense>

Dancers kick up new theories about mobility *By Laura Bailey University of Michigan News Service* http://www.ur.umich.edu/0910/Oct19_09/20.php

University of Michigan News Service: 21st century treatment proves successful for adults living with cerebral palsy <http://ns.umich.edu/htdocs/releases/story.php?id=7626> 2011

Out of the Blue Video (OVP for Communications Office) Episode 302 ULTrA <http://www.ootb.tv/episode.php?episode=302&part=3&video=ULTrA> 11/2011

CONFERENCE ABSTRACTS 2002- current (*indicates undergraduate student, ** graduate student):

1. Liberzon, T**, Brown, S.H. Impulse variability during multi-joint rhythmic arm movements. Proc. Soc. Neurosci. 28: 767.1, 2002
2. Huang, M**, Brown, S.H. Sensory Facilitation of Movement Reversals in Parkinson's Disease. Proc. Soc. Neurosci. 28:566.2, 2002
3. Adamo, D.E**, Martin, B.J., Brown, S.H.. Proprioceptive acuity in young and elderly adults. Proc Soc. Neurosci. 29: 7315.15, 2003
4. Conti, G.E**, Brown, S.H. Grasp force modulation during bimanual tasks in young and elderly adults. Proc. Soc. Neurosci. 29: 2003
5. Goble, D.J**, Conti, G.E**, Samczyk, N.L*, Hurvitz, E., Nelson, V.S., Brown, S.H. Bilateral upper limb coordination in children with brachial plexus injury. Proc. Soc. Neurosci. 29: 71.8, 2003
6. Huang, M**, Huang, S*, Brown, S.H. Effects of auditory cueing on sequential reach and grasp movements in elderly and Parkinson's Disease subjects. Proc. Soc. Neurosci. 29: 71.15, 2003
7. Larson, C.A**, Brown, S.H. Postural tremor in persons with essential tremor. APTA conference, 2004
8. Goble, D.J**, Chesney, J.D.*, Lewis, C.A., Brown, S.H. Limb asymmetries during passive but not active proprioceptive matching. Proc. Soc. Neurosci. 30: 871.14, 2004.
9. Lewis, C.A., Goble, D.J**, Hurvitz, E.A., Brown, S.H. Proprioceptive acuity in children with mild spastic hemiparesis. Proc. Soc. Neurosci. 30: 181.7, 2004.
10. Adamo, D.E**, Brown, S.H. Ipsilateral and contralateral matching of isometric grip force. Proc. Soc. Neurosci. 30: 653.11, 2004.
11. Huang, M**, Penfold, M.M.*, Brown, S.H. Coordination of center of pressure excursion and hand path during sequential reaching in young and elderly subjects. Proc. Soc. Neurosci. 30: 873.3, 2004
12. Adamo, D.E**, Brown, S.H. Upper Limb Proprioceptive Acuity in the Elderly: The Effects of Physical Activity and Hand Preference, Proc. Gerontological Society of America, 2005
13. Brown, SH., Hurvitz, EA, Conti, GE**, Samczyk, NL* Improvement in Upper Limb Function in Children with Hemiplegic Cerebral Palsy Following a Six-Week Motor Training Intervention. AAPMR Meeting 2005 **(invited podium presentation)**
14. Brown, SH, Hurvitz,EA, Conti,GE**, Samczyk, NL* Effects of Task-Based Training on Upper Limb Function in Hemiplegic Cerebral Palsy. American Congress of Rehabilitation Medicine 2005 **(invited podium presentation)**
15. Goble, DJ** Brown, SH Enhanced Limb Asymmetries during Active versus Passive Proprioceptive target Matching. Neural Control of Movement Conference, 2005
16. Goble, DJ**, Brown, SH Limb Specific Differences in the Ability to Utilize Active versus Passive Proprioceptive Target Information. Progress in Motor Control Conference, 2005
17. Goble, DJ**, Hurvitz, EA, Nelson, VS, Brown, SH Bilateral Facilitation of Upper Limb Movements in Children with Congenital Brachial Plexus Palsy. American Academy of Physical Medicine and Rehabilitation (AAPMR) 2005 **(invited podium presentation)**
18. Goble, DJ**, Priebe, J*, Brown, SH The Effects of Start Position on the Accuracy of Proprioceptively Guided Movements Proc. Soc. Neurosci: 31: 2005
19. Lewis, CA, Goble, DJ**, Hurvitz, EA, Brown, SH Proprioceptive Acuity and Multi-joint Coordination in Hemiplegic Cerebral Palsy. American Congress Rehabilitation Medicine 2005
20. Lewis, CA, Goble, DJ**, Hurvitz, EA, Brown, SH Sensorimotor Coordination in Children with Hemiplegic Cerebral Palsy. AAPMR 2005
21. Lewis, CA, Hurvitz, EA, Brown, SH. Assessment of Upper Limb Function in Adults with Hemiplegic Cerebral Palsy American Academy of Cerebral Palsy and Developmental Medicine 2006
23. Adamo, DA**, Alexander, N., Brown, SH. Grasp Force Control in the Elderly: Effects of Physical Activity and Handedness. Proc. Gerontol. Society of America, 2006
24. Adamo, DA**, Alexander, N., Brown, SH. The Influence of Age, Physical Activity and Hand Preference on the Ability to Utilize Force Feedback, Proc. Soc Neurosci. 32: 2006
25. Goble, DJ**, Brown, SH. Asymmetries in the Accuracy of Matching Visual versus Proprioceptively-Determined Target Arm Positions. Proc Soc. Neurosci. 32: 2006 **(selected for International Press Book release)**

26. Waechter, C*, Adamo, D**. Brown, SH. Assessment of Sensorimotor Performance in the Elderly Using Clinical and Experimental Methods. Proc. Soc. Neurosci. 32: 2006
27. Seo, N.** , Brown, SH. Scaling of Safety Margins During Isometric Push Force Tasks. Proc. Soc. Neurosci. 32: 2006.
28. Lewis, CA, Hurvitz, EA, Brown, SH. Kinematic Analysis of Upper Limb Function in Adults with Hemiplegic Cerebral Palsy. Proc. International Federation of Adapted Physical Activity 2006.
29. Brown, SH, Lewis, CA, Turk, P, Hurvitz,EA. Adults with Cerebral Palsy: Health, Fitness and Motor Function. Instructional Course for American Academy of Cerebral Palsy and Developmental Medicine annual conference 2007
30. Adamo, DE*, Brown, SH The influence of age and task demands on the ability to utilize proprioceptive feedback in right hand dominant individuals. Progress in Motor Control Conference 2007
31. Goble, DJ., Brown, SH. Non-preferred Arm Advantages in the Coordination of Static and Dynamic Proprioceptive Feedback. Progress in Motor Control Conference 2007
32. McCarthy, J. M.*, Lewis, C.A., Brown, S.H. Improvement in Sensorimotor Function in Adult Cerebral Palsy Using a Computer-Based Home Training Program (Project ULTrA). Progress in Motor Control Conference 2007
33. Wright, ML,** Adamo, DE,** Brown, SH. Age-Related Declines in the Perception of Upper Limb Movement and Grasp Force. Progress in Motor Control Conference 2007
34. Adamo, DE,** Brown, SH. The Influence of Age, Physical Activity and Hand Preference on the Ability to use Position and Force Feedback. Festival of International Conferences on Caregiving, Disability, Aging and Technology, Toronto, CA 2007
35. Goble, DJ,** Brown, SH. Movement accuracy during the matching of dynamic proprioceptive feedback. Proc Soc. Neurosci. 33: 2007
36. Brown, SH, Goble, DJ,** Hurvitz, EA Hemispheric Asymmetries in the Ability to Utilize Position-Related Proprioceptive Feedback in Hemiplegic Cerebral Palsy. Neural Control of Movement Conference 2008
37. Brown, S, Lewis, C, McCarthy, J,* Hurvitz, E Improvement in Arm and Hand Function in Adults with Hemiplegic Cerebral Palsy using Internet-based Home Training (Project ULTrA). Am Acad Cereb Palsy Dev Med (oral presentation) Dev Med Child Neurol 15:s4, 17 2008
38. Brown, SH, Hurvitz, EA Improved Upper Limb Function in Adults with Cerebral Palsy Using Internet-Based Home Training Am Acad Phys Med Rehab 69: 2008
39. Brown, SH, Lewis, CA, McCarthy*, JM, Hurvitz, EA Improved upper limb function in cerebral palsy using internet-based home training. European Congress on Physical and Rehabilitation Medicine (oral presentation) 2008
40. Brown, Hurvitz, EA. Improved Reaching and Hand Manipulation Skills in Adults with Cerebral Palsy Using an Internet-Based Home Training Program. Am Congress Rehab Med (oral presentation) Arch Phys Med Rehab 89 (11) e113 2008
41. Wright, M**, Mousigian, MM*, Kime, K*., Brown, SH. Home sensorimotor training improves hand function in older adults. Am Congress Rehab Med 2008
42. Goble,DJ**, Noble, BC*, Brown, SH. Non-preferred arm dominance for proprioceptive matching in left-handers. Soc. Neurosci 34:2008
43. Huang, M**, Mousigian, MA*, Brown, SH. Effects of age and target height on dynamic balance control during reaching. Soc. Neurosci 34: 2008
44. Wright, M**, Schweiger, E*., Brown, SH. Interlimb coordination during sequential bimanual tasks. Soc. Neurosci 34: 2008
45. Langan, J., Doyle, ST*., Lewis, CA., Hurvitz, EA, Brown, SH. Interlimb coordination in adults with cerebral palsy. AACPDM 2009 submitted
46. Brown, SH., Doyle, ST*, Kern, KL*, Lewis, CA, Hurvitz, EA. Internet-based home training to improve upper limb coordination in adults with cerebral palsy. Soc. Neuroscience 2009
47. Langan, J., Brown, SH. Cognitive loading during reach from standing tasks in adults with cerebral palsy. Soc. Neurosci 2009
48. Schweiger, E*., Brown, SH. Upper limb position awareness in elite dancers: Differential effects related to type of dance skill. Soc. Neurosci 2009 (**selected for International Press Book release**)

49. Noble, B*, Goble, D.** , Brown, SH. Kinematics of proprioceptively-guided movements: effects of reference position hold time. Soc. Neurosci 2009
50. Wright, ML** ,Brown, SH. Age-related changes in the ability to perform sequential bilateral tasks. Soc. Neurosci 2009
51. Langan, J., Kern, K.** , Hurvitz, E., Brown, SH. Improvement in proprioceptive function following upper limb sensorimotor training. Amer Congress Rehab Medicine 2010
52. Brown, S.H., Langan, J., Kern, K.L.** , Hurvitz, E.A. Remote monitoring and quantification of upper limb and hand function in chronic disability conditions. 8th Int Conf Disability, Virtual Reality and Assoc Tech 2010 (session chair)
53. Langan, J., Kern, KL** , Hurvitz, EA, Brown, SH. Improved tactile and limb position sense in adults with cerebral palsy following upper limb sensorimotor training. Soc. Neurosci 2010
54. Brown, S.H., Schweiger, E*. Interdependence of object weight and stability on the timing of bimanual reach and grasp tasks. Soc. Neurosci. 2010
55. Napier, R., Langan, J., Brown, S. An upper limb telerehabilitation program in chronic stroke. Amer Heart Assoc Celebration of Science Southeast Michigan 2011
56. Brown, S.H., Noble, B.C.* , Yang, L.J.S., Nelson, V.S. Deficits in Elbow Position Sense in Neonatal Brachial Plexus Palsy. 17th International Conference on Brachial Plexus Surgery, May 2011
57. Langan, J.M., Brown, S.H. An Upper Limb Telerehabilitation Program in Chronic Stroke. Am. Congress Rehab Med. Oct 2011
58. Goble, D.J., Aaron, M.* , Hurvitz, E., Brown, S.H. The effects of target duration on memory-based elbow joint position matching in individuals with cerebral palsy. Soc. Neurosci. 2011
59. Cohen, J.* , Brown, S.H. Upper limb telerehabilitation program for chronic stroke. Soc. Neurosci. 2011
60. Gonzales, T., Aaron, M.B.* , Brown, S.H., Henriques, D.Y.P., Goble, D.J. Can agonist/antagonist tendon vibration be used as a proxy for proprioceptive noise at the elbow joint? Proc Soc. Neurosci 581.09, 2012
61. DeLave, K.A.* , Langan, J.M., Kern, K.L., Brown, S.H. The effects of task and skill on sequentially produced grasp forces. Proc. Soc. Neurosci. 888.21, 2012
62. Wernimont, C.W.* , Phillips, L.J.* , Kern, K.L., Yang, L. J-S., Nelson, V.S, Brown, S.H. Somatosensory deficits in children with neonatal brachial plexus palsy. Amer Academy Psychiatry March 2013
63. Phillips, L.* , Wernimont, C.* , Kern, K.L., Nelson, V., Yang, L., Brown, S.H. Somatosensory deficits in neonatal brachial plexus palsy. American Academy Cerebral Palsy Developmental Medicine (Oct 2013)
64. Brown, S. H., Nelson, V.S., Yang, L. J-S. Somatosensory deficits in children with neonatal brachial plexus palsy. Narakas 2013 Brachial Plexus Surgery International Symposium, Montreux, Switzerland, (May 2013)
65. Aaron, M.B.* , Bery, A.L.* , Kern, K.L., Brown, S.H. Effects of menstrual cycle phase on upper limb position sense in young women. Proc Soc. Neurosci 2013
66. Gonzales, T.** , Schaap, T., Brown, S.H. The effects of aging on proprioceptively-guided reaching movements in three dimensional space. Proc Soc Neurosci 250.10, 2014
67. Eidy, M.* , Marken, P., Albert, P., Schermer, W., Burotovich, M., Brown, S.H. Maturation of tactile acuity in typically developing children. Proc Soc Neurosci 340.08, 2014
68. Kern, K., Brown, S.H. Training-related improvements in hand force perception in older adults. Proc. Soc. Neurosci 72.02, 2014
69. Hibino, H., Brown, S.H., Huang, M. Effects of postural configuration on tactile perception tasks in older adults. Proc Soc. Neurosci 340.04, 2014
70. Caminita, M., Hibino, H., Kern, K., Huang, M., Brown, SH. Effects of bilateral reach tasks on postural control in older adults. Proc. Soc. Neurosci. 2015
71. Hibino, H., Carlson, R., Brown, S.H. The effects of dual tasking on bimanual grip force control in older adults. Proc. Soc. Neurosci. 2015
72. Schermer, W., Caminita, M., Brown, S.H. Maturation of grip force control in older children and adolescents. Proc. Soc. Neurosci. 2015

INVITED LECTURES (last five years):

- 2006 Kinematic Analysis of Bilateral Coordination in Children with Congenital Brachial Plexus Palsy. Dept. of Physical Medicine and Rehabilitation, Univ. Michigan Medical Center, April 2006
- Effects of Aging, Hand Preference, and Physical Activity on Proprioceptive Ability. Beijing Sport University, May 2006
- 2007 Sensorimotor Training in Adults with Hemiplegic Cerebral Palsy – The ULTrA Project. Dept. of Physical Therapy and Rehabilitation. Univ. California San Francisco, March 2007
- The Science of Goal-Directed Movements: From Theory to Practice. Dept. of Physical Medicine and Rehabilitation, Univ. Michigan, April 2007
- 2008 Improved Upper Limb Coordination Using Internet-based Sensorimotor Training. Dept. of Physical Medicine and Rehabilitation, Univ. Ghent, Belgium, June 2008
- Changes in Proprioceptive Function with Aging. Dept. of Kinesiology and Rehabilitation Science. Univ. Leuven, Belgium, June 2008.
- Asymmetries in Upper Limb Proprioceptive Ability. Dept. of Kinesiology, Arizona State University October 2008
- 2009 Putting Therapy into the Home - Internet-Based Movement Training to Improve Upper Limb Function in Adults with Cerebral Palsy Rush University Forum for Research and Clinical Investigation key note presentation. Chicago April 2009
- Hand Somatosensory and Motor Function in Older Adults – Implications for Rehabilitation, College of Health Professions, Rush University, Chicago April 2009
- Improved Upper Limb Function in Adults with Hemiplegic Cerebral Palsy Following a Home Training Program. Industrial Operations Engineering, Univ. Michigan Nov 10, 2009
- Use of the Internet to Monitor Upper Limb and Hand Rehabilitation. Physical Medicine and Rehabilitation, Univ. of Michigan Grand Rounds, Nov 12, 2009
- 2010 A Telerehabilitation Program to Improve Upper Limb Function in Adults with Cerebral Palsy James Rae Annual Research Day, Physical Medicine and Rehabilitation, Univ. of Michigan. May, 2010
- Remote monitoring and quantification of upper limb and hand function in chronic disability conditions. 8th Int. Conf Rehabilitation, Virtual Reality and Associated Technologies. Vina del Mar, Chile Sept, 2010
- 2012 Effectiveness of telerehabilitation to improve upper limb function in chronic stroke. UM Vascular Neurology Faculty Lecture Series December 2012
- 2014 Training and Assessment of Upper Limb Function: Use It or Lose It! Dept. of Physical Medicine and Rehabilitation, University of Michigan, Feb 2014
- Deficits in Proprioceptive and Tactile Acuity in Brachial Plexus Palsy. The American Society of Neurophysiologic Monitoring Regional Symposium, Ann Arbor, MI Sept 2014

- 2015 Sensorimotor Deficits in Neonatal Brachial Plexus Palsy. The Sunderland Society Annual Conference, Ann Arbor, MI June 2015
- Sensation is Important for Quality of Life. Congress of Neurological Surgeons, New Orleans, LA Sept 2015

INVITED WORKSHOPS/INSTRUCTIONAL COURSES:

- 1997 A New Look at the Upper Extremity: Qualitative and Quantitative Evaluation American Academy of Physical Medicine and Rehabilitation Physical Medicine Annual Assembly, Atlanta, Georgia
- 1997 Trends in Motor Control Research and their Application to Rehabilitation. Washtenaw County Occupational and Physical Therapy Group, (continuing medical education program)
- 1998 Stability and Instability in the Assessment of Upper Limb Movements. Dynamic Systems Theory: Research in Rehabilitation Workshop. American Congress of Rehabilitation Medicine, Seattle, Washington
- 2002 Role of Exercise in Parkinson's Disease. Turner Geriatrics Center, UM Hospital, May,
- 2002 Role of Sensory Cueing and Exercise in Parkinson's Disease. Maritime Chapter of the National Parkinson's Disease Association, Fredericton, Canada. November, 2002
- 2006-2007 NIH Task Force on Childhood Motor Disorders: "Clinical Measurement of Negative Motor Symptoms in Children" March 4-5, Stanford University, California
- 2015 Managing Research in a Multidisciplinary Clinic: Development of a Research Team Comprising Routine Health Care Providers and Collaborators, Submitted to American Academy of Cerebral Palsy and Developmental Medicine October 21=24th Austin, TX (submitted)
- Novel method to quantify tactile discrimination ability.
Congress of Neurological Surgeons Neuro-vation Symposium Invited Speaker
Sept 26-30th, New Orleans, LA confirmed

TEACHING:

- 1993-1994 Movement Science (MVS) 421 (3 cr) - Disorders of Voluntary Movement (developed as a new upper level elective course) (F 93) (15 students)
MVS 320 (4 cr) - Motor Control (extensively revised and expanded with an emphasis on neurophysiological mechanisms underlying human movement- one of three required core courses in the MVS program) (W94) (45 students)
MVS 488 (2-3 cr) Independent Laboratory Study in Motor Control (F/W 93/94) (2 students/semester)
- 1994-1995 MVS 305 (3 cr) - Motor Control and Biomechanics of Human Aging (developed as new course with Dr. M. Gross) (F 94) (28 students)
MVS 320 (F94, W95) (55 students)

	<p><u>MVS 421</u> (W95) (47 students) <u>MVS 488</u> (F/W 94/95) (3 students/semester) <u>KIN 610</u> <i>Topics in Kinesiology</i> (quest lecturer)</p>
1995-1996	<p><u>MVS 110</u> (3 cr) - <i>Physiological and Psychological Bases of Human Movement</i> (extensively revised and re-structured for team teaching (motor control, biomechanics, exercise physiology, responsible for complete revision of motor control module and coordinating new teaching materials for all three modules) (F95) (35 students) <u>MVS 521</u> (3 cr) - <i>Visuomotor Coordination</i> (developed as a new course) (F95) (14 students) <u>MVS 320</u> (W96) (53 students) <u>MVS 305</u> (W96) (44 students) <u>MVS 490</u> <i>Honors Undergraduate Thesis</i> (5 cr) (F/W 95/96) (2 students/semester) <u>MVS 429</u> (3 cr) <i>Laboratory Experience and Seminar in Motor Control - MVS seniors</i> (F/W 96/97) (3 students/semester) <u>MVS 488</u> (F/W 95/96) (2 students/semester)</p>
1996-1997	<p><u>MVS 110</u> (F96) (42 students) <u>MVS 421</u> (F96) (39 students) <u>MVS 490</u> <i>Honors thesis</i> (F/W 96/97) (2 students/semester) <u>MVS 429</u> (F/W 96/97) (4 students/semester) <u>MVS 488</u> (F/W 96/97) (2 students/semester) mentor and supervisor- UM Summer Research Opportunity Program grant awarded to E. Reed (full time - spring/summer)</p>
1997-1998	<p><u>MVS 320</u> (F97) (45 students) <u>MVS 421</u> (W98) (40 students) <u>MVS 490</u> <i>Honors thesis</i> (F/W 97/98) (2 students/semester) <u>MVS 429</u> (F/W 97/98) (3 students/semester) <u>MVS 305</u> (guest lecturer) <u>KIN 610</u> (guest lecturer) <u>IOE 591</u> (guest lecturer)</p>
1998-1999	<p><u>MVS 320</u> (F98) (50 students) <u>MVS 421</u> (W99) (42 students) <u>KIN 520</u> (W99) (7 students) <u>MVS 490</u> <i>Honors thesis</i> (F/W 98/99) (3 students/semester) <u>MVS 429</u> (F/W 98/99) (3 students/semester) <u>MVS 488</u> (F/W 98/99) (2 students/semester)</p>
1999-2000	<p><u>MVS 320</u> (F99) (46 students) <u>MVS 490</u> <i>Honors thesis</i> (F/W 99/00) (2 students/semester) <u>MVS 429</u> (F/W 99/00) (3 students/semester) <u>MVS 320</u> (W00) (46 students) <u>MVS 421</u> (W00) (35 students)</p>
2000-2001	<p><u>MVS 320</u> (F00) (33 students) <u>MVS 429</u> (F00) (12 students) <u>MVS 490</u> <i>Honors thesis</i> (F/W 00-01) (3 students/semester) <u>KIN 520</u> (F00) (8 students) <u>MVS 421</u> (W01) (38 students)</p>
2001-2002	<p><u>MVS 320</u> (F01) (40 students) <u>MVS 429</u> (F01) (12 students) <u>MVS 320</u> (W02) (40 students)</p>

	<u>MVS 421</u> (W02) (19 students)
2002-2003	Gerontol 3673 (F02) (28 students) (St Thomas University) MVS 421 (W03) (38 students) Independent study students (3)
2003-2004	MVS 320 (F03) (36 students) MVS 421 (W04) (48 students) Independent study students (8)
2004-2005	MVS 320 (F04) (39 students) MVS 421 (W05) (30 students) Independent study students (9)
2005-2006	MVS 320 (F05) (30 students) MVS 421 (W06) (19 students) Independent study students (8)
2006-2007	MVS 320 (F06) R580 (F06) Topics in Disabilities Studies Independent study students (5)
2007-2008	MVS 320 (F07) (43 students) KIN 520 Graduate Seminar – Topics in Motor Control/Grant Writing (F07) (12 students) MVS 320 (W08) (68 students) MVS 421 (22 students) Independent study students (9)
2008-2009	MVS 320 (F08) (61 students) MVS 424 Sensorimotor Changes with Aging (22 students) MVS 320 (W09) (67 students) MVS 421 (W09) (38 students) Independent study students (8) MVS 490/491 Research honors (1)
2009-2010	MVS 320 (F09) (70 students) MVS 320 (W10) (69 students) MVS 421 (W10) (45 students) Independent study students (7) MVS 490/491 Research honors (1)
2010-2011	MVS 421 (F10) (15 students) MVS 320 (W11) (60 students) MVS 421 (W11) (49 students) Independent study students (8) MVS 490/491 Research honors (1)
2011-2012	MVS 421 (F11) (18 students) MVS 320 (W12) (65 students) MVS 421 (W12) (43 students) Independent study students (8) MVS 490/491 Research honors (2)
2012-2013	MVS 320 (F12) (66 students) MVS 320 (W13) (86 students) MVS 421 (W13) (29 students)

	Independent study students F12 (9), W13 (12) MVS 490/491 honors thesis (1)
2013-2014	MVS 320 (F13) (80 students) MVS 421 (F13) (26 students) Independent study students F13 (9) MVS 490/491 honors thesis (2)
2014-2015	MVS 320 (F14) 62 students MVS 421 (F14) 20 students MVS 421 (W15) 25 students MVS 424 (W15) 16 students
2015-2016	MVS 320 (F15) 81 students MVS 421 (F15) 19 students MVS 421 (W16) 42 students KIN 615 (W16) 14 students

GRADUATE STUDENT TRAINING:

Primary Advisor:

Univ. Duesseldorf:

1989-1994	M. Mertens, (Doctoral co-advisor), Dept. of Neurology, Univ. Duesseldorf <i>Disturbances in movement trajectory due to cerebellar dysfunction</i> K. Kessler (Doctoral co-advisor), Dept. of Neurology, Univ. Duesseldorf <i>Eye-arm coordination in cerebellar patients.</i>
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University of Western Ontario:

1991-1993	N. Virji-Babul (M.Sc. co-advisor), Program in Neuroscience, Univ. Western Ontario <i>Effects of gravitational loads on muscle activation patterns</i>
-----------	--

Masters Thesis Advisor- University of Michigan:

1993-1994	J. Benjamin, Kinesiology, UM <i>Effects of sensory cueing on movement accuracy: gender differences</i>
1996-1998	E. Flansburg, Kinesiology, UM <i>Sensory control of bimanual coordination</i>
1997- 1999	Kuang-You Cheng, Kinesiology, UM <i>Influence of tonic neck reflexes on upper limb kinematics and EMG patterns during rhythmic voluntary movements</i>
2000-2001	Amy Campbell, Kinesiology, UM <i>Motor coordination in high functioning Autism</i>
2007- 2008	Sadie Wilcox, Art and Design, UM
2010-2012	Kathy Kern, Kinesiology, UM
2013-2014	Hidetaka Hibino, Kinesiology, UM <i>Assessment of postural control during the performance of hand manipulation tasks</i>

Masters - other

2005 Karen Healy, BPT, University College, London, England
2009 Tilaka Schaap, BPT, Free University of Amsterdam, Netherlands

Doctoral – UM (chair, co-chair)

1998 Donna Fry-Welch (PhD co-chair), Kinesiology, UM
Training Effects on Proprioceptive Acuity
Current position: Director, Program in Physical Therapy, Univ. Michigan - Flint

1995-2007 G. Conti, Kinesiology, UM (chair) part-time
Effects of aging on bimanual force control
Current: Assistant Professor, Occupational Therapy, Wayne State University

1996 - 2003 T. Liberzon, Kinesiology, UM (chair)
Role of auditory cueing in the performance of rhythmic arm movements
Current: Research Fellow, University of Michigan

1997 -2002 Cathy Larson, Kinesiology, UM (chair)
Arm reaching clearance tasks in patients with essential tremor
Current: Senior physical therapist, Rehabilitation Institute of Michigan

1998-2002 Cengiz Yakut, Kinesiology, UM (co-chair)
Current: Assoc Professor, Lock Haven University of Pennsylvania

2000- 2009 Min Huang, Kinesiology, UM (chair) part-time
Limb-posture coordination in elderly individuals
Current: Assistant Professor, Program in Physical Therapy, Univ. Michigan - Flint

2002-2007 Dann Goble (chair)
Upper Limb Asymmetries in the Utilization of Sensory Feedback for Goal-directed Movement
Current: Research Fellow, Univ. Leuven, Belgium

2002-2007 Diane Adamo (chair)
Age-Related Changes in Upper Limb Proprioceptive Acuity
Current: Assistant Professor, Physical Therapy Program, Wayne State University

2010-2011 Antoinette Cheryl (chair)
Rackham Merit Scholar

2013-2015 Tomas Gonzales (chair)
Rackham Merit Scholar

Dissertation committee member:

1993-1998 D. Fry-Welch (Kinesiology, UM)
1995-1999 H.-M. Chai (Kinesiology, UM)
1996-1999 K. Monroe (Industrial and Operations Engineering, UM)
1999-2003 J. Streepey (Kinesiology, UM)
2001- 2005 H. Kim (Industrial and Operations Engineering, UM)
2002-2006 S. McKay (Kinesiology, UM)
2004-2005 J. Scibek (Kinesiology, UM)
2006-2008 J. Anguera (Kinesiology, UM)
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