

Steven A. Kautz

Offices:
Department of Health Sciences and Research
College of Health Professions
Medical University of South Carolina
77 President St., MSC 700; Room C317
Charleston, SC 29425
843-792-3867 (office)
843-792-1358 (fax)
kautz@musc.edu

Home:
1610 Fort Palmetto Circle
Mt. Pleasant, SC 29466

Ralph H Johnson VA Health Care System
Charleston, SC 29425

Citizenship: US

EDUCATION

University: University of California - Biomedical Engineering, Davis, CA
Dates: September 1989-September 1992.
Field of Study: Neuroscience - Dynamics/Controls
Degree: Ph.D. September 1992.
Research Advisor: Maury Hull, PhD
Research Topic: Biomechanics of pedaling with non-circular chainrings in cycling

University: University of Texas - Kinesiology, Austin, TX
Dates: August 1987-September 1989
Field of Study: Biomechanics - Neural Control
Degree: Ph.D. Preparation
Research Advisors: Mike Feltner, PhD and Larry Abraham, PhD
Research Topic: Biomechanics of pedaling in elite cyclists

University: University of Texas - Geology, Austin, TX
Dates: January 1984-July 1987
Field of Study: Geophysics
Degree: Master of Arts - December 1987
Research Advisor: John Sclater, PhD
Research Topic: The importance of cryptic normal faulting in scale models of extensional tectonics

University: Michigan State University, Honors College - Geology, East Lansing, MI
Dates: September 1979-June 1983
Field of Study: Geophysics
Degree: Bachelor of Science - May, 1983.

PROFESSIONAL EXPERIENCE

Distinguished University Professor, Medical University of South Carolina, Charleston, SC, December 2020 - present.

Professor, Department of Neurosciences, College of Medicine, Medical University of South Carolina, Charleston, SC, July 2013 - present.

Adjunct Professor, Department of Bioengineering, College of Engineering, Clemson University, Clemson, SC, January 2011 - present.

Biomedical Engineer, Ralph H. Johnson VA Medical Center, Charleston, SC, July 2010 - present.

Chair, Department of Health Sciences and Research, College of Health Professions, Medical University of South Carolina, Charleston, SC, January 2010 - present.

Professor, Department of Health Sciences and Research, College of Health Professions, Medical University of South Carolina, Charleston, SC, January 2010 - present.

Professor, Division of Physical Therapy, College of Health Professions, Medical University of South Carolina, Charleston, SC, January 2010 - present.

Professor, Department of Physical Therapy, College of Public Health and Health Professions, University of Florida, Gainesville, FL, July 2009 – January, 2010.

Program Coordinator, Movement Science Track, Rehabilitation Sciences Doctoral Program, College of Public Health and Health Professions, University of Florida, Gainesville, FL, May 2005 - January, 2010.

Associate Professor, Department of Physical Therapy, College of Public Health and Health Professions, University of Florida, Gainesville, FL, October 2002 – June 2009.

Biomedical Engineer, Brain Rehabilitation Research Center, Malcom Randall VA Medical Center, Gainesville, FL, October 2002 – July 2010.

Director, VA Rehabilitation Research Centers of Excellence and University of Florida Brooks Center for Rehabilitation Studies Human Motor Performance Laboratory, Gainesville, FL, October 2002 – July 2010.

Consulting Associate Professor, Department of Functional Restoration, School of Medicine, Stanford University, Stanford, CA, July 2000 - September 2002.

Consulting Assistant Professor, Department of Functional Restoration, School of Medicine, Stanford University, Stanford, CA, 1994-2000.

Biomedical Engineer, Neuromuscular Systems Group, Rehabilitation Research and Development Center, VA Medical Center, Palo Alto, CA, September 1992 - September 2002.

Associate Instructor, Department of Mechanical Engineering, University of California, Davis, CA, Summer 1992. (Undergraduate Dynamics)

GRANTS

Principal Investigator

1. **NIH C06 OD036020**, “Clinical Research Center for Restoration of Neural-based Function in the Real World (RENEW)”
SA Kautz (Principal Investigator)
\$7,862,996
September 2023-June 2026
2. **MUSC Blue Sky Award**, “Hypermobility Ehlers Danlos Syndrome Blue Sky Initiative”
SA Kautz and R Norris (Co-Principal Investigators)
\$200,000
May 2023-April 2025
3. **Helius Medical Inc**, “Cranial-nerve non-invasive neuromodulation and dynamic balance in chronic stroke survivors”
SA Kautz (Principal Investigator)
\$164,258 (+\$1.8 million equipment loan)
August 2023-December 2024
4. **NIH P20 GM109040-S1**, “Equipment Supplement – TMS/fMRI Imaging System”
SA Kautz (Principal Investigator)
\$250,000
September 2021
5. **NIH P2C HD086844**, “National Center of Neuromodulation for Rehabilitation (NC NM4R) and National Coordinating Center supplement”
SA Kautz (Principal Investigator)
\$7,397,988
July 2020-April 2025
6. **NIH R01 HD100416**, “Combining neurophysiology and biomechanics to delineate post-stroke gait impairments”
James Sulzer (Principal Investigator)
~\$1,901,505
Subcontract from University of Texas
SA Kautz (Principal Investigator)
~\$42,326
August 2020 - July 2022
7. **VA Rehabilitation R&D 1IK6RX003075**, “Senior Research Career Scientist”
SA Kautz (Principal Investigator)
\$898,149
October 2019 – September 2026
8. **NIH P20 GM109040**, “Center of Biomedical Research Excellence (COBRE) in Stroke Recovery”
SA Kautz (Principal Investigator)
\$11,204,320
April 2019-March 2024
9. **NIH U54 GM104941**, “Delaware CTR”

Stuart Binder-Macleod (Principal Investigator)
\$19,999,990
Subcontract from University of Delaware
SA Kautz (Principal Investigator)
\$3,999,998
September 2018 - June 2023

10. **NIH 3P2CHD086844-04S1**, Supplement to “National Center of Neuromodulation for Rehabilitation (NC NM4R)”
SA Kautz (Principal Investigator)
\$105,152
July 2018-June 2019
11. **MicroTransponder, Inc.**, “A Pivotal Randomized Study Assessing Vagus Nerve Stimulation (VNS) During Rehabilitation for Improved Upper Limb Motor Function After Stroke (VNS-REHAB)”
W Feng (Principal Investigator); SA Kautz (Co-Principal Investigator)
\$424,184
August 2017-August 2021
12. **UTMB/Center for Large Data Research**, “Archiving Stroke Recovery Data”
SA Kautz (Principal Investigator)
\$10,000
August 2017-August 2018
13. **VA Rehabilitation R&D 1I01RX001935**, “The effects of impaired post-stroke coordination and motor pathway integrity on mobility performance”
SA Kautz (Principal Investigator)
\$769,760
November 2016-October 2019
14. **NIH P2C HD086844**, “National Center of Neuromodulation for Rehabilitation (NC NM4R)”
SA Kautz (Principal Investigator)
\$5,245,792
September 2015-June 2020
15. **VA Rehabilitation R&D A9272S**, “Research Career Scientist”
SA Kautz (Principal Investigator)
\$530,000
October 2014 – September 2019
16. **NIH P20 GM109040**, “South Carolina Research Center for Recovery from Stroke”
SA Kautz (Principal Investigator)
\$10,823,405
June 2014-March 2019
17. **NIH U54 GM104941**, “Delaware CTR”
Stuart Binder-Macleod (Principal Investigator)
\$19,865,000
Subcontract from University of Delaware
SA Kautz (Principal Investigator)
\$3,378,643

September 2013 - June 2018

18. **SCTR Discovery Pilot**, "tDCS for walking recovery after stroke: Comparison of the cumulative effect of five sessions of cortical and spinal stimulation"
SA Kautz (Principal Investigator)
\$50,000
June 2012 - May 2013
19. **AHA Innovative Research Grant 12IRG9430057**, "Do spinal and cortical tDCS suggest distinct and synergistic neuromechanical mechanisms for post-stroke walking recovery"
SA Kautz (Principal Investigator)
\$150,000
January 2012 – December 2014
20. **NIH STTR R44 HD061131**, "ZeroG: Dynamic over-ground body-weight support system"
J Hidler (Principal Investigator)
Sub-contract from Aretech, LLC
SA Kautz (Principal Investigator)
Total of subcontract: \$58,315
July 2011 - February 2013
21. **Innovative Neurotronics**, "Randomized Trial of the Innovative Neurotronics WalkAide Compared to Conventional Ankle-Foot Orthosis in Stroke Patients (INSTRIDE)"
SA Kautz and W Feng (Co-Principal Investigators)
\$per subject payment
September 2011 - December 2012
22. **NIH 2R01 HD46820-06**, "Intermuscular coordination of hemiparetic walking"
SA Kautz (Principal Investigator)
\$363,805
September 2010 - June 2012
23. **VA RR&D Supplement to Merit Review A6365-R**, "Development of Evidence Based Parameter Selection for Locomotor Training "
SA Kautz (Principal Investigator)
\$ 20,000
July 2008
24. **VA RR&D Supplement to Merit Review B3983**, "Mechanisms of Response to Locomotor Training after Stroke "
SA Kautz (Principal Investigator)
\$ 20,000
July 2008
25. **VA Rehabilitation R&D A6776S**, "Research Career Scientist"
SA Kautz (Principal Investigator)
\$465,000
January 2009 – December 2013
26. **VA Rehabilitation R&D Merit Review A6365-R**, "Development of Evidence Based Parameter Selection for Locomotor Training "

SA Kautz and C Patten (Co-Principal Investigators)
\$ 672,759
August 2008 - June 2012

27. **VA RR&D large equipment supplement to Merit Review B3983, "Mechanisms of Response to Locomotor Training after Stroke"** (Vicon motion capture system upgrade)
SA Kautz (Principal Investigator)
\$151,915
May 2008
28. **VA RR&D Supplement to Merit Review B3983, "Mechanisms of Response to Locomotor Training after Stroke"**
SA Kautz (Principal Investigator)
\$ 70,000
April 2008
29. **VA RR&D small equipment supplement to Merit Review B3983, "Mechanisms of Response to Locomotor Training after Stroke"**
SA Kautz (Principal Investigator)
\$ 15,000
April 2008
30. **NIH R01 NS055380, "Development of a SimTK-based framework for hemiparetic walking assessment"**
RR Neptune (Principal Investigator)
\$1,310,170
Sub-contract from University of Texas
SA Kautz (Principal Investigator)
Total of subcontract: \$117,445
April 2007 - March 2011
31. **VA Rehabilitation R&D Merit Review B3983-R, "Mechanisms of Response to Locomotor Training after Stroke"**
SA Kautz (Principal Investigator)
\$ 1,343,082
September 2005 - August 2010
32. **VA Rehabilitation R&D Merit Review B4024-I, "Differential effects of robotic vs. manually-assisted locomotor training"**
AL Behrman and SA Kautz (Co-Principal Investigators)
\$450,000
October 2005 - September 2008
33. **NIH R01 HD46820, "Intermuscular coordination of hemiparetic walking"**
SA Kautz (Principal Investigator)
\$1,545,789
June 2004 - June 2010
34. **VA Rehabilitation R&D Merit Review B2748R, "Influence of post-stroke gait on bone density"**
SA Kautz and GS Beaupré, PhD (Co-Principal Investigators)
\$495,500

May 2002 - April 2005

35. ***NIH 5P60 AG014635-IDS1***, "Improving recovery after stroke"
Pamela W. Duncan PhD, PT (Principal Investigator), University of Kansas
Sub-contract from University of Kansas
SA Kautz (Principal Investigator)
Total of subcontract: \$45,000
January 2002 - December 2002
36. ***NIH R01 HD37996***, "Bilateral coordination of hemiparetic locomotion"
SA Kautz (Principal Investigator)
\$869,443
June 2000 - May 2006
37. ***VA Rehabilitation R&D Merit Review E2116RC***, "Coordination of hemiparetic movement after post-stroke rehabilitation"
SA Kautz and Pamela W. Duncan PhD, PT, Kansas City VA (Co-Principal Investigators)
\$259,500
January 2000 - October 2003
38. ***NIH R01 NS17662***, "Intermuscular coordination of mammalian movement"
FE Zajac (Principal Investigator), Stanford University
Sub-contract from Stanford University
SA Kautz (Principal Investigator)
Total of subcontract: \$510,000
January 2000 - December 2002
39. ***The Whitaker Foundation (Rosslyn, VA) Biomedical Engineering Research Grant 95-0547***, "Computer simulation analysis of coordination deficits in post-stroke hemiparesis"
SA Kautz (Principal Investigator)
\$209,906
September 1996 - April 2000
40. ***NIH R01 NS17662***, "Intermuscular coordination of mammalian movement"
FE Zajac (Principal Investigator), Stanford University
Sub-contract from Stanford University
SA Kautz (Principal Investigator)
Total of subcontract: \$540,000
July 1995 - December 1999
41. ***VA Palo Alto Health Care System New Investigator Award***, "Coordination deficits in post-stroke hemiparesis"
SA Kautz (Principal Investigator)
\$10,000
October 1997-September 1998
42. ***Foundation for Physical Therapy (Alexandria, VA) Research Grant***, "Does increased exertion affect motor performance during pedaling exercise in hemiplegia?"
DA Brown (PI) and SA Kautz (Co-PI)
\$55,710
July 1993 - July 1995

Co-Investigator

VA Rehabilitation R&D SPiRE Award I21RX003881. “Developing a Novel Cognitive-Behavioral Intervention for Psychosocial Rehabilitation in Chronic Stroke”

Lisa McTeague (PI)
SA Kautz (Co-Investigator)
\$230,000
August 2022-July 2024

DE CTR Pilot Grant. “Testing a wearable telemedicine-controllable taVNS device for NeuroCovid Recovery and Rehab”

Mark George (PI)
SA Kautz (Co-Investigator)
\$115,000
July 2020 – June 2021

VA Rehabilitation R&D Merit Award RX003146. “Development of sensory augmentation system to improve post-stroke gait stability”

Jesse Dean (PI)
SA Kautz (Co-Investigator)
\$1,045,800
June 2019 – May 2023

VA Rehabilitation R&D Merit Award RX002256. “A Novel Mechanics-based Intervention to Improve Post-Stroke Gait Stability”

Jesse Dean (PI)
SA Kautz (Co-Investigator)
\$988,000
January 2017 – December 2020

VA Rehabilitation R&D Merit Award B1149-R. “Rehabilitation of corticospinal control of walking following stroke”

David Clark (Principal Investigator)
SA Kautz (Consultant)
\$1,079,593
June 2014 - May 2018

SCTR Pilot 1232, “The Comprehensive Stroke Clinical, Biological, Physical and Occupational Therapy Data Repository Pilot Project (The Stroke STOR Project)”

W Feng (Principal Investigator)
SA Kautz (Co-Investigator)
\$104,814
June 2012 – June 2014

VA Rehabilitation R&D Merit Award RX000844. “Skeletal Muscle Plasticity As An Indicator of Functional Performance Post-Stroke”

Chris Gregory (Principal Investigator)
SA Kautz (Co-Investigator)
\$1,099,900
Oct 2013 - Oct 2017

NIH U10 NS086490. “South Carolina Collaborative Alliance for Stroke Trials (SC-CoAST)”
Ed Jauch (Principal Investigator)
SA Kautz (Co-Investigator: Leader, Rehabilitation and Recovery Group)
09/25/13-07/31/18

VA Rehabilitation R&D Merit Award RX000799-01A2. “Patient-Targeted Upper Extremity Rehabilitation After Stroke”
Michelle Woodbury (Principal Investigator)
SA Kautz (Co-Investigator)
\$1,090,600
April 2013 - April 2017

NIH 5 UL1 RR029882. “South Carolina Clinical and Translational Research Institute (SCTR)”
K Brady (Principal Investigator)
SA Kautz (Co-Investigator, Director of “Novel Methodologies” core)
\$20,000,000
July 2009 - June 2014

VA Rehabilitation R&D Service Center Proposal, F2182C. “Brain Rehabilitation Research Center, VA Center of Excellence”
Leslie Gonzalez-Rothi (Principal Investigator)
SA Kautz (Co-Investigator, Head of “Motor performance measurement” core)
\$4,000,000
July 2009 - June 2014

Quebec Rehabilitation Research Network Collaborative Clinical Research Award,
“Quantification of the effects of mass during walking with and without body weight support in persons with chronic hemiparesis ”
S Nadeau (Principal Investigator)
SA Kautz (Co-investigator)
\$25,000 (Canadian dollars)
May 2008 - April 2009
(Dr. Sylvie Nadeau, Associate Professor at the University of Montreal, performed a sabbatical in Dr. Kautz’s laboratory during February-March 2008 and is scheduled to return in spring 2009)

NIH-T32 HD043730-06 “Interdisciplinary Pre-doctoral Training in Neuromuscular Plasticity and Rehabilitation”
K Vandeborne (PI)
SA Kautz (Faculty Mentor)
\$1,582,899 (Total Direct)
06/11/03-04/30/13

NIH K12-HD055929-01 “Rehabilitation Research Career Development Program”
K Ottenbacher, (Director), K Vandeborne (Deputy-Director)
SA Kautz (Lead Mentor)
\$2,977,305 (Total Direct)
09/25/07-08/31/12

NIH P30 AG028740, “Claude D. Pepper Older Americans Independence Center”
Pahor (PI)

SA Kautz (Co-investigator)
\$602,141
6/1/07 - 3/31/12

VA Rehabilitation R&D Merit Review B5037, "Experimental rehabilitation following cervical-SCI & functional outcomes"

Prodip Bose (Principal Investigator)
SA Kautz (Co-investigator)
\$747,400
1/1/08-12/31/11

BSCIRTF Pilot Proposal, "Immediate Effects of Robotic- vs. Manual-assisted Locomotor Training on Neuromuscular Plasticity after Incomplete SCI"

AL Behrman (Principal Investigator)
SA Kautz (Co-investigator)
\$57,000
October 2004 - June 2005

VA Rehabilitation R&D Service Center Proposal, F2182C. "Brain Rehabilitation Research Center, VA Center of Excellence"

Leslie Gonzalez-Rothi (Principal Investigator)
SA Kautz (Co-Investigator, Head of "Motor performance measurement" core)
\$4,000,000
July 2004 - June 2009

VA Rehabilitation R&D Service Center Proposal, F2182C. "Brain Rehabilitation Research Center, VA Center of Excellence"

Leslie Gonzalez-Rothi (Principal Investigator)
SA Kautz (Co-Investigator, Head of "Motor performance measurement" core)
\$1,175,000.
Oct 2002-June 2004

VA Rehabilitation R&D Pilot B2607P, "Harness-Supported Treadmill Training in Post-Stroke Hemiparesis"

FE Zajac (Principal Investigator)
April 2002 - March 2004

VA Rehabilitation R&D Merit Review, "Graded weight-bearing exercise for improving ambulation after stroke"

David A. Brown, PhD, PT and Charles Burgar, MD (Co-Principal Investigators)
April 1997 - April 2000

Mentored awards

1. VA VISN 7 Research Development Award

" "

Bryant Seamon (Principal Investigator)
SA Kautz (Mentor team)
\$
October 2023 – September 2025

2. **VA Rehabilitation R&D Career Development I Award IK1RX003563**
“Deconstructing Post-Stroke Hemiparesis for Precision Neurorehabilitation”
David Lin (Principal Investigator)
SA Kautz (Mentor team)
\$1,388,948
September 2022 – August 2027

3. **VA Rehabilitation R&D Career Development II Award IK2RX003540**
“Priming the Rehabilitation Engine: Aerobic Exercise as the Fuel to Spark Behavioral Improvements in Stroke”
Ryan Ross (Principal Investigator)
SA Kautz (Primary Mentor)
\$ 855,900
February 2021 – January 2026

4. **VA Rehabilitation R&D Career Development I Award IK1RX003563**
“Targeting Neuroplasticity with Brain Computer Interfaces to Maximize Motor Recovery for Veterans with Stroke”
David Lin (Principal Investigator)
SA Kautz (Mentor team)
\$360,419
October 2020 – September 2022

5. **VA Rehabilitation R&D Career Development I Award 1IK1RX003126**
“Fatigue and mobility in stroke: a Biomechanical and Neurophysiological Investigation”
John Kindred (Principal Investigator)
SA Kautz (Mentor team)
\$ 194,100
July 2019 – June 2021

6. **VA Rehabilitation R&D Career Development I Award 1IK1RX002962**
“Age-related changes in neuroplasticity impede recovery in post-stroke depression: a novel exercise and brain stimulation paradigm to prime neuroplastic potential”
Ryan Ross (Principal Investigator)
SA Kautz (Mentor team)
\$ 194,100
February 2019-January 2021

7. **NIH K12 Neurosurgeon Research Career Development Program K12NS080223**
“Direct Measurement of Motor Cortical Oscillations in Response to Transcranial Direct Current Stimulation”
Nathan Rowland (Principal Investigator)
SA Kautz (Secondary mentor)
\$ 232,000
January 2019-December 2020

8. **VA Rehabilitation R&D Career Development II Award**
“Improving Measurement and Treatment of Post-stroke Neglect”
Emily Grattan (Principal Investigator)
SA Kautz (Primary Mentor)
\$ 823,700

April 2018-March 2023

9. SCTR KL2 Mentored Career Development Award

“Direct Measurement of Motor Cortical Oscillations in Response to Transcranial Direct Current Stimulation”

Nathan Rowland (Principal Investigator)

SA Kautz (Secondary mentor)

\$ 232,000

January 2018-December 2019

10. NIH R25 NS098999 “Training in Research for Academic Neurologists to Sustain Careers and Enhance the Numbers of Diverse Scholars (TRANSCENDS)” (PI: Ovbiagele)

“Excitatory and Inhibitory rTMS as Mechanistic Contributors to Walking Recovery”

Wole Awosika, University of Cincinnati (Principal Investigator)

SA Kautz (Mentor team)

\$??

July 2014-March 2019

11. NIH K23 NS091391

“Identification of gait and imaging markers for Freezing of Gait in Parkinson’s disease”

Gonzalo Revuelto (Principal Investigator)

SA Kautz (Secondary mentor)

\$ 959,801

September 2015-August 2020

12. SCTR KL2 Mentored Career Development Award

“Identification of gait and imaging markers for Freezing of Gait in Parkinson’s disease”

Gonzalo Revuelto (Principal Investigator)

SA Kautz (Secondary mentor)

\$ 232,000

July 2014-September 2015

13. NIH P20 Sub-project

“Excitatory and Inhibitory rTMS as Mechanistic Contributors to Walking Recovery”

Mark Bowden (Principal Investigator)

SA Kautz (Primary mentor)

\$ 969,000

July 2014-March 2019

14. NIH Delaware CTR Pilot Grant

“Virtual Environment for Stroke Rehabilitation”

Michelle Woodbury (Principal Investigator)

SA Kautz (Primary mentor)

\$ 136,000

December 2013-May 2015

15. VA Rehabilitation R&D Career Development II Award

“Augmentation of Locomotor Adaptation Post-Stroke”

Mark Bowden (Principal Investigator)

SA Kautz (Primary mentor)

\$ 923,700

April 2013-March 2018

16. VA Rehabilitation R&D Career Development II Award

"Post-Stroke Contributors to Increased Energetic Cost and Decreased Gait Stability"

Jesse C Dean (Principal Investigator)

SA Kautz (Primary mentor)

\$639,100

October 2012-September 2016

17. VA Rehabilitation R&D Career Development II Award

"Intermittent Hypoxia and Locomotor Training: Effects following Spinal Cord Injury"

Nicole Tester (Principal Investigator)

SA Kautz (Tertiary mentor)

\$650,055

July 2010-June 2014

18. VA Rehabilitation R&D Career Development II Award

"Combining Neural and Behavioral Therapies to Enhance Stroke Recovery"

Dorian Rose (Principal Investigator)

SA Kautz (Tertiary mentor)

\$706,000

February 2010-January 2015

19. VA Rehabilitation R&D Career Development II Award

"Neural determinants of impaired locomotor adaptability post-stroke"

Dave Clark (Principal Investigator)

SA Kautz (Primary mentor)

\$591,000

January 2010-December 2013

20. VA Rehabilitation R&D Career Development I Award

"Evaluation of walking specific motor learning in chronic stroke"

Mark Bowden (Principal Investigator)

SA Kautz (Primary mentor)

\$166,500

February 2010-January 2012

21. VA Rehabilitation R&D Career Development II Award

"Skeletal muscle properties and the metabolic cost of walking post-stroke"

Chris Gregory (Principal Investigator)

SA Kautz (Primary mentor)

\$350,000

July 2008-September 2012

22. VA Rehabilitation R&D Career Development II Award

"A Toolbox for Measuring Post-Stroke Upper Extremity Motor Ability"

Michelle Woodbury (Principal Investigator)

SA Kautz (Primary mentor)

\$350,000

October 2008-September 2012

23. NIH K12 Scholarship

Chris Gregory (Principal Investigator)
SA Kautz (Primary mentor)
January 2008- December 2010

24. VA Rehabilitation R&D Career Development I Award

"Neuronal Coupling: Arm Swing and Leg Muscle Activation during Locomotion"
Nicole Tester (Principal Investigator)
SA Kautz (Tertiary mentor)
\$146,739
January 2008-January 2010

25. VA Rehabilitation R&D Career Development I Award

"Adaptability of walking in persons with neurological disorders"
Dave Clark (Principal Investigator)
SA Kautz (Primary mentor)
\$ 146,739
September 2007-September 2009

26. VA Rehabilitation R&D Career Development II Award

"Should we train strength or just skill in post-stroke rehabilitation"
Lorie Richards (Principal Investigator)
SA Kautz (Tertiary mentor)
\$383,168
September 2007-September 2010

27. VA Rehabilitation R&D Career Development II Award #4941

"Adaptivity and ability of internal mechanisms of falls aversion"
Brian Schulz (Principal Investigator)
SA Kautz (Secondary mentor)
\$345,540
October 2007- October 2010

28. NIH K01 HD052713

"Muscle Weakness and Post-Traumatic Knee OA"
Terese Chmielewski (Principal Investigator)
SA Kautz (Member of semi-annual advisory committee)
\$526,819 (Direct \$487,907)
July 2007- June 2012

29. VA Rehabilitation R&D Associate Investigator

"Measuring Post-stroke Arm Motor Ability: Measurement Properties of the Fugl-Meyer Upper Extremity Assessment Examined with Item Response Theory Framework"
Michelle Woodbury (Principal Investigator)
L Richards, J Kleim & SA Kautz (Co-mentors)
\$120,000
October 2006-September 2008

30. VA Rehabilitation R&D Associate Investigator

"Neuromuscular function and locomotor ability in persons after central nervous system injury"

Chris Gregory (Principal Investigator)
SA Kautz & K Vandenborne (Co-mentors)
\$120,000
May 2005-September 2007

31. VA Rehabilitation R&D Associate Investigator

Toni Chiara (Principal Investigator)
C Sapienza & SA Kautz (Co-mentors)
\$120,000
April 2004-March 2006

Student Grants

Foundation for Physical Therapy Promotion of Doctoral Studies (PODS) I Scholarship

“Using Neuromuscular Coordination during Post-Stroke Walking to Identify Mechanisms of Impairment for Targeted Rehabilitation Interventions”

B Seamon (Principal Investigator: MUSC)

\$ 7,500

September 2018 – August 2019

Role: Committee Chair

AHA Predoctoral Award

“Frontal-striatal connectivity and motor recovery following stroke”

D Lench (Principal Investigator: MUSC)

\$ 53,688

July 2017 – July 2019

Role: Mentor committee

AHA Predoctoral Award

“Interactions between posture and locomotion during poststroke walking “

SA Graham (Principal Investigator: University of Alabama-Birmingham)

\$51,900

July 2016 – July 2018

Role: Mentor committee

AHA Predoctoral Award

“Exposing plasticity-related changes in brain activation during lower limb pedaling after stroke.”

B Cleland (Principal Investigator: Marquette University)

\$52,000

January 2016 – December 2017

Role: Mentor committee

PHP Graduate Student Research Grant

“Swing phase dynamics during hemiparetic walking: Step-to-step variability. “

CK Balasubramanian (Principal Investigator)

\$1000

April 2007

Role: Committee Chair

PUBLICATIONS

Refereed Journal Articles & Book Chapters

1. Kindred J, Gregory CM, Kautz SA, Bowden MG (2023). Interhemispheric asymmetries in intracortical facilitation correlate with fatigue severity in individuals with post-stroke fatigue. *J Clin Neurophys*.
2. Peng, X., Baker-Vogel, B., Sarhan, M., Short, E. B., Zhu, W., Liu, H., Kautz, SA, & Badran, B. W. (2023). Left or right ear? A neuroimaging study using combined taVNS/fMRI to understand the interaction between ear stimulation target and lesion location in chronic stroke. *Brain stimulation*, 16(4), 1144–1153. Advance online publication. <https://doi.org/10.1016/j.brs.2023.07.050>
3. Badran, B. W., Peng, X., Baker-Vogel, B., Hutchison, S., Finetto, P., Rische, K., Fortune, A., Kitchens, E., O'Leary, G. H., Short, A., Finetto, C., Woodbury, M. L., & Kautz, SA (2023). Motor Activated Auricular Vagus Nerve Stimulation as a Potential Neuromodulation Approach for Post-Stroke Motor Rehabilitation: A Pilot Study. *Neurorehabil Neural Repair*, 37(6), 374–383.
4. Schranz C, Srivastava S, Seamon BA, Marebwa B, Bonilha L, Ramakrishnan V, Wilmskoetter J, Neptune RR, Kautz SA, Seo NJ (2023). Different aspects of hand grip performance associated with structural connectivity of distinct sensorimotor networks in chronic stroke. *Physiological Reports* 11(7):e15659. doi: 10.14814/phy2.15659.
5. Domin, M., Hordacre, B., Hok, P., Boyd, L. A., Conforto, A. B., Andrushko, J. W., Borich, M. R., Craddock, R. C., Donnelly, M. R., Dula, A. N., Warach, S. J., Kautz, S. A., Lo, B. P., Schranz, C., Seo, N. J., Srivastava, S., Wong, K. A., Zavaliangos-Petropulu, A., Thompson, P. M., Liew, S. L., Lotze, M. (2023). White Matter Integrity and Chronic Poststroke Upper Limb Function: An ENIGMA Stroke Recovery Analysis. *Stroke*, 10.1161/STROKEAHA.123.043713. Advance online publication. <https://doi.org/10.1161/STROKEAHA.123.043713>
6. Liew SL, Schweighofer N, Cole JH, Zavaliangos-Petropulu A, Lo BP, Han LKM, Hahn T, Schmaal L, Donnelly MR, Jeong JN, Wang Z, Abdullah A, Kim JH, Hutton A, Barisano G, Borich MR, Boyd LA, Brodtmann A, Buetefisch CM, Byblow WD, Cassidy JM, Charalambous CC, Ciullo V, Conforto AB, Dacosta-Aguayo R, DiCarlo JA, Domin M, Dula AN, Egorova-Brumley N, Feng W, Geranmayeh F, Gregory CM, Hanlon CA, Hayward K, Holguin JA, Hordacre B, Jahanshad N, Kautz SA, Khlif MS, Kim H, Kuceyeski A, Lin DJ, Liu J, Lotze M, MacIntosh BJ, Margetis JL, Mataro M, Mohamed FB, Olafson ER, Park G, Piras F, Reville KP, Roberts P, Robertson AD, Sanossian N, Schambra HM, Seo NJ, Soekadar SR, Spalletta G, Stinear CM, Taga M, Tang WK, Thielman GT, Vecchio D, Ward NS, Westlye LT, Winstein CJ, Wittenberg GF, Wolf SL, Wong KA, Yu C, Cramer SC, Thompson PM (2023). Association of Brain Age, Lesion Volume, and Functional Outcome in Patients With Stroke. *Neurology*;100(20):e2103-e2113.
7. Srivastava S, Seamon BA, Marebwa BK, Wilmskoetter J, Bowden MG, Gregory CM, Seo NJ, Hanlon CA, Bonilha L, Brown TR, Neptune RR, Kautz SA (2022). The relationship between motor pathway damage and flexion-extension patterns of muscle co-excitation during walking. *Frontiers Neurology*; 13:968385. doi: 10.3389/fneur.2022.968385.
8. Srivastava S, Seamon BA, Patten C, Kautz SA (in press). Variation of body weight supported treadmill training parameters during a single session can modulate muscle activity patterns in post-stroke gait. *Exp Brain Res*. 2023 Jan 13. doi: 10.1007/s00221-023-06551-7.

9. Dawson J, Engineer ND, Cramer SC, Wolf SL, Ali R, O'Dell MW, Pierce D, Prudente CN, Redgrave J, Feng W, Liu CY, Francisco GE, Brown BL, Dixit A, Alexander J, DeMark L, Krishna V, Kautz SA, Majid A, Tarver B, Turner DL, Kimberley TJ (in press). Vagus Nerve Stimulation Paired With Rehabilitation for Upper Limb Motor Impairment and Function After Chronic Ischemic Stroke: Subgroup Analysis of the Randomized, Blinded, Pivotal, VNS-REHAB Device Trial. *Neurorehabil Neural Repair*. 2022 Oct 13:15459683221129274.
10. Badran BW, Huffman SM, Dancy M, Austelle CW, Bikson M, Kautz SA and George MS (2022). A pilot randomized controlled trial of supervised, at-home, self-administered transcutaneous auricular vagus nerve stimulation (taVNS) to manage long COVID symptoms. *Bioelectronic Med*; **25**:13.
11. Chhatbar PY, Liu S, Ramakrishnan V, George MS, Kautz SA, Feng W (2022). Microdermabrasion facilitates direct current stimulation by lowering skin resistance. *Skin Health Dis*. **2**(3):e76. <https://doi.org/10.1002/ski2.76>
12. Revuelta GJ, Embry A, Elm JJ, Jenkins S, Lee P and Kautz S (2022). A feasibility study of objective outcome measures used in clinical trials of freezing of gait. *Pilot Feasibility Stud.*; **8**:137.
13. Brough L, Kautz SA and Neptune RR (2022). Muscle Contributions to Pre-Swing Biomechanical Tasks Influence Swing Leg Mechanics in Individuals Post-Stroke during Walking. *J Neuroengineering & Rehab*; **19**(1):55
14. Liew SL, Zavaliangos-Petropulu A, Lo B, Donnelly MR, Schweighofer N, Lohse K, Jahanshad N, Barisano G, Banaj N, Borich MR, Boyd LA, Buetefisch CM, Byblow WD, Cassidy JM, Charalambous CC, Conforto AB, DiCarlo JA, Dula AN, Egorova-Brumley N, Etherton MR, Feng W, Fercho KA, Geranmayeh F, Hanlon CA, Hayward KS, Hordacre B, Kautz SA, Khlif MS, Kim H, Kuceyeski A, Lin DJ, Liu J, Lotze M, MacIntosh BJ, Margetis JL, Mohamed FB, Piras F, Ramos-Murguialday A, Revill KP, Roberts PS, Robertson AD, Schambra HM, Seo NJ, Shiroishi MS, Stinear CM, Soekadar SR, Spalletta G, Taga M, Tang WK, Thielman GT, Vecchio D, Ward NS, Westlye LT, Werden E, Winstein C, Wittenberg GF, Wolf SL, Wong KA, Yu C, Brodtmann A, Cramer SC, Thompson PM (2022). A large, curated, open-source stroke neuroimaging dataset to improve lesion segmentation algorithms. *Scientific Data*; **9**(1):320.
15. Zavaliangos-Petropulu A, Lo B, Donnelly MR, Schweighofer N, Lohse K, Jahanshad N, Barisano G, Banaj N, Borich MR, Boyd LA, Buetefisch CM, Byblow WD, Cassidy JM, Charalambous CC, Conforto AB, DiCarlo JA, Dula AN, Egorova-Brumley N, Etherton MR, Feng W, Fercho KA, Geranmayeh F, Hanlon CA, Hayward KS, Hordacre B, Kautz SA, Khlif MS, Kim H, Kuceyeski A, Lin DJ, Liu J, Lotze M, MacIntosh BJ, Margetis JL, Mohamed FB, Piras F, Ramos-Murguialday A, Revill KP, Roberts PS, Robertson AD, Schambra HM, Seo NJ, Shiroishi MS, Stinear CM, Soekadar SR, Spalletta G, Taga M, Tang WK, Thielman GT, Vecchio D, Ward NS, Westlye LT, Werden E, Winstein C, Wittenberg GF, Wolf SL, Wong KA, Yu C, Brodtmann A, Cramer SC, Thompson PM, Liew SL (2022). Chronic Stroke Sensorimotor Impairment Is Related to Smaller Hippocampal Volumes: An ENIGMA Analysis. *J Am Heart Assoc*; **11**(10):e025109. doi: 10.1161/JAHA.121.025109. Epub 2022 May 16. PMID: 35574963
16. Seamon BA, Bowden MG, Kautz SA, Velozo CA (2022). Revisiting the concept of minimal detectable change for patient-reported outcome measures. *Physical Therapy*; **102**(8):pzac068.
17. Erler KS, Wu R, DiCarlo JA, Petrilli MF, Gochyyev P, Hochberg LR, Kautz SA, Schwamm LH, Cramer SC, Finklestein SP and Lin DJ. (2022). Association of Modified Rankin Scale with

Recovery Phenotypes in Patients with Upper Extremity Weakness after Stroke. *Neurology* **98**(18):e1877-e1885.

18. Liew, S.-L., Zavaliangos-Petropulu, A., Schweighofer, N., Jahanshad, N., Lang, C. E., Lohse, K. R., Banaj, N., Barisano, G., Baugh, L. A., Bhattacharya, A. K., Bigjahan, B., Borich, M. R., Boyd, L. A., Brodtmann, A., Buetefisch, C. M., Byblow, W. D., Cassidy, J. M., Ciullo, V., Conforto, A. B., Craddock, R. C., Dula, A. N., Egorova, N., Feng, W., Fercho, K. A., Gregory, C. M., Hanlon, C. A., Hayward, K. S., Holguin, J. A., Hordacre, B., Hwang, D. H., Kautz, S. A., Khlif, M. S., Kim, B., Kim, H., Kuceyeski, A., Lin, D., Liu, J., Lotze, M., MacIntosh, B. J., Margetis, J. L., Mohamed, F. B., Nordvik, J. E., Petoe, M. A., Piras, F., Raju, S., Ramos-Murguialday, A., Revill, K. P., Roberts, P., Robertson, A. D., Schambra, H. M., Seo, N. J., Shiroishi, M. S., Soekadar, S. R., Spalletta, G., Stinear, C. M., Suri, A., Tang, W. K., Thielman, G. T., Thijs, V. N., Vecchio, D., Wang, J., Ward, N. S., Westlye, L. T., Winstein, C. J., Wittenberg, G. F., Wong, K. A., Yu, C., Wolf, S. L., Cramer, S. C., & Thompson, P. M. (2021). Smaller spared subcortical nuclei are associated with worse post-stroke sensorimotor outcomes in 28 cohorts worldwide. *Brain Communications*; **3**(4):fcab254.
19. Seamon BA, Bowden MG, Kindred JH, Embry AE, Kautz SA. Transcranial Direct Current Stimulation Electrode Montages May Differentially Impact Variables of Walking Performance in Individuals Poststroke: A Preliminary Study. *J Clin Neurophysiol.* 2023 Jan 1;40(1):71-78. doi: 10.1097/WNP.0000000000000848. Epub 2021 Apr 8. PMID: 34009847; PMCID: PMC8497641.
20. Dawson J, Liu CY, Francisco GE, Cramer SC, Wolf SL, Dixit A, Alexander J, Ali R, Brown BL, Feng W, DeMark L, Hochberg LR, Kautz SA, Majid A, O'Dell MW, Pierce D, Prudente CN, Redgrave J, Turner DL, Engineer ND, Kimberley TJ (2021). Vagus nerve stimulation paired with rehabilitation for upper limb motor function after ischaemic stroke (VNS-REHAB): a randomised, blinded, pivotal, device trial. *Lancet* **397**(10284):1545-1553. doi: 10.1016/S0140-6736(21)00475-X.
21. Lench HL, DeVries W, Kearney-Ramos T, Chesnutt A, Monsch ED, Embry A, Doolittle J, Kautz SA, Hanlon CA, Revuelta GJ (2021). Paired Inhibitory Stimulation and Gait Training Modulates Supplemental Motor Area Connectivity in Freezing of Gait. *Parkinsonism & Related Disorders*. <https://doi.org/10.1016/j.parkreldis.2021.05.028>
22. O'Leary GH, Jenkins DD, Coker-Bolt P, George MS, Kautz SA, Bikson M, Gillick BT and Badran BW (2021). From adults to pediatrics: A review noninvasive brain stimulation (NIBS) to facilitate recovery from brain injury. *Prog. Brain Research*. <https://doi.org/10.1016/bs.pbr.2021.01.019>
23. Lewallen LK, Srivastava S, Kautz SA and Neptune RR (2020). Assessment of Turning Performance and Muscle Coordination in Individuals Post-Stroke. *J Biomech* **114**:110113. doi: 10.1016/j.jbiomech.2020.110113.
24. Seamon BA, Kautz SA, Velozo C (2021). Measurement Precision and Efficiency of Computerized Adaptive Testing for the Activities-specific Balance Confidence Scale in People with Stroke. *Physical Therapy* **101**:pzab020. doi: 10.1093/ptj/pzab020
25. Krishnamurthy LC, Champion GN, McGregor KM, Krishnamurthy V, Turabi A, Simone R, Roberts SR, Nocera JR, Borich MR, Rodriguez AD, Belagaje SR, Harrington RM, Harris-Love ML, Harnish SM, Drucker JH, Benjamin M, Meadows ML, Seeds L, Zlatar ZZ, Sudhyadhom A, Butler AJ, Garcia A, Patten C, Trinastic J, Kautz SA, Gregory CM and Crosson BA (2020). The effect of time since stroke, gender, age, and lesion size on thalamus volume in chronic stroke: a pilot study. *Scientific Reports* **10**, 20488. <https://doi.org/10.1038/s41598-020-76382-x>

26. Kindred JH, Wonsetler EC, Charalambous CC, Srivastava S, Marebwa BK, Bonilha L, Kautz SA and Bowden MG (2020). Individualized Responses to Ipsilesional High-Frequency and Contralesional Low-Frequency rTMS in Chronic Stroke: A Pilot Study to Support the Individualization of Neuromodulation for Rehabilitation. *Front. Hum. Neurosci.* **14**:578127. doi: 10.3389/fnhum.2020.578127
27. Pilloni G, Bikson M, Badran BW, George MS, Kautz SA, Okano AH, Baptista AF and Charvet LE (2020). Update on the Use of Transcranial Electrical Brain Stimulation to Manage Acute and Chronic COVID-19 Symptoms. *Front. Hum. Neurosci.* **14**:595567. doi: 10.3389/fnhum.2020.595567
28. Gensemer C, Burks R, Kautz SA, Judge DP, Lavalee M, Norris RA (2020). Ehlers-Danlos Syndromes: Complex Phenotypes, Challenging Diagnoses and Poorly Understood Causes. *Developmental Dynamics*; in press
29. Liew, S.-L., Zavaliangos-Petropulu, A., Jahanshad, N., Lang, C. E., Hayward, K. S., Lohse, K., Juliano, J. M., Assogna, F., Baugh, L. A., Bhattacharya, A. K., Borich, M. R., Boyd, L. A., Brodtmann, A., Buetefisch, C. M., Byblow, W. D., Cassidy, J. M., Conforto, A. B., Craddock, R. C., Dimyan, M. A., Dula, A. N., Ermer, E., Etherton, M. R., Fercho, K. A., Gregory, C. M., Hadidchi, S., Holguin, J. A., Hwang, D. H., Jung, S., Kautz, S. A., Khlif, M. S., Khoshab, N., Kim, B., Kim, H., Kuceyeski, A., Lotze, M., MacIntosh, B. J., Margetis, J. L., Mohamed, F. B., Piras, F., Ramos-Murguialday, A., Richard, G., Roberts, P., Robertson, A. D., Rondina, J. M., Rost, N. S., Sanossian, N., Schweighofer, N., Shiroishi, M. S., Soekadar, S. R., Spalletta, G., Stinear, C. M., Suri, A., Tang, W. K. W., Thielman, G. T., Vecchio, D., Villringer, A., Ward, N. S., Werden, E., Westlye, L. T., Winstein, C., Wittenberg, G. F., Wong, K. A., Yu, C., Cramer, S. C., & Thompson, P. M. (2020). The ENIGMA Stroke Recovery Working Group: Big data neuroimaging to study brain-behavior relationships after stroke. *Hum Brain Mapp*; doi: 10.1002/hbm.25015.
30. Little VL, Perry LA, Mercado MWV, Kautz SA, Patten C. (2020) Gait asymmetry pattern following stroke determines acute response to locomotor task. *Gait Posture*; **77**:300-307.
31. Dean JC, Bowden MG, Kelly A and Kautz SA (2019). Altered post-stroke propulsion is related to paretic swing phase kinematics. *Clin Biomech*; **72**:24-30.
32. Seamon BA, Kautz SA, Velozo CA (2019) Rasch Analysis of the Activities-Specific Balance Confidence Scale in Individuals Post-Stroke. *Archives of Rehabilitation Research and Clinical Translation*; doi: 10.1016/j.arrct.2019.100028.
33. Roelker SA, Kautz SA and Neptune RR (2019). Muscle Contributions to Mediolateral and Anteroposterior Foot Placement During Walking. *J Biomechanics*; **95**:109310
34. Kindred JH, Kautz SA, Wonsetler EC and Bowden MG (2019). Single sessions of high-definition transcranial direct current stimulation do not alter lower extremity biomechanical or corticomotor response variables post-stroke. *Frontiers of Neuroscience*; **13**:286. doi: 10.3389/fnins.2019.00286
35. Charalambous CC, Liang JN, Kautz SA, George MS, Bowden MG (2019). Bilateral Assessment of the Corticospinal Pathways of the Ankle Muscles Using Navigated Transcranial Magnetic Stimulation. *J Vis Exp*; **144**. doi: 10.3791/58944

36. Srivastava S, Patten C and Kautz SA (2018). Comparing muscle activity patterns of hemiparetic gait with a normative profile: an analytical tool. *J Neuroengineering and Rehabilitation*; **16**:21.
37. Brough L, Kautz SA, Bowden MG, Gregory CM and Neptune RR (2018). Merged plantarflexor muscle activity is predictive of poor walking performance in post-stroke hemiparetic subjects. *J Biomech*; **82**:361-367.
38. Roelker SA, Kautz SA, Bowden MG and Neptune RR (2019). Paretic propulsion as a measure of walking performance and functional motor recovery post-stroke: a review. *Gait Posture*; **68**:6-14.
39. Feng W, Kautz SA, Schlaug G, and Chhatbar Pratik (2018). Transcranial Direct Current Stimulation for Poststroke Motor Recovery: Challenges and Opportunities. *PM&R*; **10(9)**:S157-S164.
40. Vistamehr A, Kautz SA, Bowden MG and Neptune RR (2018). The Influence of Locomotor Training on Dynamic Balance During Steady-State Walking Post-Stroke. *J Biomech*; **89**:21-27.
41. Seo NJ, Woodbury ML, Bonilha L, Ramakrishnan V, Kautz SA, Downey R, Lauer A, Roark CM, Landers LE, Phillips SK and Vatinno AA (2018). TheraBracelet stimulation during task-practice therapy to improve post-stroke upper extremity function – A pilot randomized controlled study. *Physical Therapy*; **99**:319-328.
42. Seamon BA, Neptune RR and Kautz SA (2018). Using a module-based analysis framework for investigating muscle coordination during walking in individuals post-stroke: A literature review and synthesis. *Applied Bionics and Biomechanics*; doi: 10.1155/2018/3795754.
43. Chhatbar PY, Kautz SA, Takacs I, Rowland NC, Revuelta GJ, George MS, Bikson M, Feng W (2018). Evidence of transcranial direct current stimulation-generated electric fields at subthalamic level in human brain in vivo. *Brain Stimul*; **11**:727-733
44. Chhatbar PY, George MS, Kautz SA, Feng W (2017). Charge density, not current density, is a more comprehensive safety measure of transcranial direct current stimulation. *Brain Behav Immun*; **66**:414-415.
45. Chhatbar PY, George MS, Kautz SA, Feng W (2017). Quantitative reassessment of safety limits of tDCS for two animal studies. *Brain Stimul*; **10(5)**:1011-1012.
46. Alawieh A, Tomlinson S, Adkins DL, Kautz SA and Feng W (2017). Preclinical and Clinical Evidence on Ipsilateral Corticospinal Projections: Implication for Motor Recovery. *Translational Stroke Research*; **8(3)**:529-540.
47. Spampinato MV, Chan C, Jensen JH, Helpert JA, Bonilha L, Kautz SA, Nietert PJ, Feng W (2017). Diffusional Kurtosis Imaging and Motor Outcome in Acute Ischemic Stroke. *American Journal of Neuroradiology*; **38(7)**:1328-1334.
48. Lodha N, Chen YT, McGuirk T, Fox EJ, Kautz SA, Christou EA, and Clark DJ (2017). EMG synchrony to assess impaired corticomotor control of locomotion after stroke. *J Electromyogr Kinesiol*, **37**: 35-40.

49. Chhatbar PY, Chen R, Deardorff R, Dellenbach B, Kautz SA, George MS and Feng W (2017). Safety and tolerability of transcranial direct current stimulation to stroke patients - a phase I current escalation study. *Brain Stimulation*; **10**(3):553-559.
50. Dean JC, Embry AE, Stimpson KH, Perry LA, Kautz SA (2017). Effects of hip abduction and adduction accuracy on post-stroke gait. *Clin Biomech*; **44**:14-20.
51. Vistamehr A, Kautz SA, Bowden MG and Neptune RR (2016). Correlations between measures of dynamic balance in individuals with post-stroke hemiparesis. *J Biomechanics*; **49**:396-400.
52. Oscari F, Finetto C, Kautz SA and Rosati G (2016) Effects on muscle coordination patterns due to exposure to a viscous force field *Journal of NeuroEngineering and Rehabilitation*; **13**:58.
53. Balasubramanian CK, Li C-Y, Bowden MG, Duncan PW, Kautz SA and Velozo CA (2016). Dimensionality and item-difficulty hierarchy of the lower-extremity Fugl-Meyer assessment in individuals with sub-acute and chronic stroke. *Arch Phys Med Rehabil*; **97**:582-589.
54. Clark DJ, Neptune RR, Behrman AL and Kautz SA (2016). A locomotor adaptability task promotes intense and task-appropriate output from the paretic leg during walking. *Archives of Physical Medicine and Rehabilitation*; **97**:493-496.
55. Chhatbar PY, Ramakrishnan V, Kautz SA, George MS, Adams RJ and Feng W (2016). Transcranial Direct Current Stimulation Post-Stroke Upper Extremity Motor Recovery Studies Exhibit a Dose-Response Relationship. *Brain Stimulation*; **9**:16-26.
56. Revuelta GJ, Embry A, Elm JJ, Gregory CG, Delambo A, Kautz SA and Hinson VK (2015). Pilot study of atomoxetine in patients with Parkinson's disease and dopa-unresponsive freezing of gait. *Translational Neurodegeneration*; Dec 10; **4**:24.
57. Dean JC and Kautz SA (2015). Foot placement control and gait instability among stroke survivors. *JRRD*; **52**:577-90.
58. Feng W, Wang J, Chhatbar PY, Doughty C, Landsittel D, Lioutas VA, Kautz SA and Schlaug G (2015). Corticospinal Tract Lesion Load - A Potential Imaging Biomarker for Stroke Motor Outcomes. *Annals of Neurology*; **78**(6):860-70.
59. Bethoux F, Rogers H, Nolan K, Abrams G, Annaswamy T, Brandstater M, Browne B, Burnfield J, Feng W, Freed, M, Geis C, Greenberg J, Gudesblatt M, Ikramuddin F, Jayaraman A, Kautz SA, Lutsep H, Madhavan S, Meilahn J, Pease W, Rao N, Seetharama S, Sethi P, Turk M, Wallis RA and Kuffa C (2015). Long-Term Follow-up to a Randomized Controlled Trial Comparing Peroneal Nerve Functional Electrical Stimulation to an Ankle Foot Orthosis for Patients With Chronic Stroke. *Neurorehabilitation & Neural Repair*; **29**:911-22.
60. Ovbiagele B, Kautz SA, Feng W, and Adkins DL (2014). Poststroke Outcomes. *Stroke Research and Treatment*; Volume 2014, Article ID 828435.
61. Allen JL, Kautz SA and Neptune RR (2014). Forward propulsion asymmetry is indicative of changes in plantarflexor coordination during walking in individuals with post-stroke hemiparesis. *Clinical Biomechanics*; **29**:780-6.

62. Routson R, Kautz SA and Neptune RR (2014). Modular organization across changing task demands in healthy and post-stroke gait. *Physiological Reports*; **2**:e12055.
63. Boan A, Feng S, Ovbiagele B, Bachman DL, Ellis C, Adams R, Kautz SA and Lackland D (2014). Persistent Racial Disparity in Stroke Hospitalization and Economic Impact in Young Adults in the Buckle of Stroke Belt. *Stroke*; **45**:1932-8.
64. Vistamehr A, Kautz SA and Neptune RR (2014). The Influence of Solid Ankle-Foot-Orthoses on Forward Propulsion and Dynamic Balance in Healthy Adults during Walking. *Clinical Biomechanics*; **29**:583-9.
65. Bethoux F, Rogers H, Nolan K, Abrams G, Annaswamy T, Brandstater M, Browne B, Burnfield J, Feng W, Freed, M, Geis C, Greenberg J, Gudesblatt M, Ikramuddin F, Jayaraman A, Kautz SA, Lutsep H, Madhavan S, Meilahn J, Pease W, Rao N, Seetharama S, Sethi P, Turk M, Wallis RA and Kuffa C (2014). The Effects of Peroneal Nerve Functional Electrical Stimulation Versus Ankle-Foot Orthosis in Patients With Chronic Stroke: A Randomized Controlled Trial. *Neurorehabilitation & Neural Repair*; **28**:688-77.
66. Savitz SI, Cramer SC, Wechsler L on behalf of the STEPS3 Consortium (2014). Stem Cells as an Emerging Paradigm in Stroke (STEPS) 3: Enhancing the Development of Clinical Trials. *Stroke*; **45**:634-9.
67. Allen JL, Kautz SA and Neptune RR (2014). The influence of merged muscle excitation modules on post-stroke hemiparetic walking performance. *Clinical Biomechanics*; **28**:697-704.
68. Nott CR, Neptune RR and Kautz SA (2014). Frontal-plane angular momentum during walking relates to clinical balance measures in persons after stroke. *Gait & Posture*; **39**:129-34.
69. Fox EJ, Tester NJ, Kautz SA, Howland DR, Clark DJ, Garvan C & Behrman AL (2013). Neuromuscular control across locomotor tasks in children with incomplete spinal cord injuries. *J Neurophysiology*; **110**:1415-25.
70. Clark DJ, Kautz SA, Bauer AR, Chen Y-T and Christou EA (2013). Synchronous electromyogram activity in the Piper frequency band reveals the corticospinal demand of walking tasks. *Annals of Biomedical Engineering*; **41**:1778-86.
71. Charalambous CC, Bonilha HS, Kautz SA, Gregory CM, and Bowden MG (2013). Rehabilitating walking speed post-stroke with treadmill-based interventions: a systematic review of randomized controlled trials. *Neurorehabilitation and Neural Repair*; **27**:709-21.
72. Routson RL, Clark DJ, Bowden MG, Kautz SA and Neptune RR (2013). The influence of locomotor rehabilitation on module quality and post-stroke hemiparetic walking performance. *Gait & Posture*; **38**:511-7.
73. Raja B, Neptune RR and Kautz SA (2012). Coordination of the non-paretic leg during hemiparetic gait: expected and novel compensatory patterns. *Clinical Biomechanics*; **27**:1023-30.
74. Bowden MG, Behrman AL, Neptune RR, Gregory CM, Kautz SA (2013). Locomotor rehabilitation of individuals with chronic stroke: difference between responders and non-responders. *Arch Phys Med Rehabil*; **94**:856-62.

75. Hall AL, Bowden MG, Kautz SA and Neptune RR (2012). Biomechanical Variables Related to Walking Performance 6-Months Following Post-Stroke Rehabilitation. *Clinical Biomechanics*; **27**:1017-22.
76. Feng W, Bowden MG and Kautz SA (2012). Review of Transcranial Direct Current Stimulation in Post-Stroke Recovery. *Topics in Stroke Rehabilitation*; **20**:68–77.
77. Raja B, Neptune RR and Kautz SA (2012). Magnitude and Rate of Limb Loading and Unloading During Hemiparetic Gait is Asymmetric and Related to Leg Kinematics. *J Rehab R&D*; **49**:1293-304.
78. Day KV, Kautz SA, Wu SS, Suter SP and Behrman AL (2012). Foot placement variability as a walking balance mechanism post-spinal cord injury. *Clinical Biomech*; **27**:145-50.
79. Bowden MG, Behrman AL, Woodbury M, Gregory CM, Velozo CA and Kautz SA (2012). Advancing locomotor rehabilitation measurement in physical therapy practice. *J Neurol Phys Ther*; **36**:38-44.
80. Kautz SA, Bowden MG, Clark DJ and Neptune RR (2011). Comparison of motor control deficits during treadmill and overground walking post-stroke. *Neurorehabilitation & Neural Repair*; **25**:756-765.
81. Peterson CL, Kautz SA, Neptune RR (2011) Muscle work is increased in pre-swing during hemiparetic walking. *Clinical Biomech*; **26**:859-866.
82. Peterson CL, Kautz SA and Neptune RR (2011). Braking and Propulsive Impulses Increase with Speed during Accelerated and Decelerated Walking. *Gait & Posture*; **33**:562-7.
83. Hall AL, Peterson CL, Kautz SA and Neptune RR (2011). Relationships between Muscle Contributions to Walking Subtasks and Functional Walking Status in Persons with Post-Stroke Hemiparesis. *Clinical Biomech*; **26**:509-15.
84. Allen JL, Peterson CL, Kautz SA and Neptune RR (2011). Step Length Asymmetry is Representative of Compensatory Mechanisms Used in Post-Stroke Hemiparetic Walking. *Gait & Posture*; **33**:538-43.
85. Nott CR, Zajac FE, Neptune RR and Kautz SA (2010). All joint moments significantly contribute to trunk angular acceleration. *J Biomech*; **43**:2648-52.
86. Peterson CL, Cheng J, Kautz SA and Neptune RR (2010). Leg extension is an important predictor of paretic leg propulsion in hemiparetic walking. *Gait & Posture*, **32**:451-6.
87. Peterson CL, Hall AL, Kautz SA and Neptune RR (2010). Pre-Swing Deficits in Forward Propulsion, Swing Initiation and Power Generation by Individual Muscles during Hemiparetic Walking. *J Biomech*, **43**:2348-55.
88. Trinastic, JP, Kautz SA, McGregor K, Gregory C, Bowden M, Benjamin MB, Kleim JA, Kleim E, Kurtzman M, Chang YL, Conway T, Crosson B (2010). An fMRI study examining differences in brain activity during active ankle dorsiflexion and plantarflexion. *Brain Imaging and Behavior*, **4**:121-31.

89. Balasubramanian CK, Neptune RR and Kautz SA (2010). Foot placement in a body reference frame during walking and its relationship to hemiparetic walking performance. *Clinical Biomech*, **25**:483-90.
90. Nair PM, Rooney KL, Kautz SA and Behrman AL (2010). Stepping with an ankle foot orthosis re-examined: A neuromechanical perspective for clinical decision making. *Clinical Biomech*, **25**:618-22.
91. Clark DJ, Neptune RR, Ting LH, Zajac FE and Kautz SA (2010). Modular organization of muscle activity underlying locomotor control and recovery following stroke. *J Neurophysiology*, **103**:844-57. PMID: 20007501.
92. Bowden MG, Clark DJ and Kautz SA (2010). Evaluation of abnormal synergy patterns post-stroke: relationship of the Fugl-Meyer assessment to hemiparetic locomotion. *Neurorehabilitation & Neural Repair*, **24**:328-37.
93. Van der Loos HFM, Worthen-Chaudhari, Schwandt DF, Bevly DM, and Kautz SA (2010). A split-crank bicycle ergometer uses servomotors to provide programmable pedal forces for studies in human biomechanics. *IEEE Transactions on Neural Systems & Rehabilitation Engineering*, **18**:445-52.
94. McGowan CP, Neptune RR Clark DJ and Kautz SA (2009). Modular control of human walking: Adaptations to altered mechanical demand. *J Biomech*, **43**:412-19.
95. Patten C, Gonzalez-Rothi EJ, Little VL and Kautz SA. (2009) Invited commentary on "Allowing intralimb kinematic variability during locomotor training poststroke improves kinematic consistency: a subgroup analysis from a randomized clinical trial." *Phys Ther*; 89:e1-2.
96. Beaman CB, Peterson CL, Neptune RR and Kautz SA (2009). Differences in self-selected and fastest comfortable walking in post-stroke hemiparetic persons. *Gait & Posture*, **31**:311-16.
97. Neptune RR, Zajac FE and Kautz SA (2009). Author's Response to Comment on "Contributions of the individual ankle plantar flexors to support, forward progression and swing initiation during walking" (Neptune et al., 2001) and "Muscle mechanical work requirements during normal walking: The energetic cost of raising the body's center-of-mass is significant" (Neptune et al., 2004). *J Biomech*, **42**:1786-89.
98. Neptune RR, Clark DJ and Kautz SA (2009). Modular control of human walking: A simulation study. *J Biomech*, **42**:1282-87.
99. Neptune RR, McGowan CP and Kautz SA (2009). Forward dynamics simulations provide insight into muscle mechanical work during human locomotion. *Exer Sports Sci Rev*, **37**:203-210.
100. Sasaki K, Neptune RR and Kautz SA (2009). The relationships between muscle, external, internal and joint mechanical work during normal walking. *J Experimental Biology*, **212**:738-744.
101. Balasubramanian CK, Neptune RR and Kautz SA (2009). Variability in spatiotemporal step characteristics and its relationship to walking performance post-stroke. *Gait & Posture*, **29**:408-414.

102. Woodbury ML, Howland D, McGuirk TE, Davis S, Senesac C, Kautz SA and Richards LG (2009). Effects of trunk restraint combined with intensive task-practice on post-stroke upper extremity reach and function: a pilot study. *Neurorehabilitation & Neural Repair*, **23**:78-91.
103. Sullivan KJ, Mulroy S and Kautz SA (2009). Walking Recovery and Rehabilitation after Stroke. In: *Stroke Recovery and Rehabilitation* (Edited by J Stein, Zorowitz, R Harvey, R Macko, and C Winstein), pp. 323-342. Demos Medical Publishing, New York, NY.
104. Bowden MG, Balasubramanian CK, Behrman AL and Kautz SA (2008). Validation of a Speed-Based Classification System Using Quantitative Measures of Walking Performance Post-Stroke. *Neurorehabilitation & Neural Repair*, **22**:672-675.
105. Goldberg EJ, Neptune RR and Kautz SA (2008). Can Treadmill Walking be used to Assess Propulsion Generation? *J Biomech*, **41**:1805-1808.
106. Neptune RR, Sasaki K and Kautz SA (2007). The effect of walking speed on muscle function and mechanical energetics. *Gait & Posture*, **28**:135-143.
107. Turns L, Neptune RR and Kautz SA (2007). Relationships between muscle activity and anteroposterior ground reaction forces in hemiparetic walking. *Arch Phys Med Rehab*, **88**:1127-1135.
108. Balasubramanian CK, Bowden MG, Neptune RR and Kautz SA (2007). Relationship between step length asymmetry and walking performance in subjects with chronic hemiparesis. *Arch Phys Med Rehab*, **88**:43-49.
109. Gregory C, Bowden MG, Jayaraman A, Shah P, Behrman AL, Kautz SA and Vandeborne K (2007). Resistance training and locomotor recovery after incomplete spinal cord injury: A case series. *Spinal Cord*, **45**:522-530.
110. Plummer P, Behrman AL, Duncan PW, Spigel P, Saracino D, Martin J, Fox E, Thigpen M and Kautz SA (2007). Effects of stroke severity and training duration on locomotor recovery after stroke: A pilot study. *Neurorehabilitation & Neural Repair*, **21**:137-151.
111. Bowden MG, Balasubramanian CK, Neptune RR and Kautz SA (2006). Anterior-Posterior Ground Reaction Forces as a Measure of Paretic Leg Contribution in Hemiparetic Walking. *Stroke*, **37**:872-876.
112. Kautz SA, Patten C and Neptune RR (2006). Does unilateral pedaling activate a rhythmic locomotor pattern in the non-pedaling leg in post-stroke hemiparesis?. *J Neurophys*, **95**:3154-3163.
113. Higginson JS, Zajac FE, Neptune RR, Kautz SA and Delp SL (2006). Muscle contributions to support in post-stroke hemiparetic gait. *J. Biomech*, **39**:1769-1777.
114. Higginson JS, Zajac FE, Kautz SA, Neptune RR, Burgar CG and Delp SL (2006). Musculoskeletal response to equinus foot placement. *Gait & Posture*, **23**:32-36.
115. Worthen LC, Kim M, Kautz SA, Lew HL, Kiratli J and Beaupré GS (2005). Key characteristics of walking correlate with bone density in chronic stroke survivors. *J. Rehab R&D*, **42**:761-768.

116. Kautz SA, Duncan PW, Perera S, Neptune RR and Sudenski SA (2005). Coordination of hemiparetic locomotion after post-stroke rehabilitation. *Neurorehabilitation & Neural Repair*, **19**:250-258.
117. Kautz SA and Patten C (2005). Interlimb influences on paretic leg muscle excitation. *J Neurophys*, **93**: 2460-2473.
118. Neptune RR, Zajac FE and Kautz SA (2004). Muscle mechanical work requirements during normal walking: the energetic cost of raising the body's center of mass is significant. *J Biomech*, **37**:817-825.
119. Neptune RR, Zajac FE and Kautz SA (2004). Muscle force redistributes segmental power for body progression during walking. *Gait Posture*, **19**:194-205.
120. Zajac FE, Neptune RR, and Kautz SA (2004). Authors response to Comments on Biomechanics and Muscle Coordination of Human Walking: Parts I and II. *Gait Posture*, **19**:208-209.
121. Zajac FE, Neptune RR, and Kautz SA (2003). Biomechanics and Muscle Coordination of Human Walking: Part II: Lessons from Dynamical Simulations and Clinical Implications *Gait Posture*, **17**:1-17.
122. Zajac FE, Neptune RR, and Kautz SA (2002). Biomechanics and Muscle Coordination of Human Walking: Part I: Introduction to Concepts, Power Transfer, Dynamics and Simulations. *Gait Posture*, **16**:215-232.
123. Pohl PS, Duncan PW, Perera S, Long J, Liu W, Zhou J and Kautz SA (2002). Rate of isometric knee extension strength development and walking speed after stroke. *J Rehab R & D*, **39**: 651-658.
124. Kautz SA and Neptune RR (2002). Biomechanical determinants of pedaling energetics: internal and external work are not independent. *Exer Sports Sci Rev*, **30**:159-165.
125. Kautz SA, Brown DA, Van der Loos HFM, and Zajac FE (2002). Mutability of bifunctional thigh muscle activity in pedaling due to contralateral leg force generation. *J Neurophys*, **88**:1308-1317.
126. Neptune RR, Kautz SA and Zajac FE (2001). Letter to the Editor - Comments on 'Propulsive adaptation to changing gait speed'. *J Biomech*, **34**: 1667-1668.
127. Neptune RR, Kautz SA and Zajac FE (2001). Contributions of the ankle plantar flexors to support, forward progression and swing initiation during walking. *J Biomech*, **34**: 1387-1398.
128. Neptune RR, and Kautz SA (2001). Muscle activation and deactivation dynamics: the governing properties in fast cyclical human movement performance? *Exer Sport Sci Rev*, **29**:76-81.
129. Chen G, Kautz SA and Zajac FE (2001). Simulation analysis of muscle activity changes with altered body orientations during pedaling. *J Biomech*, **34**:749-756.
130. Neptune RR and Kautz SA (2000). Knee joint loading in forward versus backward pedaling: implications for rehabilitation strategies. *Clinical Biomech*, **15**:528-535.

131. Ting LH, Kautz SA, Brown DA and Zajac FE (2000). Contralateral movement and extensor force generation alter flexion phase muscle coordination in pedaling. *J Neurophys*, **83**:3351-3365.
132. Neptune RR, Kautz SA and Zajac FE (2000). Muscle contributions to specific biomechanical functions do not change in forward versus backward pedaling. *J Biomech*, **33**:155-164.
133. Kautz SA, Neptune RR and Zajac FE (2000). General coordination principles elucidated by forward dynamics: Minimum fatigue does not explain muscle excitation in dynamic tasks. *Motor Control*, **4**:75-80.
134. Brown DA and Kautz SA (1999). Speed-dependent reductions of force output in people with poststroke hemiparesis. *Phys Ther*, **79**:919-930.
135. Ting LH, Kautz SA, Brown DA and Zajac FE (1999). Phase reversal of biomechanical functions and muscle activity in backward human locomotion. *J Neurophys*, **81**:544-551.
136. Kautz SA and Brown DA (1998). Relationships between timing of muscle excitation and impaired motor performance during cyclical lower extremity movement in post-stroke hemiplegia. *Brain*, **121**:515-526.
137. Ting, LH, Raasch, CC, Brown, DA, Kautz, SA and Zajac, FE (1998). Sensorimotor state of the contralateral leg affects ipsilateral muscle coordination of pedaling. *J Neurophys*, **80**: 1341-1351.
138. Brown DA, and Kautz SA (1998). Increased workload enhances force output during pedaling exercise in persons with poststroke hemiplegia. *Stroke*, **29**:598-606.
139. Neptune RR, Kautz SA and Hull ML (1997). The effect of pedaling rate on coordination in cycling. *J Biomech*, **30**:1051-1058.
140. Brown DA, Kautz SA and Dairaghi CA (1997). Muscle activity adapts to anti-gravity posture during pedaling in persons with post-stroke hemiplegia. *Brain*, **120**: 825-837.
141. Brown DA, Kautz SA and Dairaghi CA (1996). Muscle activity patterns are altered during pedaling at different body orientations. *J Biomech*, **29**: 1349-1356.
142. Kautz SA and Hull ML (1995). Dynamic optimization analysis for equipment setup problems in endurance cycling. *J Biomech*, **28**: 1391-1401.
143. Kautz SA and Hull ML (1995). Optimization analysis: A tool for improving cycling performance. In: *High Tech Cycling* (Edited by E. Burke), pp. 117-143. Human Kinetics, Champaign IL.
144. Kautz SA, Hull ML and Neptune RR (1994). A comparison of muscular mechanical energy expenditure and internal work in cycling. *J Biomech*, **27**: 1459-1467.
145. Kautz SA and Hull ML (1993). A theoretical basis for interpreting the force applied to the pedal in cycling. *J Biomech*, **26**:155-165.
146. Hull ML, Williams M, Williams K and Kautz SA (1992). Physiological response to cycling with both circular and non-circular chainrings. *Med Sci Sports Exer*, **24**: 1114-1122.

147. Hull ML, Kautz SA and Beard A (1991). An angular velocity profile in cycling derived from mechanical energy analysis. *J Biomech*, **24**:577-586.
148. Coyle EF, Feltner ME, Kautz SA, Hamilton M, Montain S, Baylor AM, Abraham L and Petrek G (1991). Physiological and biomechanical factors associated with elite endurance cycling performance. *Med Sci Sports Exer*, **23**: 93-107.
149. Kautz SA, Feltner ME, Coyle EF and Baylor AM (1991). Pedaling technique of elite endurance cyclists: changes with increasing workload at constant cadence. *Int J Sports Biomech*, **7**: 29-53.
150. Kautz SA and Sclater JG (1988). Internal block deformation in clay models and applications to regions of extension. *Tectonics* **7**:823-832.

Submitted Articles

Articles in Conference Proceedings

1. Van der Loos HFM, Kautz SA, Schwandt DF, Anderson J, Chen G, and Bevly DM (2002). A split-crank, servomotor-controlled bicycle ergometer design for studies in human biomechanics. Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems, Lausanne, Switzerland, pp 1409-1414.
2. Ting LH, Kautz SA, Brown DA, Van der Loos HFM and Zajac FE (1998). Bilateral integration of sensorimotor signals during pedaling. *Ann N Y Acad Sci*; 860:513-516.
3. Kautz SA, Brown DA and Dairaghi CA (1994): Effects of increased exertion on motor performance during pedaling exercise in a neurologically normal population. In: *Vestibular and Neural Front: Proceedings of the 12th International Symposium on Posture and Gait* (Edited by K. Taguchi, M. Igarashi, and S. Mori), pp. 223-226. Elsevier, Amsterdam.
4. Brown DA, Burgar CG, Kautz SA, Dairaghi CA, and Gabrielli S (1994): Improving lower extremity force symmetry in individuals with hemiplegia. In *Vestibular and Neural Front: Proceedings of the 12th International Symposium on Posture and Gait* (Edited by K. Taguchi, M. Igarashi, and S. Mori), pp. 263-266. Elsevier, Amsterdam.
5. Kautz SA and Hull ML (1991). The relationship between mechanical energy expenditure and internal work during cycling. In *Advances in Bioengineering* (Edited by R. Vanderby), Vol. BED-20, pp. 57-61. ASME, New York.

Published Abstracted Scientific Presentations

1. Zavaliangos-Petropulu A, Banaj N, Barisano G, Borich MR, Brodtmann A, Buetefisch CM, Charalambous CC, Ciullo V, Conforto AB, Cramer SC, Dacosta- Aguayo R, Feng W, Hayward KS, Hordacre B, Kautz SA, Khlif MS, Kim H, Kuceyeski A, Lin JD, Lo B, Lohse KR, Lotze M, MacIntosh BJ, Mataro M, Mohamed FB, Ramos-Murguialday A, Piras F, Robertson AD, Schweighofer N, Seo NJ, Shiroishi MS, Spalletta G, Thielman GT, Ward NS, Winstein CJ, Wolf SL, Wong KA, Jahanshad N, Thompson PM, Liew S-L, ENIGMA Stroke Recovery Working Group (2021) Chronic stroke sensorimotor impairment correlates with spared hippocampal volume: An ENIGMA Analysis. Accepted to the Organization for Human Brain Mapping Virtual Conference
2. Lewallen LK, Kautz SA, and Neptune RR (2020). Assessment of Turning Performance and Coordination in Individuals Post-Stroke. American Society of Biomechanics, Virtual conference,

July 2020.

3. Srivastava S, Seamon BA, Marebwa BK, Bonilha L, Brown TR, Neptune RR and Kautz SA (2020). Relationship Between Walking Coordination and Motor Pathways Recovery Following Stroke. American Society of Biomechanics, Virtual conference, July 2020.
4. Seamon BA, Kautz SA, Velozo C (2020) Development and Evaluation of an Activities-Specific Balance Confidence Scale Computerized Adaptive Test for Individuals Post-Stroke. Platform presentation, South Carolina Physical Therapy Association Annual Conference, February 2020, Charleston, SC,
5. Chhatbar P, DeVries W, Grattan E, Hutchison S, Kautz SA and Feng W (2020). Differential Cortical Effect Modulated by Anodal, Cathodal and Bihemispheric Transcranial Direct Current Stimulation (tDCS) in Patients with Ischemic Stroke. International Stroke Conference, February 2020, Los Angeles, CA.
6. Chhatbar P, DeVries W, Grattan E, Hutchison S, Kautz SA and Feng W (2020). Further Evidence of Safety and Tolerability on 4 mA Transcranial Direct Current Stimulation (tDCS) in Patients with Ischemic Stroke. International Stroke Conference, February 2020, Los Angeles, CA.
7. Ryan E, Ross RE, George MS, Kautz SA, Woodbury ML, Gregory CM (2019): Aerobic exercise as a primer of neuroplasticity: A case report from two chronic stroke survivors. VA VISN 7 Research Meeting, November 2019, Birmingham, AL
8. Kindred JH, Kautz SA, Cence BJ, Chesnutt A, Bowden MG (2019): Repetitive Transcranial Magnetic Stimulation of the Lower Extremities: Can We Improve Current Physical Rehabilitation Practices Post-Stroke? VA VISN 7 Research Meeting, November 2019, Birmingham, AL
9. Seamon BA, Kautz, SA, Velozo, C: Rasch Analysis of the Activities-Specific Balance Confidence Scale in Individuals Post-Stroke. Poster presentation, 2019, American Congress of Rehabilitation Medicine, Chicago, IL
10. Seamon BA, Srivastava S, Neptune RR, Perry L, Patten C, Kautz, SA: Influence of Body Weight Supported Treadmill Training Parameters on Muscle Coordination in Hemiparetic Walking. Poster Presentation, 2019, International Society of Posture and Gait Research, Edinburgh, Scotland
11. Roelker, S.A., Kautz, S.A., and Neptune R.R. (2019). Muscle contributions to mediolateral foot placement during straight-line walking. Gait and Clinical Motion Analysis Society Annual Meeting, Mar 26-29, Frisco, TX.
12. Brough, L.G., Kautz, S.A., and Neptune R.R. (2019). Muscle contributions to late braking force in post-stroke hemiparetic gait: a simulation study. Gait and Clinical Motion Analysis Society Annual Meeting, Mar 26-29, Frisco, TX.
13. Vistamehr, A., Kautz, S.A., Bowden, M.G. and Neptune, R.R. (2018). The influence of locomotor training on dynamic balance during steady-state walking post-stroke. Annual Meeting of the American Congress of Rehabilitation Medicine, October 2018, Dallas, TX.
14. Dean JC, Bowden MG and Kautz SA (2018). Post-stroke stiff knee gait is linked to mis-timed braking forces. Annual Meeting of the American Society of Biomechanics, August 2018, Rochester, MN.
15. Revuelta GJ, Embry A, Jenkins S, Elm JJ, Lee P, and Kautz SA (2018). Surrogate Markers for Freezing of Gait Severity. Freezing of Gait 2018, June 2018, Leuven, Belgium.
16. Finetto C, Kautz SA, Summers P, Li X and George MS (2018). Introducing 'Erik', a TMS training and testing phantom. Annual Meeting of the Clinical TMS Society, May 2018, New York, NY.
17. Dean JC, Hydar A, Monsch E and Kautz SA (2018). Integration of stroke recovery research with clinical physical therapy in South Carolina. Annual Meeting of the South Carolina Chapter of the American Physical Therapy Association, March 2018, Charleston, SC.
18. Lieuw SL et al on behalf of the ENIGMA Stroke Recovery working group (2018). Subcortical Volumes Associated With Post-Stroke Motor Performance Vary Across Impairment Severity, Time Since Stroke, and Lesion Laterality: an ENIGMA Stroke Recovery Analysis. International Stroke Conference, February 2018, Los Angeles, CA.
19. Chhatbar PY, Kautz SA, Takacs I, Rowland NC, Revuelta GJ, George MS, Bikson M, Feng W

- (2018). Evidence of transcranial direct current stimulation-generated electric fields at subthalamic level in human brain in vivo. International Stroke Conference, February 2018, Los Angeles, CA.
20. Chhatbar P, Chen R, DeVries W, Lee HM, George MS, Adams RJ, Kautz SA, and Feng W (2017). Safety and Tolerability of Transcranial Direct Current Stimulation to Stroke Patients – A Phase I Current Escalation Study. Annual Meeting of the American Academy of Physical Medicine and Rehabilitation, October 2017, Denver, CO.
 21. Vistamehr, A., Kautz, S.A., Bowden, M.G. and Neptune, R.R. (2017). The influence of locomotor training on mediolateral dynamic balance in individuals with post-stroke hemiparesis. Annual Meeting of the American Society of Biomechanics, August 2017, Boulder, CO.
 22. Chhatbar P, Chen R, DeVries W, Lee HM, George MS, Adams RJ, Kautz SA, and Feng W (2017). A Phase I Current Escalation Study for Transcranial Direct Current Stimulation in Ischemic Stroke Patients. International Stroke Conference, February 2017, Houston, TX.
 23. Revuelta GJ, Deardorff R, Embry A, Lench D, Jenkins S, Turner T, Hanlon C, Kautz SA and Jensen J (2016). Connectivity and behavioral changes in patients with Parkinson’s Disease and Freezing of Gait. Annual Meeting of the American Neurological Association, October 2016, Baltimore, MD.
 24. Srivastava S, Patten C and Kautz SA (2016). Comparing muscle activity patterns post-stroke with normative profile at self-selected walking speed. Neural Control of Movement Annual Meeting. April 2016, Montego Bay, Jamaica.
 25. Dean JC, Embry AE, Stimpson KH, Kautz SA. The role of hip positioning accuracy in post-stroke gait. *American Physical Therapy Association Combined Sections Meeting*. Anaheim, California, USA. February 17-20, 2016.
 26. Kautz SA (2015). National Center of Neuromodulation for Rehabilitation. Southeast IDeA Meeting, November 2015, Biloxi, MS.
 27. Vistamehr, A., Kautz, S.A. and Neptune, R.R. (2015). The influence of solid ankle-foot-orthoses on forward propulsion and dynamic balance in healthy adults during walking. Annual Meeting of the American Society of Biomechanics, August 5-8, Columbus, OH.
 28. Vistamehr, A., Carter, L.M., Kautz, S.A., Bowden, M.G. and Neptune, R.R. (2015). A comparison of measures to assess balance in post-stroke subjects. Annual Meeting of the American Society of Biomechanics, August 5-8, Columbus, OH.
 29. Vistamehr, A., Kautz, S.A., Bowden, M.G. and Neptune, R.R. (2015). The influence of locomotor training on dynamics balance and its relation to increased walking speed in post-stroke hemiparetic subjects. Annual Meeting of the American Society of Biomechanics, August 5-8, Columbus, OH.
 30. Chhatbar P, Enabore JA, Adams R, Kautz SA, and Feng W (2015). Dose Response Relationship in Transcranial Direct Current Stimulation Stroke Motor Recovery Studies. International Stroke Conference, February 2015, Nashville, TN.
 31. Clark DJ, Kautz SA, Bauer A, Chen YT and Christou EA. Synchronous electromyogram activity reveals the CNS contribution to mobility tasks in older adults. Annual Meeting of the Gerontological Society of America. New Orleans LA, November 2014
 32. Kautz SA, Routson RL. Neptune RR. Predicting biomechanical deficits from impaired module coordination after stroke, in session “Muscle Synergy Analysis: From Predictive to Descriptive”, World Congress of Biomechanics, Boston, MA July 2014.
 33. Routson RL, Kautz SA, Neptune RR. Modular Organization in Healthy and Post-Stroke Hemiparetic Gait across Changing Task Demands. World Congress of Biomechanics, Boston, MA July 2014.
 34. Kautz SA. Improving stroke mobility and the crucial role of measuring coordination and biomechanics, in session “Innovative Techniques for Improving Gait: Stroke & Cerebral Palsy”, World Congress of Biomechanics, Boston, MA July 2014.
 35. Kautz SA. Muscle synergy patterns in hemiparetic walking performance. Workshop on Muscle Synergies. Venice, Italy, April 2014.

36. Feng W, Gundran A, Athreya M, Perry L, Kautz SA, Adams R (2013). A Simple Bedside Grading Scale Can Predict Severe Post-Stroke Upper-Limb Spasticity. International Stroke Conference, February 2014, San Diego, CA
37. Feng W, Gundran A, Tabesh A, Perry L, Athreya M, Woodbury M, Kautz SA and Adams R (2013). A Grading Scale Combining Clinical Assessment and Neuro-Imaging Predicts Severe Post-Stroke Limb Spasticity. ACRM-ASNR Progress in Rehabilitation Research Annual Conference, November 2013, Orlando, FL
38. Balasubramanian C, Kautz SA and Velozo C (2013). Construct validity of the Fugl-Meyer assessment of lower extremity to evaluate motor impairment post stroke. ACRM-ASNR Progress in Rehabilitation Research Annual Conference, November 2013, Orlando, FL
39. Rogers H, Nolan K, Abrams G, Annaswamy T, Brandstater M, Browne B, Burnfield J, Feng W, Freed, M, Geis C, Greenberg J, Gudesblatt M, Ikramuddin F, Jayaraman A, Kautz SA, Lutsep H, Madhavan S, Meilahn J, Pease W, Rao N, Seetharama S, Sethi P, Turk M, Wallis RA, and Kuffa C (2013). Randomized Controlled Trial of Peroneal Nerve Functional Electrical Stimulation versus Ankle-Foot Orthosis in Chronic Stroke. ACRM-ASNR Progress in Rehabilitation Research Annual Conference, November 2013, Orlando, FL
40. Lauzière S, Miéville C, Duclos C, Kautz SA and Nadeau S (2013). Perception of locomotor asymmetry in people with hemiparesis following a stroke. Canadian Physiotherapy Association Congress 2013, May 2013, Montreal, Quebec, Canada.
41. Woodbury ML, Velozo CV, Burik JK and Kautz SA (2013). Patient-targeted upper extremity rehabilitation after stroke: research work in progress. American Occupational Therapy Association Meeting, ?
42. Raja B, Neptune RR, Behrman AL, Bowden MG and Kautz SA (2013). Response of non-paretic leg to locomotor training post-stroke. American Physical Therapy Association Combined Sections Meeting, February, 2013, New Orleans, LA
43. Bowden MG, Behrman AL, Neptune RR, Gregory CM and Kautz SA (2013). Locomotor Rehabilitation of Individuals with Chronic Stroke: Difference between Responders and Non-Responders. American Physical Therapy Association Combined Sections Meeting, February, 2013, New Orleans, LA
44. Fox EJ, Tester NJ, Trimble S, Kautz SA, Howland DR and Behrman AL (2013). Children with severe incomplete spinal cord injury exhibit greater lower extremity muscle activation during locomotor tasks compared with tests of voluntary, isolated joint movements. American Physical Therapy Association Combined Sections Meeting, February, 2013, Chicago, IL.
45. Bowden MG, Gregory CM and Kautz SA (2012). Center of mass acceleration as a surrogate for force production after neurological injury: effects of inclined treadmill walking. Annual Meeting of the Society for Neuroscience, November 2012, New Orleans, LA.
46. Clark DJ, Kautz SA, Bauer A, Chen Y-T and Christou EA (2012) Task-specific differences in the cortical contribution to walking are revealed by 30-60Hz oscillatory EMG activity. Annual Meeting of the American Society of Biomechanics, August 2012, Gainesville, FL.
47. Allen JL, Kautz SA and Neptune RR (2012). The influence of merged muscle excitation modules on post-stroke hemiparetic walking performance. Annual Meeting of the American Society of Biomechanics, August 2012, Gainesville, FL.
48. Routson RL, Bowden MG, Kautz SA and Neptune RR (2012). Comparison of module quality and walking performance of hemiparetic subjects pre and post locomotor rehabilitation therapy. Annual Meeting of the American Society of Biomechanics, August 2012, Gainesville, FL.
49. Clark DJ, Kautz SA, Bauer A, Chen YT and Christou EA. Task-specific differences in the cortical contribution to walking are revealed by 30-60Hz oscillatory EMG activity. Pepper Older American Independence Centers Annual Meeting, Bethesda MD, April 2012.
50. Embry AE, Bowden MG, Gregory CM, Behrman AL, Neptune RR, and Kautz SA. Relationship between personal factors and behavioral outcomes after locomotor rehabilitation intervention post-stroke. American Physical Therapy Association Combined Sections Meeting, February,

2012, Chicago, IL.

51. Fox EJ, Kautz SA, Day KV Suter SP Clark DJ, Howland DR and Behrman AL (2012). Mechanisms of walking recovery in adults with incomplete spinal cord injury. American Physical Therapy Association Combined Sections Meeting, February, 2012, Chicago, IL.
52. Kautz SA (2011). Optimizing patients outcomes – What does movement analysis reveal about how locomotor rehabilitation works? Optimizing the Management of Spastic Patients, November 2011, Nice, France.
53. Clark DJ, Behrman AL and Kautz SA (2011). Does foot placement accuracy during walking reveal the integrity of supraspinal locomotor control following stroke? Annual Meeting of the Society for Neuroscience, November 2011, Washington DC.
54. Fox EJ, Kautz SA, Day KV Suter SP Clark DJ, Howland DR and Behrman AL (2011). Mechanisms of walking recovery following locomotor training in adults with incomplete spinal cord injury. Annual Meeting of the Society for Neuroscience, November 2011, Washington DC.
55. Peterson CL, Kautz SA and Neptune RR (2011). Paretic muscle work is increased in pre-swing during hemiparetic walking. Annual Meeting of the American Society of Biomechanics, August 2011, Long Beach, CA.
56. Allen JL, Kautz SA and Neptune RR (2011). Modular control of walking: A 3D simulation study. Annual Meeting of the American Society of Biomechanics, August 2011, Long Beach, CA.
57. Allen JL, Kautz SA and Neptune RR (2011). Individual muscle contributions to propulsion differs between post-stroke hemiparetic subjects. XIII International Symposium on Computer Simulation in Biomechanics, June 2011, Leuven, Belgium.
58. Allen JL, Kautz SA and Neptune RR (2011). Modular control of mediolateral ground reaction forces during walking. International Society for Biomechanics, June 2011, Brussels, Belgium.
59. Allen JL, Kautz SA and Neptune RR (2011). Step length asymmetry is indicative of compensatory mechanisms used to overcome plantarflexor weakness in post-stroke hemiparetic gait. International Society for Biomechanics, June 2011, Brussels, Belgium.
60. Kautz SA, Nott CR and Neptune RR (2011). Angular momentum based assessment of dynamic balance performance in hemiparetic walking. Neural Control of Movement Annual Meeting. April 2011, San Juan, Puerto Rico.
61. EJ Fox, NJ Tester, D Clark, DR Howland, SA Kautz, AL Behrman (2011). Preserved and new mechanisms of locomotor control are evident after chronic, severe pediatric spinal cord injury. SpineCare Conference on Innovation and Practice in Childhood Spinal Conditions. Sydney, Australia. March 2011.
62. Bowden MG, Behrman AL, Gregory CM, Patten C, Kautz SA (2011). Translational Biomechanics: Development of Portable Quantitative Measurement. American Physical Therapy Association Combined Sections Meeting, February, 2011, New Orleans, LA.
63. Fox E, Howland D, Kautz SA and Behrman AL (2011). Modular control is similar across locomotor tasks in children with incomplete spinal cord injury. American Physical Therapy Association Combined Sections Meeting. February 2011, New Orleans, LA.
64. Fox EJ, Tester NJ, Bergschneider FP, Kautz SA, Howland DR, Behrman AL. Neuromuscular Control across Locomotor Tasks in Children with Spinal Cord Injury. Annual Meeting of the Society for Neuroscience, San Diego, CA. Nov 2010.
65. Bowden MG, Clark DJ, Neptune RR, Kautz SA. Restitution of muscle activation patterns in chronic stroke. 20th Annual Conference of the Society for the Neural Control of Movement. April, 2010. Naples, FL.
66. Clark DJ, Neptune RR and Kautz SA. Voluntary modulation of step length during walking in persons post-stroke. 20th Annual Conference of the Society for the Neural Control of Movement, Naples FL, April 2010.
67. Balasubramanian, C.K., Neptune, R.R., Kautz, S.A. (2010). Patterns of foot placement relative to the pelvis in post-stroke hemiparetic walking: Insights into coordination of hemiparetic locomotion.

- 20th Annual Conference of the Society for the Neural Control of Movement. April, 2010. Naples, FL.
68. Patten C, Wyatt M, Jonkers I and Kautz SA (2010). An instrumented step beyond gait speed: Mechanisms of Gait Dysfunction and Recovery Post-stroke. American Physical Therapy Association Combined Sections Meeting. February 2010, San Diego, CA. (Podium presentation and workshop)
 69. Bowden M, Klimstra M, Zehr P and Kautz SA (2010). Modulation of Cutaneous Reflexes Post-Stroke: Relationship to Walking Performance and Interlimb Coordination. American Physical Therapy Association Combined Sections Meeting. February 2010, San Diego, CA.
 70. Fox EJ, Kautz SA, Clark DJ, Day KV, Suter SP and Behrman AL. The effect of incomplete spinal cord injury on the modular control of walking. American Physical Therapy Association Combined Sections Meeting. San Diego, CA, February 2010.
 71. Raja B, Bowden M Neptune RR and Kautz SA (2010). Does the Performance Of Non-Paretic Leg Change After Locomotor Training Post-Stroke? Kinematic and Kinetic Gait Analysis. American Physical Therapy Association Combined Sections Meeting. February 2010, San Diego, CA.
 72. McGowan CP, Kautz SA and Neptune RR (2009). Modular control of human movement: adaptations to altered mechanical demand. International Society of Biomechanics. July 2009, Cape Town, South Africa.
 73. Neptune RR, Clark DJ and Kautz SA (2009). Modular control of human walking: a modeling and simulation study. American Society of Mechanical Engineers 2007 Summer Bioengineering Conference. June 2009, Lake Tahoe, CA.
 74. Fox E, Kautz SA, Clark DJ, Suter S, Day K, Gill L and Behrman AL (2009). Reduced modular complexity accounts for muscle activation during walking in persons with incomplete spinal cord injury. 19th Conference of the International Society for Gait and Posture Research. June 2009, Bologna, Italy.
 75. Day K, Kautz SA and Behrman AL (2009). Head stabilization: one dimension of balance control during walking post-spinal cord injury. 19th Conference of the International Society for Gait and Posture Research. June 2009, Bologna, Italy.
 76. Kautz SA, Clark DJ, Nott C and Neptune RR (2009). Computational and experimental validation of the relationship between experimentally derived muscle activation modules and their biomechanical consequences. Theoretical ideas in motor systems neuroscience and their capacity for falsification. April 2009, Kona, Hawaii.
 77. Beamen C, Peterson CL, Neptune RR and Kautz SA (2009). Differences in Self-Selected and Fastest Comfortable Walking in Post-stroke Hemiparetic Persons. 26th Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. March 2009, Houston, TX.
 78. Bowden MG, Clark DJ, and Kautz SA (2009). Evaluation of Abnormal Synergy Patterns Post-Stroke: Relationship of Clinical Examination to Hemiparetic Locomotion. American Physical Therapy Association Combined Sections Meeting. February 2009, Las Vegas, NV. (Podium presentation)
 79. Gregory C, Bowden MG, Patten C, Vandenborne K, Kautz SA (2009). Improved Metabolic Efficiency Post Stroke is Associated with Increased Walking Velocities. American Physical Therapy Association Combined Sections Meeting, February, 2009, Las Vegas, NV.
 80. Riesterer K, Beaulieu AN, Gregory C, Bowden MG, Kautz SA, Vandenborne K (2009). Lower-Extremity Strength and Activation Deficits Correlate with Maximum Gait Speed Following Incomplete Spinal Cord Injury. American Physical Therapy Association Combined Sections Meeting, February, 2009, Las Vegas, NV.
 81. Day KV, Gill L, Kautz SA and Behrman AL (2009). Does compensation with an assistive device mask recovery of dynamic walking stability after spinal cord injury. American Physical Therapy Association Combined Sections Meeting. February 2009, Las Vegas, NV.

82. Fox EJ, Tester NJ, Subramanian S, Kautz SA, Howland D and Behrman AL (2009). Patterns of motor recovery in a child with severe, incomplete SCI. American Physical Therapy Association Combined Sections Meeting. February 2009, Las Vegas, NV. (Podium presentation)
83. Sasaki, K., Neptune, R.R. and Kautz, S.A. (2008). Differences between joint work and muscle fiber work during steady-state walking. North American Congress on Biomechanics (NACOB). August 5-9, Ann Arbor, MI
84. Peterson, C.L., Neptune, R.R. and Kautz, S.A. (2008). Differences in correlations of anterior-posterior ground reaction forces with paretic and control leg gait variables. North American Congress on Biomechanics (NACOB). August 5-9, Ann Arbor, MI
85. Allen, J.L., Bowden, M.G., Kautz, S.A. and Neptune, R.R. (2008). Mechanisms underlying increased walking speed after rehabilitation in persons with post-stroke hemiparesis. North American Congress on Biomechanics (NACOB). August 5-9, Ann Arbor, MI
86. Kautz SA, Clark DJ and Neptune RR (2008). Deficits in voluntary modulation of step length in hemiparetic walking. Neural Control of Movement Annual Meeting. April 2008, Naples, FL.
87. Bowden MG and Kautz SA (2008). Evaluation of abnormal synergy patterns post-stroke: relationship of clinical examination to hemiparetic locomotion. Neural Control of Movement Annual Meeting. April 2008, Naples, FL.
88. Balasubramanian CK, Knight R, Subramanian S, Neptune RR and Kautz SA (2008). Evaluation of the neuromotor mechanisms underlying step length asymmetry patterns during hemiparetic walking using a novel methodology of step-by-step variability in gait data. Neural Control of Movement Annual Meeting. April 2008, Naples, FL.
89. Clark DJ, Subramanian S, Neptune RR and Kautz SA (2008). Fewer Basic Activation Patterns Account for Lower Extremity EMG During Walking in Adults Post-Stroke Compared to Healthy Controls. Neural Control of Movement Annual Meeting. April 2008, Naples, FL.
90. Fox E, Tester N, Subramanian S, Kautz SA, Howland D and Behrman AL (2008). Two Muscle Synergies Account for Pattern of Walking Recovery in a Child with SCI. Neural Control of Movement Annual Meeting. April 2008, Naples, FL.
91. Tester N, Howland D, Kautz SA, Zehr EP, Behrman AL (2008). Interlimb Coordination during Walking Post-SCI, Christopher and Dana Reeve Foundation Spinal Cord Symposium 2008. May 2008, Atlanta, GA.
92. Woodbury ML, Richards LG, McGuirk TE, Davis SB., Senesac C, Howland D and Kautz SA (2008) Can "Normal" Post-Stroke Reach be Retrained? American Occupational Therapy Association National Conference. April 2008, Long Beach, CA.
93. Kautz SA, Clark DJ and Neptune RR (2008). Theoretical and experimental analyses of walking in persons with post-stroke hemiparesis, 25th Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 2008, Houston, TX.
94. Allen CL, Bowden MG, Kautz SA and Neptune RR (2008). Identifying contributing factors to increased paretic propulsion post-rehabilitation: a case study. 25th Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 2008, Houston, TX.
95. Bowden MG, Balasubramanian CK, Behrman AL and Kautz SA (2008). Validation of a speed-based classification system using quantitative measures of walking performance post-stroke. APTA Combined Sections Meeting. February 2008, Nashville, TN.
96. Day KV, Gill L, Kautz SA and Behrman AL (2008). Exploring measures of walking stability in incomplete spinal cord injury. APTA Combined Sections Meeting. February 2008, Nashville, TN. (Podium presentation)
97. Woodbury ML, Richards LG, McGuirk TE, Davis S, Senesac C, Howland D and Kautz SA (2007). Effect of intensive massed task-practice with and without trunk restraint on post-stroke upper extremity reaching kinematics and functional ability. Annual Meeting of the Society for Neuroscience, November 2007, San Diego, CA.

98. Richards LG, Woodbury ML, McGuirk TE, Davis S, Patterson T and Kautz SA (2007). Relationship of grasp and transport kinematics of a reaching-to-target task before and after functional task practice: a case study. Annual Meeting of the Society for Neuroscience, November 2007, San Diego, CA.
99. McGuirk TE, Woodbury ML, Kautz SA and Richards LG (2007). A complete description of post-stroke upper extremity 3D kinematics in both proximal and distal joints: a new experiment protocol. Annual Meeting of the Society for Neuroscience, November 2007, San Diego, CA.
100. Neptune RR, Sasaki K and Kautz SA (2007). Muscle mechanical work adaptations with increasing walking speed. American Society of Mechanical Engineers 2007 Summer Bioengineering Conference. June 2007, Keystone, CO.
101. Peterson CL, Neptune RR and Kautz SA (2007). Inappropriate flexor synergies influence walking mechanics that reduce paretic propulsion in persons with post-stroke hemiparesis. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
102. Bowden MG, Behrman AL and Kautz SA (2007). Mechanisms of response to locomotor training post-stroke: systematic assessment of motor pattern restitution. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
103. Balasubramanian CK, Bowden MG, Neptune RR and Kautz SA (2007). Gait variability after a stroke and its relationship to hemiparetic severity and walking balance. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
104. Kautz SA, Balasubramanian CK, Bowden MG and Neptune RR (2007). Comparison of treadmill and overground walking at self-selected speed in persons with post-stroke hemiparesis. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
105. Kautz SA, Patten C, Neptune RR, Worthen L and Kim CM (2007). The influence of mechanical load on the locomotor pattern in persons with post-stroke hemiparesis. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
106. Neptune RR, Sasaki K and Kautz SA (2007). Muscle contributions to trunk and leg propulsion with increasing walking speed. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
107. Behrman AL, Fuller L, Stickles S, Day K, Nair P, Phadke C, Bowden MG, and Kautz SA (2007). Differential effects of robotically- versus manually-assisted locomotor training on stepping performance after incomplete spinal cord injury. 18th Conference of the International Society for Gait and Posture Research. July 2007, Burlington, VT.
108. Bowden MG, Behrman AL and Kautz SA (2007). Joint power response to locomotor training post-stroke: preliminary findings. Innovations in balance and locomotor rehabilitation: the translation from fundamental science to clinical applications. July 2007, Montreal, Quebec, Canada.
109. Balasubramanian CK and Kautz SA (2007). Step length asymmetry patterns and balance performance in persons with post-stroke hemiparesis. Innovations in balance and locomotor rehabilitation: the translation from fundamental science to clinical applications. July 2007, Montreal, Quebec, Canada.
110. Day KV, Thigpen MT, Kautz SA and Behrman AL (2007). Quantifying dynamic walking stability in persons with incomplete spinal cord injury. Innovations in balance and locomotor rehabilitation: the translation from fundamental science to clinical applications. July 2007, Montreal, Quebec, Canada. (Was one of two award winners for best graduate student poster presentation)
111. Balasubramanian CK, Bowden MG, Neptune RR and Kautz SA (2007). EMG in stroke subjects with abnormal synergies: implications for walking rehabilitation. APTA Combined Sections Meeting. February 2007, Boston, MA.
112. Peterson CL, Neptune RR and Kautz SA (2007). Walking mechanics limit paretic plantar flexor contributions to propulsion in persons with post-stroke hemiparesis. 24rd Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 2007, Houston, TX.

113. Plummer P, Behrman AL, Saracino D, Martin J, Fox E, Kautz SA and Duncan PW (2007). Functionally Significant Recovery of Walking Speed after Stroke in Patients with Moderate and Severe Impairment. International Stroke Conference, February 2007, San Francisco, CA.
114. Behrman AL, Bowden MG, Day K, Fuller L, Herget B, Knight R, Nair P, Phadke C and Kautz SA (2006). Differential effects of robotically- versus manually-assisted locomotor training on stepping performance after incomplete spinal cord injury. Robotics in Rehabilitation Symposium, September 2006, Zurich, Switzerland.
115. Bowden MG, Turns LJ, Neptune RR, Balasubramanian CK, Knight R, Peterson C and Kautz SA, (2006). Paretic leg contribution in hemiparetic walking: mechanisms of paretic propulsion. Neural Control of Abnormal Movement, May 2006, Key Biscayne, FL.
116. Balasubramanian CK, Bowden MG, Neptune RR and Kautz SA (2006). Relationship between asymmetrical step lengths and hemiparetic walking performance. Neural Control of Movement annual meeting, May 2006, Key Biscayne, FL.
117. Kautz SA, Bowden MG, Balasubramanian CK and Neptune RR (2006). A new measure of paretic leg contribution in hemiparetic walking. International Stroke Conference, February 2006, Kissimmee, FL.
118. Turns LJ, Peterson CL, Neptune RR and Kautz SA (2006). Paretic leg muscle activity and walking mechanics contribute to asymmetric hemiparetic gait. 23rd Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 9-10, Houston, TX.
119. Gregory CM, Bowden M, Kautz S, Vandenborne K. Resistance training and locomotor recovery after incomplete spinal cord injury. American Paraplegia Society-Annual Conference, Las Vegas, NV, 2005.
120. Higginson JS, Zajac FE, Neptune RR, Kautz SA, and Delp SL (2005). Reduced plantarflexor contributions to support in post-stroke hemiparetic gait. Meeting of the International Society of Biomechanics, August 2005, Cleveland, OH.
121. Worthen LC, Kim CM and Kautz SA (2005). Design of a gait laboratory to enable biomechanical analysis of individuals with post-stroke walking deficits: force platform positioning. Meeting of the International Society of Biomechanics, August 2005, Cleveland, OH.
122. Kautz SA, Balasubramanian CK, Bowden MG and Neptune RR (2005). Paretic leg contributions to walking speed in persons with post-stroke hemiparesis. ASME Summer Bioengineering Conference, June 2005, Vail, CO.
123. Higginson JS, Zajac FE, Neptune RR, Kautz SA, and Delp SL (2005). Differences in muscle contributions to support in slow gait. Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2005, Portland, OR.
124. Kautz SA (2004) Coordination of hemiparetic locomotion after post-stroke rehabilitation. ACRM-ASNR Annual Meeting, Ponte Vedra Beach, FL, September 2004.
125. Kautz SA, Patten C; Neptune RR, Worthen L and Kim CM (2003) Bilateral coordination deficits differ with post-stroke motor recovery status. Annual Meeting of the Society for Neuroscience, November 2003, New Orleans, LA.
126. Higginson JS, Zajac FE, Kautz SA, Neptune RR, Delp SL and Burgar CG (2003). Can intrinsic mechanics of equinus result in knee extension?. Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2003, Wilmington, DE.
127. Kautz SA (2003) Bilateral coordination of the lower extremities: Implications for rehabilitation. NASPSPA Annual Meeting, June 2003, Savannah, GA.
128. Kautz SA, Neptune RR, Zajac FE, Worthen L and Dairaghi CA (2002). Muscle function during forward and backward walking. 4th World Congress of Biomechanics, August 2002, Calgary, Alberta, Canada.
129. Kautz SA and Neptune RR (2002). Biomechanical determinants of pedaling energetics: internal and external work are not independent. 4th World Congress of Biomechanics, August 2002, Calgary, Alberta, Canada.

130. Neptune RR, Kautz SA and Zajac FE (2002). Muscle force not work defines muscle contributions to forward progression. 4th World Congress of Biomechanics, August 2002, Calgary, Alberta, CA.
131. Kautz SA (2002). Assessment of lower extremity movement impairment after stroke. International Symposium: Translating Principles Of Brain Plasticity Into Clinical Interventions, Kansas City, Missouri, April 2002.
132. Zajac FE, Neptune RR and Kautz SA (2002). Muscle contributions to trunk forward progression and support in walking. Presented at Proc. 3rd Natl. Mtg. VA Rehabilitation R&D Service (February 2002, Arlington, VA): 119-120.
133. Neptune RR, Kautz SA and Zajac FE (2001). Eccentric muscle activity functions as a brake and an accelerator during normal walking. Annual Meeting of the American Society of Biomechanics, August 2001, San Diego, CA.
134. Chen G, Patten C, Burgar CG, Kautz SA and Zajac FE (2001). Harness-support compliance in treadmill training in post-stroke hemiparesis. Annual Meeting of the American Society of Biomechanics, August 2001, San Diego, CA.
135. Kautz SA, Neptune RR and Zajac FE (2001). Mechanical consequences of controversial individual muscle timing during walking investigated by dynamic simulation. *Gait and Posture*, **13**:273-274. (Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2001, Sacramento, CA)
136. Neptune RR, Kautz SA and Zajac FE (2001). The role of the ankle plantarflexors during normal walking. *Gait & Posture*, **13**:252-253. (Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2001, Sacramento, CA)
137. Chen G, Schwandt D, Van der Loos HFM, Anderson J, Ferris DP, Zajac FE, Kautz SA, Burgar CG, Patten C, Neptune RR and Gordon KE (2001). Compliance-adjustable, force-sensing harness support for studying treadmill training in neurologically impaired subjects. *Gait & Posture*, **13**:293-294. (Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2001, Sacramento, CA)
138. Kautz SA, Patten C, Neptune RR and Harvey J (2000). Interlimb coordination influences on the excitation of paretic leg muscles during lower limb tasks in persons with post-stroke hemiparesis. Annual Meeting of the Society for Neuroscience, October 2000, New Orleans, LA.
139. Zajac FE, Neptune RR and Kautz SA (2000). Individual muscle contributions to forward progression in human walking. Annual Meeting of the Society for Neuroscience, October 2000, New Orleans, LA.
140. Zajac FE, Kautz SA, Ting LH, Neptune RR, Brown DA and Van der Loos HFM (2000). Identification of lower limb motor control strategies. Presented at VA Rehab R&D Conference, February, Washington DC.
141. Neptune RR and Kautz SA (2000). Patellofemoral joint loading in forward versus backward pedaling: implications for rehabilitation strategies. 11th International Conference on Mechanics in Medicine and Biology, April 2000, Maui, Hawaii.
142. Neptune RR, Kautz SA and Zajac FE (1999). Muscle contributions to specific biomechanical functions do not change in forward versus backward pedaling. Proceedings of the VIIth International Symposium on Computer Simulation in Biomechanics, August 5 - 7, Calgary, Canada, pp. 104-107.
143. Chen G, Kautz SA and Zajac FE (1999). Simulation analysis of muscle activity changes with altered body orientation during pedaling. Proceedings of the VIIth International Symposium on Computer Simulation in Biomechanics, August 5 - 7, Calgary, Canada, pp. 108-111.
144. Slavin MM, Brown DA, Kautz SA, and Williams KR (1999). Muscle activity phasing during asymmetrical forward and backward pedaling. International Society of Biomechanics; Calgary, Canada, 1999.
145. Ting LH, Kautz SA, Neptune RR and Zajac FE (1999). Functional muscle groups as a basis for neural control of pedaling. *Posture and Gait*, **9(S1)**: S61. (14th Symposium of the International Society for Posture and Gait Research, July 10 - 15, 1999, Waterloo, Canada)

146. Kautz SA, Van der Loos HFM, Brown DA and Zajac FE (1999). The ipsilateral locomotor pattern is strongly influenced by contralateral sensorimotor state. Presented at Annual Meeting of The Society for the Neural Control of Movement, Princeville, Kauai, HI, April, 1999.
147. Slavin MM, Brown DA, Kautz SA and Williams KR (1998) Muscle activity phasing during asymmetrical pedaling in healthy and hemiplegic subjects. Society for Neuroscience; Los Angeles, CA, 1998.
148. Kautz SA and Brown DA (1998). Implications of inappropriate muscle timing for speed of locomotion in hemiplegic persons. *Annals of Biomedical Engineering*, **26(S1)**:S-109. (Presented at Biomedical Engineering Society, Cleveland, Ohio, October, 1998)
149. Kautz SA, Van der Loos HFM, Ting LH, Brown DA and Zajac FE (1998). How much is the ipsilateral locomotor pattern influenced by contralateral sensorimotor state. *Annals of Biomedical Engineering*, **26(S1)**:S-97. (Presented at Biomedical Engineering Society, Cleveland, Ohio, October, 1998).
150. Kautz SA, Brown DA and Dairaghi CA (1998). Increased effort enhances pedaling exercise in persons with poststroke hemiplegia. Presented at VA Rehab R&D Conference, Washington DC, October, 1998.
151. Ting LH, Kautz SA, Brown DA, Van der Loos HFM and Zajac FE (1998). Bilateral integration of sensorimotor signals during pedaling. Presented at Neuronal Mechanisms for Generating Locomotor Activity, New York, NY, March 20-23, 1998.
152. Ting LH, Kautz SA, Brown DA and Zajac FE (1998). Coordination of one leg during flexion phase of human locomotion is altered by the sensorimotor condition of the contralateral leg. Presented at Society for Experimental Biology, York, England, March, 1998.
153. Ting LH, Kautz SA, Brown DA and Zajac FE (1997). Coordination of one leg during flexion phase of human locomotion is altered by the sensorimotor condition of the contralateral leg. Presented at 27th Annual Meeting of the Society for Neuroscience, New Orleans, LA October 26-30, 1997.
154. Neptune RR, Hull ML and Kautz SA (1997). The effect of pedaling rate on coordination in cycling. Presented at XVI International Congress of Biomechanics, Tokyo, Japan, August, 1997; p. 271.
155. Brown DA and Kautz SA (1997). Increased workload enhances force output during pedaling exercise in persons with post-stroke hemiplegia. Presented at Combined Sections Meeting of the APTA, Dallas, TX, February, 1997.
156. Brown DA, Kautz SA and Dairaghi CA (1996). Prolonged muscle activity vs. premature onset during pedaling in persons with post-stroke hemiplegia. Presented at 26th Annual Meeting of the Society for Neuroscience, Washington, DC, November 17-21, 1996.
157. Ting LH, Kautz SA, Brown DA and Zajac FE (1996). Phasing and function of biarticular thigh muscles during backward pedaling. Presented at 26th Annual Meeting of the Society for Neuroscience, Washington, DC November 17-21, 1996.
158. Brown DA, Kautz SA and Dairaghi CA (1995). Effects of increased speed and workload on the control of movement in persons with hemiplegia. Presented at 25th Annual Meeting of the Society for Neuroscience, San Diego, CA, November 11-16, 1995.
159. Kautz SA, Brown DA and Dairaghi CA (1995). Effects of increased exertion during pedaling exercise on kinetic measures of motor performance for hemiplegic persons. Presented at Annual Meeting of the American Society of Biomechanics, Stanford, CA, August 24-26, 1995.
160. Brown DA, Kautz SA and Dairaghi CA (1995): Effects of increased exertion during pedaling exercise in persons with hemiplegia. Presented at American Physical Therapy Association Research Retreat, New Hampton, NH, August 14-18, 1995.
161. Brown DA, Kautz SA and Dairaghi CA (1995): Effects of increased exertion on control of movement in persons with hemiplegia. Presented at Neural Control of Movement Meeting, Key West, FL, April 18-22, 1995.
162. Kautz SA and Brown DA (1994). Interactions between body orientation and motor activity patterns during pedaling. Invited presentation in Motor Control Symposium at Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 10-July 15, 1994.

163. Ting LH, Raasch CC, Sheehan FT, Brown DA, Kautz SA and Zajac FE (1994). Is one leg controlled the same during two mechanically equivalent tasks? Invited presentation in Motor Control Symposium at Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 10-July 15, 1994.
164. Kautz SA and Hull ML (1994). Optimal control based chairing design for cycling. Presented at Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 10-July 15, 1994.
165. Brown DA, Burgar CG, Kautz SA and Dairaghi CA (1993). A method for improving force symmetry during bipedal movement in hemiplegic subjects. Presented at American Academy of Physical Medicine and Rehabilitation, Miami Beach, FL, October 31-November 4, 1993. *Archives of Physical Medicine and Rehabilitation*, 74(11): 1236.
166. Kautz SA and Hull ML (1990). Decomposition of the forces applied to the pedal in cycling. Presented at First World Congress of Biomechanics, San Diego, CA, August 30-September 1, 1990.
167. Kautz SA and Feltner ME (1990). Changes in pedaling dynamics of elite cyclists with increased workload. Presented at First World Congress of Biomechanics, San Diego, CA, August 30-September 1, 1990.
168. Fregley BJ, Kautz SA, Zajac FE and Abraham L (1990). Steady state pedaling of elite cyclists: neuromuscular control strategies based on comparison of experimental and simulation results. Presented at First World Congress of Biomechanics, San Diego, CA, August 30-September 1, 1990.
169. Abraham L, Coyle EF, Kautz SA and Feltner ME (1990). High-power output pedalling of elite cyclists: physiological and biomechanical characteristics. Presented at First World Congress of Biomechanics, San Diego, CA, August 30-September 1, 1990.
170. Kautz SA, Feltner ME, Coyle EF and Baylor AM (1989). Changes in pedaling technique of elite cyclists with increased workload. Presented at XII International Congress of Biomechanics, Los Angeles, CA, June 26-30, 1989.
171. Feltner, M.E., Kautz SA, Coyle EF and Baylor AM (1989). Biomechanical characteristics of propulsive torque generation in two groups of elite cyclists. Presented at XII International Congress of Biomechanics, Los Angeles, CA, June 26-30, 1989.

Alternative Format Scientific Presentations

1. Kautz SA (2004) "Assessment of Lower Extremity Movement Impairment after Stroke: Compensation versus Restitution"; Module 1: Rehab – Restoring Mobility; Caring for the Older Adult IV, CD-ROM/Internet program; University of Florida Geriatric Education Center, July, 2004.

Non-Published Abstracted Scientific Presentations

1. Seamon BA, Kautz SA, Velozo C (2020) Development and Evaluation of an Activities-Specific Balance Confidence Scale Computerized Adaptive Test for Individuals Post-Stroke. Poster presentation, 2020, MUSC Translational Research Day, Charleston, SC
2. Fortune AN, Hutchison S, Thompson S, Kautz SA, George MS, Badran BW (2019). Motor-Activated Auricular Vagus Nerve Stimulation (MAAVNS) to Restore Upper Limb Function in Chronic Stroke Patients. MUSC Research Day. Charleston, SC. November 2019.
3. Fox EJ, Kautz SA, Day KV, Suter SP, Clark DJ, Howland DR, Behrman AL (2011). Gait Recovery post Incomplete Spinal Cord Injury: Underlying Control Mechanisms. National Predoctoral Clinical Research Training Program Meeting. Washington University, St. Louis, MO. May 2011.
4. Clark DJ, Neptune RR, Behrman AL and Kautz SA. Intentional step length modification during walking reveals impaired locomotor adaptability post-stroke. 2nd Annual Spotlight on Research in

Aging. University of Florida Claude D. Pepper Older Americans Independence Center, Gainesville FL, April 2011.

5. Fox EJ, Kautz SA, Day KV, Suter SP, Clark DJ, Howland DR, Behrman AL (2011). Mechanisms of Walking Recovery in Adults with Incomplete Spinal Cord Injury. Neuromuscular Plasticity Symposium, University of Florida. March 2011.
6. Fox EJ, Tester NJ, Bergschneider FP, Kautz SA, Howland DR, Behrman AL (2010). Neuromuscular Control is Similar across Locomotor Tasks in Children with Spinal Cord Injury. National Predoctoral Clinical Research Training Meeting. Washington University. St. Louis, MO, May 2010.
7. Fox EJ, Tester NJ, Bergschneider FP, Kautz SA, Howland DR, Behrman AL (2010). Support for the Common Core Hypothesis: Neural Control of Rhythmic Locomotor Tasks. Neuromuscular Plasticity Symposium, Gainesville, FL. March 2010.
8. Clark DJ, Neptune RR and Kautz SA. Voluntary modulation of step length post-stroke: role of the paretic leg. Neuromuscular Plasticity Symposium, University of Florida, Gainesville FL, March 2010.
9. Bowden ME and Kautz SA. Clinical and Task-Specific Evaluation of Abnormal Synergy Patterns. College of Public Health and Health Professions Research Day, Gainesville, FL, April 2008.
10. Fox EJ, Tester NJ, Subramanian S, Kautz SA, Howland DR and Behrman AL. Two Synergies Explain Walking Pattern Recovered in a Child with SCI. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2008.
11. Clark, DJ, Kautz SA. Fewer basic activation patterns account for lower extremity EMG during walking in adults post-stroke compared to healthy controls. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.
12. Bowden ME, Balasubramanian CK, Behrman AL and Kautz SA. Validation of a speed-based classification system using quantitative measures of walking performance post-stroke. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.
13. Madhavan S, Bowden ME and Kautz SA. Abnormal interlimb coupling during hemiparetic walking. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.
14. Fox EJ, Tester NJ, Kautz SA, Subramanian S, Howland DR and Behrman AL. "It takes two": two muscle synergies account for pattern of walking recovery. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.
15. Woodbury ML, Howland D, McGuirk TE, Davis S, Senesac C, Kautz SA, and Richards LG. Effects of trunk restraint combined with intensive task-practice on post-stroke upper extremity reach and function. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.
16. Day KV, Gill LC, Stickles SP, Kautz SA, Behrman AL. Measuring recovery of walking stability after incomplete spinal cord injury: comparison of a biomechanical measure and clinical assessments. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, January 2008.

17. Balasubramanian CK, Kautz SA. Swing phase dynamics during hemiparetic walking: Step-to-step variability. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2007.
18. Bowden MG, Balasubramanian CK, Behrman AL, Kautz SA. Does self-selected walking speed stratify hemiparetic walking ability? Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2007.
19. Day KV, Kautz SA, Behrman AL. Are we more stable walking at slower speeds? Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2007.
20. Balasubramanian CK, Bowden MG, Neptune RR, Kautz SA. Variability during hemiparetic walking. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, November 2006.
21. Bowden MG, Behrman AL, Kautz SA. Mechanisms of response to locomotor training post-stroke: systematic assessment of motor pattern restitution. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, November 2006. (Was Travel Award winner for meritorious poster presentation)
22. Balasubramanian CK, Bowden MG, Kautz SA. Relationship between asymmetrical step lengths and hemiparetic walking performance. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2006.
23. Nair PM, Kautz SA, Behrman AL. Neuromechanical examination of the control of walking with a posterior leaf spring ankle foot orthosis. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, October 2005.
24. Balasubramanian CK, Bowden MG, Kautz SA. Fast walking speeds: implications for improving functional mobility after stroke. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2005. (Was Travel Award winner for meritorious poster presentation)
25. Bowden MG, Balasubramanian CK, Kautz SA. Comparison of pedaling and walking force production in post-stroke hemiparesis. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, March 2005.
26. Balasubramanian CK, Bowden MG and Kautz SA (2004). Relationship between paretic pre-swing and functional walking ability in stroke subjects. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2004.
27. Higginson JS, Neptune RR, Zajac FE and Kautz SA (2001). How does soleus strength affect gait characteristics? Presented at BCATS 2001 - Biomedical Computation at Stanford, Stanford, CA October 2001.
28. Kautz, SA, Patten C, and Neptune RR (1999) Computer Simulation Analysis of Coordination Deficits in Post-Stroke Hemiplegia. Presented at The Whitaker Foundation Conference, San Diego, CA, August, 1999.

Scientific Session Chair

1. Meeting Chair. “Neural Mechanisms of Rehabilitation”, Satellite Meeting of Neural Control of Movement Annual Meeting, Charleston, SC, April 2015.
2. “Altering locomotion through learning and conscious control: what are the implications for rehabilitation?” Neural Control of Movement Annual Meeting, Naples, FL, April 2008.
3. “Human Movement: Modeling and Analysis II”. 25th Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 2008, Houston, TX.
4. “Neural Mechanisms of Limb Coordination in Locomotion: Insights from Clinical Studies and Development” at Neural Control of Movement Annual Meeting, Key Biscayne, FL, May 2006.
5. “Rehabilitation”. Annual Meeting of the Biomedical Engineering Society, Cleveland, OH, October 1998

Invited Scientific Presentations: International

1. “Predicting biomechanical deficits from impaired module coordination after stroke”, Invited presentation in “Muscle Synergy Analysis: From Descriptive to Predictive Applications” at “World Congress of Biomechanics”, Boston, MA July 2014.
2. “Improving stroke mobility and the crucial role of measuring coordination and biomechanics”, Invited Keynote presentation in “Innovative techniques for improving gait: stroke and cerebral palsy” at “World Congress of Biomechanics”, Boston, MA July 2014.
3. “Muscle synergy patterns in hemiparetic walking performance”, Invited presentation at “Workshop on Muscle Synergies”, Venice, Italy, April 2014.
4. “Optimizing patients outcomes – What does movement analysis reveal about how locomotor rehabilitation works?” Invited presentation at “Optimizing the Management of Spastic Patients”, Nice, France November 2011.
5. “Relationship of normal and abnormal synergies to walking recovery after stroke”. Invited seminar at Centre de Recherche Interdisciplinaire en Réadaptation du Montréal Métropolitain, Montréal, Quebec, Canada, February 2009.
6. “Voluntary adaptations to step length during hemiparetic walking”, Panelist in “Altering locomotion through learning and conscious control: what are the implications for rehabilitation?” at Neural Control of Movement Annual Meeting, Naples, FL, April 2008.
7. “Bilateral coordination of hemiparetic locomotion”, Panelist in “Neural Mechanisms of Limb Coordination in Locomotion: Insights from Clinical Studies and Development” at Neural Control of Movement Annual Meeting, Key Biscayne, FL, May 2006.
8. “Muscle function during forward and backward walking”. Invited presentation in Motor Control Symposium at 4th World Congress of Biomechanics, August 2002, Calgary, Canada.
9. “Biomechanical determinants of pedaling energetics: internal and external work are not independent”. Invited presentation in Sports Sciences Symposium at 4th World Congress of Biomechanics, August 2002, Calgary, Canada.

10. "Assessment of lower extremity movement impairment after stroke", Panelist in "Outcome research after stroke" session at "International Symposium: Translating Principles Of Brain Plasticity Into Clinical Interventions", Kansas City, Missouri, April 2002.
11. "Interactions between body orientation and motor activity patterns during pedaling". Invited presentation in Motor Control Symposium at 2nd World Congress of Biomechanics, July 1994, Amsterdam, The Netherlands.

Invited Scientific Presentations: National

1. "Writing a good specific aims page", NIH StrokeNet Fellows Seminar, January 2023, Online.
2. "Locomotor output complexity: A theoretical framework for measurement and treatment of post-stroke hemiparetic walking", Page Morton Hunter Distinguished Lecture, Clemson University Department of Bioengineering. November 2010, Clemson, SC.
3. "Theoretical and experimental analyses of walking in persons with post-stroke hemiparesis", Keynote lecture at 25th Annual Houston Conference on Biomedical Engineering Research, The Houston Society for Engineering in Medicine and Biology. February 2008, Houston, TX.
4. "Quantifying Restitution Versus Compensation in Post-stroke Rehabilitation: Implications for Clinical Outcomes", Panelist at Physical Therapy 2006: Annual Conference & Exposition of the American Physical Therapy Association, Orlando, FL, June 2006.
5. Respondent in "Lower Extremity Rehabilitation" session at Functional Restoration for the Stroke Survivor: Informing the Efforts of Engineers State of the Science Workshop, La Jolla, CA, March 2006.
6. "Coordination of hemiparetic locomotion", Keynote lecture at Annual Research Day at Center for Biomedical Engineering Research at University of Delaware, Wilmington, DE, May 2005.
7. "Coordination of hemiparetic locomotion after post-stroke rehabilitation", Panelist in "Locomotor Training Post SCI & Stroke: Bridging Basic Science with Clinical Research and Practice" session at ACRM-ASNR Annual Meeting, Ponte Vedra Beach, FL, September 2004.
8. "Bilateral coordination of the lower extremities: Implications for rehabilitation", Panelist in "Motor Learning/Control Invited Symposium: Stroke Symposium: An Interdisciplinary Approach to Recovery" session at NASPSPA Annual Meeting, Savannah, GA, June 2003.
9. Implications of inappropriate muscle timing for speed of locomotion in hemiplegic persons. Invited presentation at Annual Meeting of the Biomedical Engineering Society, Cleveland, OH, October 1998.

Invited Scientific Presentations: Local

1. "Stroke Rehabilitation research at Ralph H Johnson VA Medical Center", L3-Ralph H Johnson VA Medical Center Conference, Charleston, SC, April 2016.
2. "COBRE in Stroke Recovery", MUSC Board of Trustees Meeting, Charleston, South Carolina, February 2016.

3. "Team Science: What Works & What Doesn't", MUSC SCTR Annual Mentorship Training Symposium, Charleston, SC, June 2015.
4. "What Drives the AHA Research Program", AHA Mid-Atlantic Affiliate Board Meeting, Charleston, SC, February 2015.
5. "Exploration of excitatory and inhibitory cortical stimulation for walking recovery after stroke." Frontiers in Neuroscience Meeting, Charleston, South Carolina, April 2013.
6. "Center for Rehabilitation Research in Neurological Conditions: Recovery Research Program." MUSC Foundation Board of Directors Meeting, Charleston, South Carolina, February 2013.
7. "Neurorehabilitation Research Program." MUSC Board of Visitors Meeting, Charleston, South Carolina, December 2010.
8. "Neurorehabilitation Research Program." MUSC Board of Trustees Meeting, Charleston, South Carolina, August 2010.
9. "BRRC Human Motor Performance Lab: High-tech applications to advance the science of rehabilitation for veterans." VA Research Day, Malcom Randall VA Medical Center, Gainesville, FL, June 2006.

Invited Seminars

1. "Nail those Specific Aims", Office of Research Development, Medical University of South Carolina, Charleston, South Carolina, October, 2017.
2. "National Center of Neuromodulation for Rehabilitation", CORRT-Net seminar (via videoconference), Washington University, St. Louis, Missouri, May, 2016.
3. "The crucial role of measuring coordination and biomechanics for improving walking after stroke", Neurology Grand Rounds, Medical University of South Carolina, Charleston, South Carolina, December, 2015.
4. "The crucial role of measuring coordination and biomechanics for improving walking after stroke", Departments of Physical Therapy and Occupational Therapy Seminar, University of Alabama-Birmingham, Birmingham, Alabama, September, 2015.
5. "The crucial role of measuring coordination and biomechanics for improving walking after stroke", Center for Research in Human Movement Variability Seminar, University of Nebraska-Omaha, Omaha, Nebraska, September, 2015.
6. "Stroke recovery research: neuromechanics, brain stimulation and centers", Dual Candidate Seminar, Department of Neuroscience, Medical University of South Carolina, Charleston, South Carolina, April, 2013.
7. "Can locomotor training change muscle coordination and dynamic balance in chronic stroke?", Department of Physical Therapy Seminar, University of Maryland-Baltimore, Baltimore, MD, May, 2011.

8. "Post-stroke Locomotor Training: Does Neurorehabilitation Change Muscle Coordination?", Grand Rounds, Department of Neuroscience, Medical University of South Carolina, Charleston, South Carolina, September, 2010.
9. "Post-stroke Locomotor Training: Does Neurorehabilitation Change Muscle Coordination?", Rehabilitation Research Seminar, Department of Physical Therapy, University of Florida, Gainesville, FL, February 2010.
10. "Quantitative assessment of walking performance in neurological populations: Theoretical framework and experimental analyses", Rehabilitation Research Seminar, Department of Physical Therapy, University of Florida, Gainesville, FL, January 2005.
11. "How do we provide evidence that therapeutic interventions improve motor recovery? Assessing Changes in Lower Extremity Movement Impairment after Post-Stroke Rehabilitation", University of Florida Retired Faculty Seminar Series, Gainesville, FL, December 2004.
12. "Bilateral coordination of hemiparetic locomotion", BRRC/RORC Research Seminar Series, University of Florida, Gainesville, FL, June 2004.
13. "Assessment of Lower Extremity Movement Impairment after Stroke", Rehabilitation Research Day, University of Florida, Gainesville, FL, May 2004.
14. "Biomechanical Determinants of Human Locomotor Energetics: Lessons from Dynamical Simulations", Department of Exercise Science Seminar, University of Florida, Gainesville, FL, May 2003.
15. "Biomechanical Determinants of Locomotor Energetics: Lessons from Dynamical Simulations", Department of Biomedical Engineering Seminar, University of Florida, Gainesville, FL, January 2003.
16. "Assessment of muscle coordination and movement impairment during hemiparetic locomotion ", Department of Physical Therapy Seminar, University of Florida, Gainesville, FL, May 2002.
17. "Using pedaling to understand muscle coordination during normal and hemiparetic locomotion ", Department of Exercise Science Seminar, University of Texas, Austin, TX, March 2002.
18. "Using pedaling to understand muscle coordination during normal and hemiparetic locomotion ", Department of Exercise Science Seminar, Colorado State University, Fort Collins, CO, January 2002.
19. "Interlimb influences on paretic leg muscle function in post-stroke hemiparesis", Department of Physical Therapy Seminar, Washington University, St Louis, MO, January 2002.
20. "Interlimb influences on paretic leg muscle excitation", Center on Aging Seminar, Kansas University Medical Center, Kansas City, MO, November 2001.
21. "Patellofemoral joint loading in forward versus backward pedaling: implications for rehabilitation strategies", Orthopedics Research Day, VA Palo Alto HCS, Palo Alto, CA, December 2000.

22. "Using pedaling to understand motor control principles for normal and hemiparetic locomotion", Biomechanical Engineering seminar, Stanford University, Stanford, CA, January 1999.
23. "Using pedaling to understand motor control principles for normal and hemiplegic locomotion", Exercise science seminar, University of California, Davis, CA, January 1998:
24. "How can we exploit biomechanical principles to improve endurance cycling performance?", Department of Mechanical Engineering seminar, Stanford University, Stanford, CA, April 1996.
25. "Decomposition of pedal forces in cycling", Biomechanical Engineering seminar, Stanford University, Stanford, CA, January 1993.

Academic Lectures

1. "Stroke Recovery", Neurology Residents, (Seminar), Medical University of South Carolina, Charleston, SC, January 13, 2014.
2. "Rehabilitation Research", BME 800, (Seminar), Medical University of South Carolina, Charleston, SC, April 15, 2013.
3. "Control of body movement", BME 5001, (Introductory Physiology), University of Florida, Gainesville, FL, October 8, 2010.
4. "Improving rehabilitation of walking in persons with neurological deficits", RSD 6110 (Rehabilitation Science Theory & Application I), University of Florida, Gainesville, FL, September 29, 2009.
5. "Relationship of normal and abnormal synergies to walking recovery after stroke", PHT 6188C, (Biomechanics), University of Florida, Gainesville, FL, February 12, 2009.
6. "Overview of human motor performance lab and biomechanics research", PHT 6188C, (Biomechanics), University of Florida, Gainesville, FL, February 11, 2009.
7. "Restitution versus compensation: Assessing Changes in Lower Extremity Movement Impairment after Post-Stroke Rehabilitation", PHT 6761C, (Neurorehabilitation), University of Florida, Gainesville, FL, November 10, 2008.
8. "Improving rehabilitation of walking in persons with neurological deficits", RSD 6110 (Rehabilitation Science Theory & Application I), University of Florida, Gainesville, FL, October 2, 2008.
9. "Control of body movement", BME 5001, (Introductory Physiology), University of Florida, Gainesville, FL, October 8, 2008.
10. "Theoretical and experimental analyses of walking in persons with post-stroke hemiparesis", RSD 6930, (RSD Seminar), University of Florida, Gainesville, FL, March 31, 2008.
11. "Theoretical and experimental analyses of walking: developing a comprehensive framework for understanding impaired walking and an associated measurement toolbox", PHT 6188C, (Biomechanics), University of Florida, Gainesville, FL, March 5, 2008.

12. "Restitution versus compensation: Assessing Changes in Lower Extremity Movement Impairment after Post-Stroke Rehabilitation", PHT 6761C, (Neurorehabilitation), University of Florida, Gainesville, FL, November 19, 2007.
13. "Control of body movement", BME 5001, (Introductory Physiology), University of Florida, Gainesville, FL, October 15, 2007.
14. "Improving rehabilitation of walking in persons with neurological deficits – A research program", RSD 6110 (Rehabilitation Science Theory & Application I), University of Florida, Gainesville, FL, October 2, 2007.
15. "Control of body movement", BME 5001, (Introductory Physiology), University of Florida, Gainesville, FL, October 16, 2006.
16. "Instrumented treadmills for biomechanical data collection", EML 5598, (Orthopedic Biomechanics), University of Florida, Gainesville, FL, October 9, 2006.
17. "Hemiparetic walking", RSD 6930, (RSD Seminar), University of Florida, Gainesville, FL, April 17, 2006.
18. "Hemiparetic walking", RSD 6930, (RSD Seminar), University of Florida, Gainesville, FL, March 21, 2005.
19. "Quantitative Gait Assessment", PHT 6170 (Applied Biomechanics), University of Florida, Gainesville, FL, January 28, 2005.
20. "Bilateral coordination of hemiparetic locomotion", RSD 6930, (RSD Seminar), University of Florida, Gainesville, FL, March 5, 2004.
21. "Introduction to central pattern generators and their contribution to the control of locomotion (Discussion group leader)", GMS6007, (Fundamental Neuroscience for the 1st yr IDP students), University of Florida, Gainesville, FL, January 29, 2004.
22. "Stroke Rehabilitation: Dynamical Simulations Can Tell Us What Needs to Be Done and Whether We Have Succeeded", EML 5585, (Mechanics of Human Locomotor System), Department of Mechanical and Aeronautical Engineering, University of Florida, Gainesville, FL, September 19, 2003.

Academic Classes

1. PHT 6935, Applying biomechanical insights to motor control questions, Fall 2009.
2. PHT 6935, Advanced biomechanics and motor control of locomotion, Fall 2008.
3. PHT 6935, Applying biomechanical insights to motor control questions, Fall 2007.
4. PHT 6935, Advanced biomechanics and motor control of locomotion, Fall 2006.
5. PHT 6935, Applying biomechanical insights to motor control questions, Fall 2005.
6. BME 6938/PHT 6935, Interfacing biomedical engineering and rehabilitation, Spring 2004.

INTELLECTUAL PROPERTY

P1881 Transcranial Magnetic Stimulation Training and Testing Phantom. Finetto C, George MS and Kautz SA. April 2018.

PROFESSIONAL AWARDS

Fellow, American Society of Biomechanics, August 2022-

Paul Dudley White International Scholar-UK, International Stroke Conference, February, 2022
(Abstract: Vagus Nerve Stimulation Paired With Rehabilitation For Upper Limb Motor Function After Ischaemic Stroke: Sub-group Analysis Of The Randomised, Blinded, Pivotal, Vns-Rehab Device Trial. Dawson J, Engineer ND, Cramer SC, Wolf SL, Ali R, O'Dell MW, Pierce D, Prudente CN, Redgrave J, Feng W, Liu CY, Francisco GE, Brown BL, Dixit A, Alexander J, DeMark L, Krishna V, **Kautz SA**, Majid A, Tarver B, Turner DL, Kimberley TJ)

Peggy Schachte Research Mentor Award, Medical University of South Carolina (2021). The Peggy Schachte Research Mentor Award recognizes individuals at MUSC who have excelled in mentoring faculty in obtaining research support from private and public organizations or government agencies.

Distinguished University Professor, Medical University of South Carolina (2020-Present)

Winner, Gait and Clinical Movement Analysis Society's Best Poster Award (Roelker, S.A., Kautz, S.A., and Neptune R.R. (2019). Muscle contributions to mediolateral foot placement during straight-line walking. Gait and Clinical Motion Analysis Society Annual Meeting, Mar 26-29, Frisco, TX.)

Clinical and Translational Research (CTR) Award (2018) at the 7th Biennial National IDeA Symposium of Biomedical Research Excellence, Washington DC. *The CTR Award is a national award designed to acknowledge a successful mentor who has generously given of his/her time to guide and support junior clinical/translational investigators in an active CTR program. It recognizes individuals who exemplify research excellence and commitment to mentoring and have facilitated the careers of junior investigators.*

The Christie Family Endowed Chair in Stroke Rehabilitation Research (2015-Present)

College of Health Professions Scholar of the Year (2015)

1st Annual Stroke Rehabilitation Award, International Stroke Conference, February 2015, Nashville, TN (Chhatbar P, Enabore JA, Adams R, Kautz SA, and Feng W (2015). Dose Response Relationship in Transcranial Direct Current Stimulation Stroke Motor Recovery Studies)

College of Health Professions Scholar of the Year (2012)

University of Florida Research Foundation Professorship (2009-2012) *Awarded to tenured faculty who have a distinguished record of research performance in the past five years and evidence of a strong research agenda that is likely to lead to continuing distinction in their field.*

Nominee, Gait and Clinical Movement Analysis Society's Best Paper Award (Higginson JS, Zajac FE, Kautz SA, Neptune RR, Delp SL and Burgar CG (2003). Can intrinsic mechanics of equinus result in knee extension?)

Nominee, Gait and Clinical Movement Analysis Society's Best Paper Award (Neptune RR, Kautz SA and Zajac FE (2001). The role of the ankle plantarflexors during normal walking.)

Finalist, Clinical Biomechanics Award, Annual Meeting of the American Society of Biomechanics (Kautz SA, Brown DA, and Dairaghi CA (1995) Effects of increased exertion during pedaling exercise on kinetic measures of motor performance for hemiplegic persons.)

STUDENT HONORS

1. **Seamon, BA**, Srivastava S, Neptune RR, Perry L, Patten C, Kautz, SA: Influence of Body Weight Supported Treadmill Training Parameters on Muscle Coordination in Hemiparetic Walking. Poster Presentation, 2019, International Society of Posture and Gait Research, Edinburgh, Scotland (Won Aftab Patla Innovation Award for Best Clinical Poster by a Student).
2. **Roelker, S.A.**, Kautz, S.A., and Neptune R.R. (2019). Muscle contributions to mediolateral foot placement during straight-line walking. Gait and Clinical Motion Analysis Society Annual Meeting, Mar 26-29, Frisco, TX. (Winner, Best Poster Award).
3. **Fox E**, Howland D, Kautz SA and Behrman AL (2011). Modular control is similar across locomotor tasks in children with incomplete spinal cord injury. APTA Combined Sections Meeting. February 2011, New Orleans, LA. (Won Post-Professional Student Award from the Neurology Section of APTA).
4. **Bowden MG**. 2009 Graduate Dean's Scholar Award in the College of Public Health and Health Professions at the University of Florida. (Top graduate student)
5. **Raja B** and Kautz SA (2009). Is the non-paretic leg really unaffected after stroke? Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2009. (Was Travel Award winner for meritorious poster presentation).
6. **Balasubramanian CK**, Knight R, Subramanian S, Neptune RR and Kautz SA (2008). Evaluation of the neuromotor mechanisms underlying step length asymmetry patterns during hemiparetic walking using a novel methodology of step-by-step variability in gait data. Neural Control of Movement Annual Meeting. April 2008, Naples, FL. (Won NCM scholarship award to pay for travel to present at meeting).
7. **Bowden MG**, Balasubramanian CK, Behrman AL and Kautz SA (2008). Validation of a speed-based classification system using quantitative measures of walking performance post-stroke. APTA Combined Sections Meeting. February 2008, Nashville, TN. (Won Post-Professional Student Award from the Neurology Section of APTA).
8. **Day KV**, Thigpen MT, Kautz SA and Behrman AL (2007). Quantifying dynamic walking stability in persons with incomplete spinal cord injury. Innovations in balance and locomotor rehabilitation: the translation from fundamental science to clinical applications. July 2007, Montreal, Quebec, Canada. (Won one of two awards for best poster by graduate student).

9. **Bowden MG**, Behrman AL, Kautz SA. Mechanisms of response to locomotor training post-stroke: systematic assessment of motor pattern restitution. Presented at UF Neuromuscular Plasticity Symposium, Gainesville, FL, November 2006. (Was Travel Award winner for meritorious poster presentation)
10. **Balasubramanian CK**, Bowden MG, Kautz SA. Fast walking speeds: implications for improving functional mobility after stroke. Presented at College of Public Health and Health Professions Research Day, Gainesville, FL, April 2005. (Was Travel Award winner for meritorious poster presentation)

PROFESSIONAL SERVICE

Reviewer for *VA Research Career Scientist* study section, August 2023.

External Reviewer for promotion application, Department of Physical Therapy, Boston University, September 2022

External Reviewer for promotion application, Department of Physical Therapy, University of Florida, August 2022

Reviewer for *VA Research Career Scientist* study section, February 2022.

External Reviewer for promotion application, Department of Neurology, Harvard University, October 2021

External Reviewer for promotion application, Department of Physical Therapy, University of Illinois – Chicago, August 2021

External Reviewer for promotion application, Department of Physical Therapy, University of Massachusetts – Lowell, August 2021

Reviewer for *VA Research Career Scientist* study section, August 2021.

External Reviewer for promotion application, Department of Rehabilitation Medicine, Northwestern University, July 2021

Member, NIH Neurorehabilitation Common Data Elements Working Group, Motor Function Sub-Group, 2020-2021.

Reviewer for *VA Research Career Scientist* study section, February 2020.

Member, External Advisory Committee, VA Brain Rehabilitation Research Center, Gainesville VA Medical Center, 2020-

External Reviewer for promotion application, Department of Physical Therapy, University of Southern California, August 2019

External Reviewer for promotion application, Department of Physical Therapy, Emory University, August 2018

Member, Department of Veterans Affairs, (Research) Biomedical Engineer (BME) National Professional Standards Board (NPSB), 2018-2020.

Member, External Advisory Committee, VA Center for Neurorestoration and Neurotechnology, Providence VA Medical Center, 2018-

Reviewer for the Pac-12 Student-Athlete Health & Well-Being Grant Program, October 2017.

External Reviewer for promotion application, Department of Internal Medicine, University of Texas – Medical Branch, September 2017

External Reviewer for promotion application, Department of Physical Therapy, University of Delaware, August 2017

Reviewer for NIH National Institute on Aging P01 study section (Teleconference), May 2017.

Reviewer for Netherland's ZonMw Translational Research Programme, February 2017

Reviewer for German Research Foundation, February 2017

Reviewer for Netherland's ZonMw Translational Research Programme, September 2016

External Reviewer for promotion application, Department of Mechanical Engineering, North Carolina State University, September 2016

External Reviewer for promotion application, Department of Physical Therapy, University of Delaware, August 2016

Reviewer for *VA Centers of Excellence Panel* study section, April 2016.

Reviewer for promotion application, Department of Neuroscience, Medical University of South Carolina, November 2015

External Reviewer for promotion application, Department of Neurology, University of Maryland-Baltimore, October 2015

Reviewer for NIH ZAG1 ZIJ-7 (J1) CEREBROVASCULAR DISEASE AND AGING II (Macko P01) study section (Teleconference), October 2015.

External Reviewer for grant applicant arm's length assessment, Department of Physical Therapy, University of Toronto, August 2015

External Reviewer for promotion application, Department of Physical Medicine and Rehabilitation, Northwestern University, August 2015

Member, Rehabilitation Advisory Panel, Acorda Therapeutics, July 2015

Reviewer of grant application for Pennsylvania State Department of Health, June 2015.

Reviewer of grant application for Auckland Medical Research Foundation, New Zealand, May 2015.

Chair of Organizing Committee for “Neural Mechanisms of Rehabilitation” Meeting, Charleston, SC
April 2015

Member, VA Site Visit Team, Advanced Platform Technology Center, Cleveland, OH, December 2014

Reviewer for *National Institute of Child Health and Human Development Special Emphasis Panel* study section *ZHD1 DSR-Y (90) 1*, November 2014.

Reviewer for NIH ZAG1 ZIJ-7 (J2) CEREBROVASCULAR DISEASE AND AGING (Macko P01) study section (Teleconference), November 2014.

Reviewer for *VA Centers of Excellence Panel* study section, September 2014.

External Reviewer for promotion application, Department of Biomedical Engineering, Northwestern University, September 2014

External Reviewer for promotion application, Department of Mechanical Engineering, University of Tennessee, September 2014

Reviewer for NIH *Centers of Biomedical Research Excellence (COBRE) Phase I Special Emphasis Panel* study section, July 2014.

Reviewer of grant application for Czech Science Foundation, July 2014.

Guest Editor, Special issue of *Stroke Research and Treatment* entitled “Poststroke Outcomes”

Mail reviewer for *NIH Director’s Early Independence Award Special Emphasis Panel* study section, April 2014.

Reviewer for NIH *Centers of Biomedical Research Excellence (COBRE) Phase III Special Emphasis Panel* study section, December 2013.

Reviewer for *AHA Collaborative Science Award* Letters of Intent, December 2013.

External Reviewer for promotion application, Department of Physical Therapy, University of Delaware, August 2013

External Reviewer for promotion application, Department of Physical Therapy, University of Delaware, August 2013

Member, Research and Development Committee, Ralph H Johnson VA Medical Center, Charleston, SC, May 2013-present.

Member, Charleston Research Institute - Board of Directors, July 1, 2013-present.

Reviewer of abstracts for International Conference on Rehabilitation Robotics (ICORR 2013), April 2013.

Reviewer (e-mail) of grant application for University of Padua, Italy, December 2012.

Mail-in reviewer for NIH *Musculoskeletal Rehabilitation Sciences* study section, October 2012

External Reviewer for promotion application, Department of Physical Therapy, University of North Carolina, November 2012.

Reviewer (e-mail) of grant application for Technology Foundation STW, Netherlands, October 2012.

External Reviewer for promotion application, Department of Mechanical Engineering, University of North Carolina, Charlotte, August 2012

External Reviewer for promotion application, Department of Physical Therapy, Marquette University, August 2012

Member, Data Safety Monitoring Board, NIH project "Using tDCS to Treat Aphasia: A Phase II Trial" (Julius Fridriksson, PI), June 2012-present

Ad hoc reviewer for AHA *Bioengineering and Biotechnology* study section, April 2012.

Reviewer (e-mail) of grant application for Research Foundation Flanders, Belgium March 2012.

Reviewer (e-mail) of grant application for Research Foundation Flanders, Belgium April 2012.

Invited Participant, NIH Stem Cell Therapy as an Emerging Paradigm for Stroke (STEPS) 3 conference, Washington DC, Dec 2011

Member, Charleston Research Institute - Board of Directors, July 1, 2011 through June 30, 2013.

Phone reviewer for *US Army Medical Research and Materiel Command* proposal, December 2010.

Proposal Reviewer, South Carolina Spinal Cord Injury Research Fund, December, 2010

External Reviewer for promotion application, School of Kinesiology, University of Michigan, Fall 2010

Ad hoc reviewer for NIH *Musculoskeletal Rehabilitation Sciences* study section, October 2010.

Ad hoc reviewer for AHA *Bioengineering and Biotechnology* study section, October 2010.

Member, American Heart Association - Mid-Atlantic Affiliate Research Committee, July 1, 2010 through June 30, 2014.

Phone reviewer for NIH National Institute of Arthritis and Musculoskeletal and Skin Diseases Special Emphasis Panel (ZAR1 EHB) study section, March 2010.

Phone reviewer for NIH NIBIB Training SEP (ZEB1 OSR-C) study section, March 2010.

Ad hoc reviewer for NIH MOSS-G (52) R study section, December 2009.

Co-chair and reviewer for AHA *Bioengineering and Biotechnology 4* study section, October 2009.

Editorial Board member for *Journal of Applied Biomechanics* (2009-present)

Member, External Advisory Board, VA RR&D Maryland Exercise and Robotics Center of Excellence (MERCE), 2009-2011

Abstract Grading Subcommittee, International Stroke Conference, 2009-2010

Member, Subcommittee for Research Facilities (Subcommittee of Research and Development committee), Malcom Randall VA Medical Center, Gainesville, FL, (2009-present)

Member, Subcommittee for Special Projects (Subcommittee of Research and Development committee), Malcom Randall VA Medical Center, Gainesville, FL, (2009-present)

Co-chair and reviewer for AHA *Bioengineering and Biotechnology 4* study section, April 2009.

Ad hoc reviewer for NIH *Musculoskeletal Rehabilitation Sciences* study section, June 2008.

Editorial Board member for *Journal of Rehabilitation Research & Development* (2008-present)

Ad hoc reviewer for AHA *Bioengineering and Biotechnology 3* study section, April 2008.

Reviewer (e-mail) of grant application for Research Council of University of Leuven (K.U.Leuven), Belgium, February 2008.

Member, Subcommittee for Clinical Investigation (Subcommittee of Research and Development committee), Malcom Randall VA Medical Center, Gainesville, FL, December (2007-present)

Ad hoc reviewer for AHA *Bioengineering and Biotechnology 3* study section, April 2007.

Ad hoc reviewer for VA *Stroke* study section, March 2007.

Reviewer (e-mail) of research projects for Health Sciences - Bioengineering and Biomaterials/2006 Panel A for the Science and Technology Foundation, Portugal (FCT), for the Ministry of Science and Technology, January 2007.

Reviewer (e-mail) of research professorship (BOF-ZAP) application for University of Leuven (K.U.Leuven), Belgium, December 2006.

Ad hoc reviewer for NIH *Musculoskeletal Rehabilitation Sciences* study section, November 2006.

Ad hoc reviewer for VA *Stroke* study section, August 2006.

Ad hoc reviewer for AHA *Bioengineering and Biotechnology 2* study section, April 2005.

Invited attendee to national KineAssist Consortium Meeting, Rehabilitation Institute of Chicago, March 2005.

Reviewer of abstracts for International Conference on Rehabilitation Robotics (ICORR 2005).

Reviewer for Special Supplement Issue in *Journal of Rehabilitation Research & Development* Tentative Title: "Rehabilitation Robotics in 2015: A ten-year exercise in futurology"

Ad hoc reviewer for NIH *Musculoskeletal Rehabilitation Sciences* study section, March 2004.

Reviewer of abstracts for Annual Meeting of the Gait and Clinical Movement Analysis Society, April 2002.

Member, Organizing Committee of 19th Annual Meeting of the American Society of Biomechanics, Stanford, CA (1994-95).

Ad hoc reviewer for: Annals of Biomedical Engineering, Brain, Brain Research, Brain Stimulation, Clinical Neurophysiology, Computer Methods in Biomechanics and Biomedical Engineering, European Journal of Applied Physiology and Occupational Physiology, Experimental Brain Research, Gait & Posture, Human Movement Science, International Journal for Numerical Methods in Biomedical Engineering, International Journal of Stroke, Journal of the American Gerontological Society, Journal of Applied Biomechanics, Journal of Applied Physiology, Journal of Biomechanics, Journal of Biomechanical Engineering, Journal of Motor Behavior, Journal of Neurological Physical Therapy, Journal of Neurophysiology, Journal of NeuroEngineering and Rehabilitation, Journal of Neuroscience, Journal of Neuroscience Methods, Journal of Rehabilitation Research & Development, Journal of the Royal Society Interface, Medicine and Science in Sports and Exercise, Neurorehabilitation and Neural Repair, Physical Therapy, Research Quarterly, Stroke, IEEE Transactions in Biomedical Engineering

PROFESSIONAL SERVICE -- UNIVERSITY

Member, Strategic Research Planning Committee, August 2022-

Member, Mentor Leadership Council, July 2022-

Reviewer for COBRE pre-application panel (August, 2021)

Chair, Department of Oral Health Sciences Chairperson Search Committee, Medical University of South Carolina, September 2020-December 2020

Member, Vice President for Research Search Committee, Medical University of South Carolina, June 2020-August 2020

Center for Biomedical Imaging Advisory Board, Medical University of South Carolina, 2017-present

Cores and Space Task Force (for University Research Council), Medical University of South Carolina, 2016-2017

SCTR Internal Advisory Committee, Medical University of South Carolina, 2015-2019

SCTR TL1 Steering Committee, Medical University of South Carolina, 2015-Present

Chair, Vice President for Research Search Committee, Medical University of South Carolina, July 2015-April 2016

Member, University Research Council Strategic Operations Subcommittee, Medical University of South Carolina, November 2014-November 2017

Member, Executive Leadership Team, College of Health Professions, Medical University of South Carolina, 2015-present

Member, Leadership Council, College of Health Professions, Medical University of South Carolina, November 2012-present

Member, Tenure Committee, College of Health Professions, Medical University of South Carolina, May 2013

Member, Stroke Research and Education Center Executive Committee, Medical University of South Carolina, February 2013-February 2014.

Member, Tenure Committee, College of Health Professions, Medical University of South Carolina, July 2012

Member, Director of Center for Innovation and Entrepreneurialism Search Committee, Medical University of South Carolina, November 2011-March 2012

Member, MUSC Faculty Grievance Committee, Medical University of South Carolina, February 2012

Co-Chair, Research Council, College of Health Professions, Medical University of South Carolina, January 2012-present

Member, MUSC Research Integrity Committee, Medical University of South Carolina, December 2011-present

Member, Funds Flow Committee, College of Health Professions, Medical University of South Carolina, May 2011-2013

Member, CHP Dean Search Committee, Medical University of South Carolina, May 2011-August 2011

Member, Department of Clinical Neurosciences Search Committee, Medical University of South Carolina, March 2011-June 2011

Member, Charleston Research Institute Executive Board, Medical University of South Carolina, May 2011-present

Member, SCTR Scientific Review Committee, Medical University of South Carolina, April 2011-present

Member, SCTR Executive Committee, Medical University of South Carolina, March 2011-present

Co-chair, Organizing Committee for SCTR Retreat "Regeneration, Recovery, Rehabilitation, and Return of Function in Persons with Neurological Disease/Injury", February 2011

Member, Strategic Plan Technology/Innovation Operations Team, Medical University of South Carolina, November 2010-2014

Chair, Mentorship Plan Committee, College of Health Professions, Medical University of South Carolina, November 2010-June 2011

Member, Executive Council, College of Health Professions, Medical University of South Carolina, November 2010-July 2011

Member, Executive Leadership Team, College of Health Professions, Medical University of South Carolina, July 2010-July 2011

Senior faculty moderator, College of Public Health and Health Professions Dean's junior faculty grant writing group (advise and facilitate at biweekly meetings) December 2007 – December 2009.

Proposal Reviewer, College of PHHP submissions to University of Florida Opportunity Fund, November, 2008

Proposal Reviewer for internal UF applicants, RFA for collaborative Aging Research sponsored by UF Institute on Aging, November 2007

Mentor, Clinical and Translational Science Institute's Training and Professional Development Program, 2007 – 2010

Proposal Reviewer for internal UF applicants, Brookdale Leadership in Aging Fellowship Program, September, 2006

Proposal Reviewer, University of Florida Opportunity Fund, March, 2006

Bloodborne pathogen training coordinator, Department of Physical Therapy, 2006-2007

Chair, RSD Committee, Department of Physical Therapy 2005-2010

Member, Executive Committee of UF Institute on Aging, 2005-2010

Member, RSD Steering Committee, College of Public Health and Health Professions, 2005-2010

Chair, Search Committee for three tenure track positions at open rank, Department of Physical Therapy 2002-2003

PROFESSIONAL AFFILIATIONS

Member: American Society of Biomechanics, American Physiological Society, International Society of Biomechanics, Society for Neuroscience, The Society for Neural Control of Movement, American College of Sports Medicine, American Physical Therapy Association (affiliate member)

SYMPOSIA AND CONFERENCES

American College of Sports Medicine 1988

American Congress of Rehabilitation Medicine 2004

American Society of Biomechanics 1988, 1995

American Society of Mechanical Engineers 1991

APTA Research Retreat: Multiple Muscle Systems 1995

APTA Combined Sections Meeting 2010

APTA Annual Meeting 2006

Deafferentation and the role of Sensory Afferent in Human Motor Control 1993

Innovations in balance and locomotor rehabilitation: the translation from fundamental science to clinical applications 2007

Gait & Clinical Movement Analysis Society 2001

Houston Society of Engineering and Medicine in Biology 2008

International Society of Biomechanics 1989

International Society of Biomechanics – Computer Simulation 1989

International Society for Posture and Gait Research 2007
International Stroke Conference 2006
International Symposium on Neural Regeneration 1997, 2000
International Symposium on the 3-D Analysis of Human Movement 2004
International Symposium: Translating Principles of Brain Plasticity Into Clinical Interventions 2002
North American Society for the Psychology of Sport and Physical Activity 2003
Neural Control of Abnormal Movement 2006
Neural Control of Movement 1995, 1999, 2006, 2008, 2011, 2015
Neuronal Mechanisms for Generating Locomotor Activity 1998
Shriners Workshop on Human Motion Analysis 1993
Society for Neuroscience 1988, 1993, 1995, 1996, 1997, 2000, 2002, 2003, 2005
World Congress of Biomechanics 1990, 1994, 2002, 2014

ACADEMIC HONORS

Distinguished Scholar in Biomedical Engineering (grant for outstanding research potential), University of California, Davis, CA (June 1990)

Recruiting Fellowship, University of California, Davis, CA (October 1989-June 1992)

ARCO Fellowship (for outstanding geophysics graduate student), University of Texas, Austin, TX (September 1984-May 1985)

Industrial Associates Fellowship, University of Texas Institute for Geophysics (January 1984-May 1984)

Member, The Honor's College, Michigan State University (1979-1983)

Member, Phi Kappa Phi National Honor Society

Student Mentoring

Current Students

None

Former Students

1. Jay Lee, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2018-2022)
2. Bryant Seamon, PhD Candidate (**Committee Chair**, Rehabilitation and Health Sciences, Medical University of South Carolina, 2017-2021)
3. Lydia Brough, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2016-2021)
4. Daniel Lench, PhD Candidate (**Committee Member**, Biomedical Sciences, Medical University of South Carolina, 2017-2019)
5. Emilie McKinnon, MD-PhD Candidate (**Committee Member**, MD-PhD program, Medical University of South Carolina, 2017-2019)

6. Sarah Graham, PhD Candidate (**Committee Member**, Rehabilitation Science, University of Alabama, Birmingham, 2016-18)
7. Stacy Aaron, PhD Candidate (**Committee Member**, Rehabilitation and Health Sciences, Medical University of South Carolina, 2016-17)
8. Arian Vistamehr, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2012-15)
9. Rebecca Routson, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2010-14)
10. Jessica Allen, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2008-2012)
11. Emily Fox, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2008-2011)
12. Bhavana Raja, PhD Candidate (**Committee Chair**, RSD Program, University of Florida, 2006-2010)
13. Cameron Nott, PhD Candidate (**Committee Chair**, Mechanical and Aeronautical Engineering, University of Florida, 2007-2010)
14. Carrie Peterson, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2007-2010)
15. Allison Hall, PhD Candidate (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2007-2010)
16. Kristen Day, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2007-2010)
17. Amit Sethi, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2008-2010)
18. Adele Blum, PhD Candidate (**Committee Member**, Neuroscience, University of Florida, 2006-2010)
19. Jonathan Walter, PhD Candidate (**Committee Member**, Mechanical and Aeronautical Engineering, University of Florida, 2008-2010)
20. Jennifer Jackson, PhD Candidate (**Committee Member**, Biomedical Engineering, University of Florida, 2006-2010)
21. Sarah Mondello, PhD Candidate (**Committee Member**, Neuroscience, University of Florida, 2008-2010)
22. Mark Bowden, PhD (**Committee Chair**, RSD Program, University of Florida, 2003-2009)
23. Chitra Lakshmi Balasubramanian, PhD (**Committee Chair**, RSD Program, University of Florida, 2003-2008)
24. Sharon Barak, PhD (**Committee Member**, RSD Program, University of Florida, 2006-2009)

25. Stephanie Jefferson, PhD (**Committee Member**, Neuroscience, University of Florida, 2005-2009)
26. Preeti Nair, PhD (**Committee Member**, RSD Program, University of Florida, 2004-2008)
27. Luther GIII, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2008)
28. Mindy Wellborn, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2008)
29. Jeff Reinbolt, PhD (**Committee Member**, Mechanical and Aeronautical Engineering, University of Florida, 2004-2006)
30. Evan Goldberg, MS (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2005)
31. Lindsey Turns, MS (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2005-2006)
32. Carrie Peterson, MS (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2005-2007)
33. Nils Hakansson, MS (**Committee Member**, Biomedical Engineering, University of California, Davis, 2003)
34. Claudia Senesac, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2003)
35. Man-Soo Ko, PhD (**Committee Member**, RSD Program, University of Florida, 2006)
36. Chetan Phadke, PhD (**Committee Member**, RSD Program, University of Florida, 2003-2006)
37. Yi-Po Chiu, PhD Candidate (**Committee Member**, RSD Program, University of Florida, 2003)
38. Jeff Rankin, MS (**Committee Member**, Mechanical Engineering, University of Texas, Austin, 2007)
39. Jill Higginson, PhD (**Committee Member**, Biomedical Engineering, Stanford University, 2004)
40. Lena Ting, PhD (**Committee Member**, Mechanical Engineering, Stanford University, 1998)
41. Rick Neptune, PhD (**Committee Member**, Mechanical Engineering, University of California, Davis, 1996)