

## TRAINING AND EXPERIENCE

---

### EDUCATION

---

#### Doctor of Philosophy

*Term:* 1997 – 2004  
*Institution:* McGill University, Montreal Neurological Institute  
*Specialization:* Neurological Sciences  
*Thesis:* Visual and saccadic processing in hemidecorticate patients.

#### Master of Science

*Term:* 1995 – 1997 (Transferred into Ph. D. program prior to completing M. Sc. degree)  
*Institution:* McGill University, Montreal Neurological Institute  
*Specialization:* Neurological Sciences

#### Bachelor of Science

*Term:* 1991 – 1995  
*Institution:* McGill University, Faculty of Arts and Sciences  
*Specialization:* Psychology

### POSITIONS

---

#### Clinical Assistant Professor

*Term:* January 2017 – Present  
*Institution:* University of South Carolina, Department of Exercise Science

#### Division Head (Rehabilitation Sciences Division)

*Term:* August 2014 – July 2016  
*Institution:* University of South Carolina, Department of Exercise Science

#### Graduate Director (Rehabilitation Sciences Division)

*Term:* August 2014 – July 2016  
*Institution:* University of South Carolina, Department of Exercise Science

#### Assistant Professor

*Term:* January 2012 – December 2016  
*Institution:* University of South Carolina, Department of Exercise Science

#### Research Associate

*Term:* September 2007 – December 2011  
*Institution:* Queen's University, Centre for Neuroscience Studies

#### Postdoctoral Fellow

*Term:* June 2004 – August 2007  
*Institution:* Queen's University, Centre for Neuroscience Studies

---

## TEACHING

---

### TEACHING AWARDS

---

#### Nominee: Distinguished Undergraduate Research Mentor Award (2018)

*Sponsor:* University of South Carolina, Office of Undergraduate Research

#### Nominee: James A. Keith Excellence in Teaching Award (2015)

*Sponsor:* University of South Carolina, Arnold School of Public Health

#### Recipient: Mortar Board Excellence in Teaching Award (2014)

*Sponsor:* Alpha Chapter of Mortar Board

**Nominee: Distinguished Undergraduate Research Mentor Award (2014)**  
*Sponsor:* University of South Carolina, Office of Undergraduate Research

## **UNDERGRADUATE TEACHING**

---

### **PRIMARY INSTRUCTOR**

- EXSC 555 – PRINCIPLES OF NEUROREHABILITATION (2018 – PRESENT)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Undergraduate Program in Exercise Science
- EXSC 555 – NEURAL CONTROL OF MOTOR BEHAVIOR (2018 – PRESENT)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Undergraduate Program in Exercise Science
- EXSC 555 – ADVANCED MOTOR BEHAVIOR (2017 – PRESENT)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Undergraduate Program in Exercise Science
- EXSC 351 – ACQUISITION OF MOTOR SKILLS (2013 – PRESENT)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Undergraduate Program in Exercise Science

### **CONTRIBUTING INSTRUCTOR**

- BMEN 345 – Human Anatomy and Physiology (2016 – PRESENT)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Undergraduate Program in Biomedical Engineering

## **GRADUATE TEACHING**

---

### **PRIMARY INSTRUCTOR**

- PHYT 808 – NEURAL REPAIR AND REHABILITATION (2017)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Doctor of Physical Therapy Program
- PHYT 782 – MECHANICAL ANALYSIS OF MOTOR SKILLS (2012)**  
*Institution:* University of South Carolina, Department of Exercise Science  
*Program:* Doctor of Physical Therapy Program

### **CONTRIBUTING INSTRUCTOR**

- RHBS 901 – MOTOR PERFORMANCE IN REHABILITATION (2008 – 2010)**  
*Institution:* Queen's University, School of Rehabilitation Therapy  
*Program:* Graduate Program in Rehabilitation Science
- LISC 826 – CURRENT CONCEPTS IN SENSORIMOTOR NEUROSCIENCE (2007 – 2008)**  
*Institution:* Queen's University, Department of Biomedical and Molecular Sciences  
*Program:* Graduate Program in Neuroscience
- INDS 106 – NERVOUS SYSTEM AND SPECIAL SENSES (1997, 2001)**  
*Institution:* McGill University, Faculty of Medicine  
*Program:* Undergraduate Medical Program (Clinical)

## **COURSE DEVELOPMENT**

---

- EXSC 555 – PRINCIPLES OF NEUROREHABILITATION (2018)**  
*Institution:* University of South Carolina  
*Program:* Undergraduate Programs in Exercise Science and Neuroscience  
*Focus:* New course aimed at developing critical and creative thinking via discussions and papers on recent research in neurorehabilitation

#### **EXSC 555 – NEURAL CONTROL OF MOTOR BEHAVIOR (2018)**

*Institution:* University of South Carolina

*Program:* Undergraduate Programs in Exercise Science and Neuroscience

*Focus:* New course aimed at developing critical and creative thinking via discussions and papers on recent research in neuroscience

#### **EXSC 555 – ADVANCED MOTOR BEHAVIOR (2017)**

*Institution:* University of South Carolina

*Program:* Undergraduate Programs in Exercise Science and Neuroscience

*Focus:* Discussions and papers on recent research in motor behavior are used to develop critical thinking and communication skills

#### **EXSC 351 – ACQUISITION OF MOTOR SKILLS (2014)**

*Institution:* University of South Carolina

*Program:* Undergraduate Program in Exercise Science

*Focus:* Added new content on neural, muscular, sensory, and biomechanical mechanisms that underlie motor learning and control

### **POSTDOCTORAL MENTORSHIP**

---

#### **PRIMARY MENTOR**

##### **Tarkeshwar Singh (2014 - 2016)**

*Institution:* University of South Carolina, Department of Exercise Science

*Topic:* Computational approaches for using eye tracking and upper-limb robotics to study interactions between eye and limb movements during visuomotor performance.

*Current:* Assistant Professor, University of Georgia, Department of Kinesiology

### **POSTDOCTORAL TRAINEE AWARDS**

---

#### **The interaction of visual attention and handedness in action selection and specification**

*Sponsor:* University of South Carolina, ASPIRE I Postdoctoral Research Grant

*Recipient:* Tarkeshwar Singh (postdoctoral trainee)

*Term:* 05/01/2015 – 08/31/2016

*Funding:* \$15,000

### **GRADUATE MENTORSHIP (PHD)**

---

#### **PRIMARY MENTOR**

##### **Adam Harrison (2015 - Present)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Candidate)

*Topic:* Neurophysiological biomarkers for assessment and treatment of post-concussion syndrome.

##### **Christopher Perry (2013 - Present)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Candidate)

*Topic:* Effects of mental fatigue on neural processes underlying functional performance.

#### **COMMITTEE MEMBER**

##### **Brett Gunn (2017 – Present)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Student)

*Topic:* Exercise and biofeedback interventions for treatment of post-concussion syndrome.

##### **Jacob Kay (2017 – Present)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Student)

*Topic:* Clinical biomarkers for assessment and treatment of post-concussion syndrome.

##### **Allison Pierce (2016 – Present)**

*Program:* University of South Carolina, Ph. D. Program in Psychology (PhD Candidate)

*Topic:* Identification of distinct neural components underlying inhibition of return.

##### **Sarah Tryon (2014 – Present)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Candidate)

*Topic:* Plasticity of muscarinic acetylcholine receptors in the basolateral amygdala.

**William Brixius (2016 – 2018)**

*Program:* University of South Carolina, Ph. D. Program in Psychology (PhD Graduate in 2018)

*Thesis:* Questioning the modality of the occipital lobe.

**Melissa Kolar (2012 – 2018)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Graduate in 2018)

*Thesis:* Examining the potency of a combined action observation and brain stimulation intervention.

**Wanze Xie (2014 – 2017)**

*Program:* University of South Carolina, Ph. D. Program in Psychology, (PhD Graduate in 2017)

*Thesis:* Development of brain functional connectivity and sustained attention in early infancy.

**Jessica Baer (2012 – 2017)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science, (PhD Graduate in 2017)

*Thesis:* Influence of exercise on motor learning.

**C'iana Cooper (2014 – 2016)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Graduate in 2016)

*Thesis:* Metabotropic receptor modulation of kainite receptors in the hippocampus.

**Tim Boiteau (2014 – 2015)**

*Program:* University of South Carolina, Ph. D. Program in Psychology (PhD Graduate in 2015)

*Thesis:* The syntax-space effect.

**Denise Peters (2012 – 2015)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (PhD Graduate in 2015)

*Thesis:* Correlations between white matter integrity, structural connectivity, and upper and lower extremity motor function.

**Addie Middleton (2012 – 2015)**

*Program:* University of South Carolina, Ph. D. Program in Exercise Science (Graduated in 2015)

*Thesis:* Walking speed is predictive of falls and community walking behavior in older adults.

---

**GRADUATE TRAINEE AWARDS (PHD)**

---

**Measuring error detection during a continuous motor task**

*Recipient:* Adam Harrison (Primary Mentor)

*Sponsor:* University of South Carolina, SPARC Doctoral Award

*Term:* 05/01/2017 – 04/30/2018

*Funding:* \$5,000

**Eye-hand coupling within predictable movements**

*Recipient:* Christopher Perry (Primary Mentor)

*Sponsor:* University of South Carolina, SPARC Doctoral Award

*Term:* 05/01/2017 – 04/30/2018

*Funding:* \$5,000

---

**GRADUATE MENTORSHIP (DPT)**

---

**PRIMARY MENTOR**

**Christie Baxter (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* A case series study of intensive proprioceptive training on sensory deficits in individuals with chronic stroke.

**Jessie Russo (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* A case series study of intensive proprioceptive training on sensory deficits in individuals with chronic stroke.

**Mary Newton (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* A case series study of intensive proprioceptive training on sensory deficits in individuals with chronic stroke.

**Matt Davis (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* Examining recovery of sensory, motor, and cognitive impairments resulting from concussion: A prospective case series.

**Mehul Patel (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* Examining recovery of sensory, motor, and cognitive impairments resulting from concussion: A prospective case series.

**Pratik Patel (2012 - 2014)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2014)

*Thesis:* Examining recovery of sensory, motor, and cognitive impairments resulting from concussion: A prospective case series.

**COMMITTEE MEMBER**

**Daniel Cho (2017 – 2018)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2018)

*Thesis:* Effect of action selection demands on the execution of a reach task.

**Seth Frutiger (2017 – 2018)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2018)

*Thesis:* Effect of action selection demands on the execution of a reach task.

**Laura Zaring (2017 – 2018)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2018)

*Thesis:* Relationship between pressure-pain threshold and cortical activations in lower back pain.

**Kristen Stoa (2017 – 2018)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2018)

*Thesis:* Relationship between pressure-pain threshold and cortical activations in lower back pain.

**Robyn Culbertson (2017 – 2018)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2018)

*Thesis:* Effects of Kinesiotape on motor function and proprioception: a randomized controlled trial.

**Dylan Bruemmer (2014 – 2016)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2016)

*Thesis:* Changes in motor planning during a reaching task involving the nondominant hand.

**Takeo Ichiuangi (2014 – 2016)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2016)

*Thesis:* Changes in motor planning during a reaching task involving the nondominant hand.

**Allison Johnson (2013 – 2015)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2015)

*Thesis:* Effects of kinesiotape at the shoulder on upper-extremity motor function: a randomized control trial.

**Sarah DeBruhl (2013 – 2015)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2015)

*Thesis:* Effects of kinesiotape at the shoulder on upper-extremity motor function: a randomized control trial.

**Joanna Malcolm (2013 – 2015)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2015)

*Thesis:* Effects of kinesiotape on proprioception at the shoulder: a randomized control trial.

**Kaci Handerly (2013 – 2015)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2015)

*Thesis:* Effects of kinesiotape on proprioception at the shoulder: a randomized control trial.

**Peter O'Donnell (2013 – 2015)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2015)

*Thesis:* The effect of bihemispheric transcranial direct current stimulation of S1 on motor learning and sensation.

**Kendra Gilbert (2012 – 2013)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2013)

*Thesis:* Graded motor imagery may improve motor recovery for people who have experienced a stroke: A case report.

**Morgan Hale (2012 – 2013)**

*Program:* University of South Carolina, Doctorate in Physical Therapy Program (DPT Graduate in 2013)

*Thesis:* Graded motor imagery may improve motor recovery for people who have experienced a stroke: A case report.

**GRADUATE MENTORSHIP (MS)**

---

**THESIS SUPERVISOR**

**Shafagh Yazdani (2015 - 2018)**

*Program:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2018)

*Thesis:* Codependent contributions of local and global cortical networks to visuomotor performance.

**Barbara Marebwa (2014 - 2015)**

*Program:* University of Trento, Master's Program Cognitive Neuroscience (MSc Graduate in 2015)

*Thesis:* Predicting post-stroke motor impairments using robotics, neuroimaging, and computational modeling.

**THESIS COMMITTEE MEMBER**

**Danny Saucedo (2014 – 2015)**

*Program:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2015)

*Thesis:* Determinants of regular exercise among trauma exposed combat veterans.

**Adam Harrison (2012 – 2014)**

*Program:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2014)

*Thesis:* A systematic comparison of aerobic exercise and transcranial direct current stimulation on motor performance.

**Becky Younger (2013 – 2014)**

*Program:* University of South Carolina, Master's Program in Athletic Training (MS Graduate in 2014)

*Thesis:* The effect of a recreational football season on motor skills and proprioception in youth players.

**Philip Black (2013 – 2014)**

*Program:* University of South Carolina, Master's Program in Athletic Training (MS Graduate in 2014)

*Thesis:* The effects of a football season on cognitive function in youth football players.

**Scott Blanchette (2012 – 2013)**

*Program:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2013)

*Thesis:* Joint action and optimal cooperation.

**PROJECT SUPERVISOR**

**Elizabeth Anderson (2016 – 2018)**

*Project:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2018)

**Katelynn Reilly (2016 – 2018)**

*Project:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2018)

**Taylor Leach (2014 – 2017)**

*Project:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2017)

**Mark Odegard (2014 – 2016)**

*Project:* University of South Carolina, Master's Program in Exercise Science (MS Graduate in 2016)

**UNDERGRADUATE MENTORSHIP**

---

**THESIS SUPERVISOR**

**Madison Estridge (2018 - Present)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science

*Topic:* Influence of impaired visual search on mobility in Parkinson's disease.

**Anna McElrath (2017 - 2018)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science (BS Graduate in 2018)

*Thesis:* Exploring a biopsychosocial approach for improving cognition with brain breaks in school.

**Emily Winchell (2017 - 2018)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science (BS Graduate in 2018)

*Thesis:* Development and validation of reading books for patients with Alzheimer's disease.

**Erin Langley (2017 - 2018)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science (BS Graduate in 2018)

*Thesis:* Exploring brain-behavior relationships between yoga and brain health.

**Brianna Eberl (2016 - 2018)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science (BS Graduate in 2018)

*Thesis:* Influence visuospatial adaptation on coordination of visual search and limb movements.

**Victoria Turnbull (2016 - 2018)**

*Program:* University of South Carolina, Honor's College, Major in Exercise Science (BS Graduate in 2018)

*Thesis:* Influence of impaired visual search on cognitive and motor deficits in Parkinson's disease.

**Olivia Spead (2013 - 2015)**

*Program:* University of South Carolina, Honors College, Joint Majors in Biology and Neuroscience (BS Graduate in 2015)

*Thesis:* Predicting post-stroke recovery using neuroimaging and trail makings tasks.

**PROJECT SUPERVISOR**

**Alena Laws (2018 - Present)**

*Program:* University of South Carolina, Major in Exercise Science

*Project:* Effects of attentional modulation on visual search during motor behavior in healthy, older adults.

**Allison Yarborough (2018 - Present)**

*Program:* University of South Carolina, Major in Exercise Science

*Project:* Influence of impaired visual search on health-related quality of life in Parkinson's disease.

**Amy Lance (2018 - Present)**

*Program:* University of South Carolina, Major in Biology

*Project:* Effects of impaired visual processing on visual search and driving performance in stroke.

**Cassandra Bright (2017 - Present)**

*Program:* University of South Carolina, Major in Exercise Science

*Project:* Influence of mental fatigue on autonomic nervous function in attention-deficit/hyperactivity disorder.

**Ryan McNutt (2017 - Present)**

*Program:* University of South Carolina, Major in Exercise Science

*Project:* Development of a novel physiological biomarker for impaired autonomic function in post-traumatic stress disorder.

**Justina Sedhom (2018)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2018)

*Project:* Effects of attentional modulation on visual search during motor behavior in stroke survivors.

**Shannon Mumper (2016 - 2017)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2017)

*Project:* Influence of peripheral visual processing on visual search and limb movements during trail making.

**Julia Norkitis (2015 - 2017)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2017)

*Project:* Effects of attentional modulation on visual search during motor behavior in healthy, young adults.

**Paige Vargo-Wilford (2015 - 2016)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2016)

*Project:* Effects of impaired visual search on motor skill performance in Parkinson's disease.

**Hannah Boyce (2014 - 2016)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2016)

*Project:* Examining the effects of aging on visual search during motor learning.

**Kristen Fuss (2014 - 2015)**

*Program:* University of South Carolina, Major in Exercise Science (BS Graduate in 2015)

*Project:* Examining the influences of visual search on impairments in visuomotor learning in patients with stroke.

**Divyesh Patel (2013 - 2014)**

**Program:** University of South Carolina, Major in Exercise Science (BS Graduate in 2014)

**Project:** Eye-hand coordination during anti-reaching.

**Kayla Goins (2013 - 2014)**

**Program:** University of South Carolina, Major in Exercise Science (BS Graduate in 2014)

**Project:** Examining mechanisms of sensorimotor learning during action selection.

**Angela Ross (2013)**

**Program:** University of South Carolina, Major in Exercise Science (BS Graduate in 2013)

**Project:** Examining the effects of aging on visual search during trail making.

**Christina Neiger (2013)**

**Program:** University of South Carolina, Major in Exercise Science (BS Graduate in 2013)

**Project:** Brain injury interventions and assessments.

**Megan Sanborn (2013)**

**Program:** University of South Carolina, Major in Exercise Science (BS Graduate in 2013)

**Project:** Investigating neurological and proprioception impairments following traumatic brain injuries and strokes.

---

**UNDERGRADUATE TRAINEE AWARDS**

---

**Developing an objective biomarker for autonomic dysfunction in veterans with post-traumatic stress disorder**

**Recipient:** Ryan McNutt (Primary Mentor)

**Sponsor:** University of South Carolina, Magellan Scholar Award

**Term:** 01/01/2019 – 12/31/2019

**Funding:** \$2,500

**Validation of a novel paradigm designed to examine the effects of mental fatigue on attention and response inhibition**

**Recipient:** Cassandra Bright (Primary Mentor)

**Sponsor:** University of South Carolina, Mini-Magellan Award

**Term:** 05/01/2018 – 04/30/2019

**Funding:** \$700

**Validation of a novel task designed to examine changes in heart rate variability related to arousal**

**Recipient:** Ryan McNutt (Primary Mentor)

**Sponsor:** University of South Carolina, Mini-Magellan Award

**Term:** 05/01/2018 – 04/30/2019

**Funding:** \$700

**Influence of visuospatial memory on visual search during motor learning**

**Recipient:** Brianna Eberl (Primary Mentor)

**Sponsor:** University of South Carolina, Magellan Scholar Award

**Term:** 01/01/2018 – 12/31/2018

**Funding:** \$2,700

**Examining the roles of visual processing and eye-hand coordination in Parkinson's disease**

**Recipient:** Victoria Turnbull (Primary Mentor)

**Sponsor:** University of South Carolina, Magellan Scholar Award

**Term:** 05/01/2017 – 04/30/2018

**Funding:** \$3,000

**Examining the influence of attentional mechanisms on visual search and visuomotor performance**

**Recipient:** Julia Norkitis (Primary Mentor)

**Sponsor:** University of South Carolina, Magellan Scholar Award

**Term:** 05/01/2016 – 04/30/2017

**Funding:** \$3,000

**Examining the effects of aging on visual search during motor learning**

**Recipient:** Hannah Boyce (Primary Mentor)  
**Sponsor:** University of South Carolina, Magellan Scholar Award  
**Term:** 05/01/2015 – 04/30/2016  
**Funding:** \$3,000

**Examining the influences of impaired visual search on visuomotor learning in patients with stroke**

**Recipient:** Kristen Fuss (Primary Mentor)  
**Sponsor:** University of South Carolina, Magellan Scholar Award  
**Term:** 01/01/2015 – 12/31/2015  
**Funding:** \$3,000

**Predicting post-stroke cognitive recovery using neuroimaging and trail making tasks**

**Recipient:** Olivia Spead (Primary Mentor)  
**Sponsor:** University of South Carolina, Magellan Scholar Award  
**Term:** 05/01/2014 – 04/30/2015  
**Funding:** \$2,500

**Examining mechanisms of sensorimotor learning during action selection**

**Recipient:** Kayla Goins (Primary Mentor)  
**Sponsor:** University of South Carolina, Magellan Scholar Award  
**Term:** 05/01/2014 – 04/30/2015  
**Funding:** \$2,500

**Examining the effects of aging on visual guided search during trail making**

**Recipient:** Angela Ross (Primary Mentor)  
**Sponsor:** University of South Carolina, Magellan Scholar Award  
**Term:** 05/01/2013 – 04/30/2014  
**Funding:** \$2,500

---

**OTHER TEACHING ACTIVITIES**

---

**JOURNAL CLUB – REHABILITATION SCIENCES (2012 – 2016)**

**Institution:** University of South Carolina, Department of Exercise Science  
**Role:** Founded and organized a biweekly journal club for graduate students specializing in rehabilitation sciences

**JOURNAL CLUB – NEUROREHABILITATION (2007 – 2011)**

**Institution:** Queen's University, Centre for Neuroscience Studies  
**Role:** Organized a monthly journal club for students performing research in neurorehabilitation

**JOURNAL CLUB – NEURAL CONTROL OF EYE MOVEMENTS (1995 – 2000)**

**Institution:** McGill University, Departments of Neurology and Neurosurgery, Physiology, and Biomedical Engineering  
**Role:** Organized a monthly journal club for students performing research on neural control of eye movements

---

**RESEARCH**

---

**RESEARCH AWARDS**

---

**Recipient: Training in Grantsmanship for Rehabilitation Research**

**Term:** 2015 – 2016  
**Sponsor:** National Institute of Child Health and Human Development  
**Description:** Mentored program in grantsmanship with acceptance based on scientific merit and potential for future NIH funding

**Recipient: Brain Star Award**

**Term:** 2006  
**Sponsor:** Canadian Institutes of Health Research, Institute of Neuroscience, Mental Health, and Addiction  
**Description:** One-time award for a high-impact publication in the field of neuroscience

**Recipient: Brain Star Award**

**Term:** 2006  
**Sponsor:** Canadian Institutes of Health Research, Institute of Neuroscience, Mental Health, and Addiction  
**Description:** One-time award for a high-impact publication in the field of neuroscience

**Recipient: Graduate Research Fellowship**

**Term:** 1996 – 2001  
**Sponsor:** Canadian Institutes of Health Research, Institute of Neuroscience, Mental Health, and Addiction  
**Description:** Five-year graduate training fellowship

---

**EXTERNAL GRANT SUPPORT (PRINCIPAL INVESTIGATOR)**

---

**CURRENT**

**Abnormal visual search and motor function in stroke (PI: Troy Herter)**

**Objective:** Examine the effects of impaired visual search on visuomotor, functional (daily), and driving performance after stroke.  
**Duties:** Oversee all aspects of (1) study design, (2) implementation of protocols, (3) training of graduate assistants, (4) collection and analysis of visuomotor, functional, and driving data, and (5) dissemination of results.  
**Sponsor:** American Heart Association, Grant-in-Aid (Ranked 1<sup>st</sup> of 745 national applications)  
**Term:** 07/01/2017 – 06/30/2019  
**Funding:** \$154,000

**PENDING**

**Improving prediction of motor learning and recovery after stroke (PI: Troy Herter)**

**Objective:** Study the effects of improvements in visual search and motor control on visuomotor learning and recovery after stroke.  
**Duties:** Oversee all aspects of (1) study design, (2) implementation of protocols, (3) training of graduate assistants, (4) collection and analysis of visuomotor, functional and driving data, and (5) dissemination of results.  
**Sponsor:** National Institute of Child Health and Development, R01  
**Status:** Resubmission planned for Fall 2019

**Predicting driving performance from novel measures of motor learning in stroke (PI: Troy Herter)**

**Objective:** Study the effects of improvements in visual search and motor control on visuomotor learning and recovery after stroke.  
**Duties:** Oversee all aspects of (1) study design, (2) implementation of protocols, (3) training of graduate assistants, (4) collection and analysis of visuomotor, functional and driving data, and (5) dissemination of results.  
**Sponsor:** American Heart Association, Transformational Project Award  
**Status:** Resubmission planned for Spring 2020

**Novel biomarkers for predicting functional motor deficits after stroke (PI: Troy Herter)**

**Objective:** Identify novel behavioral and neuroimaging biomarkers to predict who will benefit from novel, multimodal interventions.  
**Duties:** Oversee all aspects of (1) study design, (2) implementation of protocols, (3) training of graduate assistants, (4) collection and analysis of visuomotor, functional, driving and neuroimaging data, and (5) dissemination of results.  
**Sponsor:** National Institute of Child Health and Development, R01  
**Status:** Resubmission planned for Spring 2020

---

**EXTERNAL GRANT SUPPORT (CO-INVESTIGATOR)**

---

**CURRENT**

**Validating neuroelectric biomarkers of concussion recovery (PI: Davis Moore)**

**Objective:** Determine if EEG signals related to error monitoring during upper-limb tasks are predictive of concussion recovery.  
**Duties:** Oversee (1) implementation of protocols, (2) training of graduate assistants, and (3) collection and analysis of behavioral and EEG data. Assist with (4) study design and (5) dissemination of results.  
**Sponsor:** National Institute of Neurological Disorders and Stroke, R03  
**Term:** 07/01/2018 – 06/30/2020  
**Funding:** \$146,500

## PENDING

### Neural correlates of three-dimensional reach control (PI: Jill Stewart)

**Objective:** Develop a model of the neural correlates of three-dimensional reach control.

**Duties:** Assist with (1) study design, (2) collection and analysis of behavioral and MRI data, and (3) dissemination of results.

**Sponsor:** National Institute of Child Health and Development, R01

**Status:** Resubmission planned for Fall 2019

### Validating the neurophysiological indices of attentional inhibition as biomarkers of concussion recovery (PI: Davis Moore)

**Objective:** Determine if EEG signals related to attentional inhibition during upper-limb tasks are predictive of concussion recovery.

**Duties:** Oversee (1) implementation of protocols, (2) training of graduate assistants, and (3) collection and analysis of behavioral and EEG data. Assist with (4) study design and (5) dissemination of results.

**Sponsor:** Rehabilitation Research and Development Service, SPIRE

**Status:** Submission planned for Fall 2019

## INTERNAL GRANT SUPPORT (PRINCIPAL INVESTIGATOR)

---

### COMPLETE

#### Coupling robotic assessment with gaze tracking to assess action selection following stroke

**Sponsor:** University of South Carolina, ASPIRE II Integration Research Grant

**Recipient:** Dr. Troy Herter (Principal Investigator)

**Term:** 05/01/2013 – 08/30/2015

**Funding:** \$100,000

## PUBLISHED JOURNAL ARTICLES (38 PUBLICATIONS, 1241 CITATIONS, H-INDEX=17)

---

§ Senior Author, ‡ Institutional collaboration, † Multicenter collaboration, \* Trainees

1. ‡ \*Baird JF, Gaughan ME, Heath SM, Sarzynski MA, **Herter TM**, Fritz SL, den Ouden DB, Stewart JC. The effect of energy-matched exercise intensity on brain-derived neurotrophic factor and motor learning. *Neurobiol Learning Mem*, 156, 33-44, 2018.  
**Role:** Assisted with study design, data analyses, and manuscript preparation.
2. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Vision of the upper limb fails to compensate for kinesthetic impairments in subacute stroke. *Cortex*, 109, 245-259, 2018.  
**Role:** Designed and programmed task. Created and validated measures. Assisted with data analyses and manuscript preparation.
3. Takei T, Crevecoeur F, **Herter TM**, Cross KP, Scott SH. Correlations between primary motor cortex activity with recent past and future limb motion during unperturbed reaching. *J Neurosci*. 38, 7787-7799, 2018. **(1 citation)**  
**Role:** Collected all behavioral and neurophysiological data. Assisted with manuscript preparation.
4. §‡ \*Singh T, \*Perry CM, Fritz SL, Fridriksson J, **Herter TM**. Eye movements interfere with limb motor control in stroke survivors. *Neurorehabil Neural Repair*. 32, 724-734, 2018.  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
5. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Robotic characterization of ipsilesional motor function in subacute stroke. *Neurorehabil Neural Repair*, 31, 571-582, 2017. **(4 citations)**  
**Role:** Assisted with creating and validating measures, data analyses, and manuscript preparation.
6. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Inter-rater reliability of kinesthetic measurements with the KINARM robotic exoskeleton. *J Neuroeng Rehabil*. 14:42, 1-9, 2017. **(5 citations)**  
**Role:** Designed and programmed task. Created and validated measures. Assisted with data analyses and manuscript preparation.
7. §‡ \*Singh T, Fridriksson J, \*Perry C, \*Tryon SC, \*Ross A, Fritz S, **Herter TM**. A novel computational model to probe visual search deficits during motor performance. *J Neurophysiol*, 117, 79-92, 2017. **(3 citations)**  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
8. † Kenzie JM, Semrau JA, Findlater SE, Yu AY, Desai JA, **Herter TM**, Hill MD, Scott SH, Dukelow SP. Localization of impaired kinesthetic processing post-stroke. *Front Hum Neurosci*, 10: 505, 2016. **(10 citations)**  
**Role:** Designed and programmed task. Created and validated measures. Assisted with data analyses and manuscript preparation.

9. ‡ \*Middleton A, Fulk GD, **Herter TM**, Beets MW, Donley J, Fritz SL. Self-selected and maximal walking speeds provide greater insight into fall status than walking speed reserve among community-dwelling older adults. *Am J Phys Med Rehabil.* 95, 475-482, 2016. **(12 citations)**  
**Role:** Assisted with study design, data analyses, and manuscript preparation.
10. † Findlater SE, Desai JA, Semrau JA, Kenzie JM, Rorden C, **Herter TM**, Scott SH, Dukelow SP. Central perception of position sense involves a distributed neural network: Evidence from lesion-behavior analyses. *Cortex.* 79, 42-56, 2016. **(12 citations)**  
**Role:** Designed task. Created and validated measures. Assisted with data analyses and manuscript preparation.
11. ‡ \*Middleton JA, Fulk GD, Beets MW, **Herter TM**, Fritz SL. Self-selected walking speed is predictive of daily ambulatory activity in older adults. *J Aging Phys Act,* 24, 214-222, 2016. **(15 citations)**  
**Role:** Assisted with study design, data analyses, and manuscript preparation.
12. Heming E, Lillicrap T, Omrani M, **Herter TM**, Pruszynski JA, and Scott SH. Primary motor cortex neurons classified in a postural task predict muscle activation patterns in a reaching task. *J Neurophysiol,* 115, 2021-2032, 2016. **(6 citations)**  
**Role:** Collected all behavioral and neurophysiological data. Assisted with manuscript preparation.
13. § \*Singh T, \*Perry CM, **Herter TM**. A geometric method for computing ocular kinematics and classifying gaze events using monocular eye tracking in a robotic environment. *J Neuroeng Rehabil,* 13: 10, 2016. **(4 citations)**  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
14. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Examining differences in patterns of sensory and motor recovery after stroke with robotics. *Stroke,* 46, 3459-69, 2015. **(25 citations)**  
**Role:** Designed and programmed tasks. Created and validated measures. Assisted with data analyses and manuscript preparation.
15. † Semrau JA, **Herter TM**, Kiss ZH, Dukelow SP. Disruption of proprioception from long-term thalamic deep brain stimulation: a pilot study. *Front Hum Neurosci,* 9: 244, 2015. **(2 citations)**  
**Role:** Designed task. Created and validated measures. Performed all data analyses. Assisted with manuscript preparation.
16. ‡ Desai R, **Herter TM**, Riccardi N, Rorden C, Fridriksson J. Concepts within reach: Action performance predicts action language processing in stroke. *Neuropsychologia,* 71: 217-24, 2015. **(17 citations)**  
**Role:** Performed data collection. Assisted with data analyses and manuscript preparation.
17. † Semrau JA, Wang JC, **Herter TM**, Scott SH, Dukelow SP. Relationship between visuospatial neglect and kinesthetic deficits after stroke. *Neurorehabil Neural Repair,* 29: 318-28, 2015. **(17 citations)**  
**Role:** Designed and programmed tasks. Created and validated measures. Assisted with data analyses and manuscript preparation.
18. ‡ **Herter TM**, Takei T, Munoz DP, Scott SH. Neurons in red nucleus and primary motor cortex exhibit similar responses to mechanical perturbations applied to the upper-limb during posture. *Front Integr Neurosci,* 9: 29, 2015. **(7 citations)**  
**Role:** Designed the study. Collected and analyzed behavioral, neurophysiological, and EMG data. Led manuscript preparation.
19. † Kenzie JM Semrau JA, Findlater SE, **Herter TM**, Hill MD, Scott SH, Dukelow SP. Anatomical Correlates of Proprioceptive Impairments Following Stroke: A Case Series. *J Neurologic Sci,* 342: 52-61, 2014. **(23 citations)**  
**Role:** Designed and programmed tasks. Created and validated measures. Assisted with data analyses and manuscript preparation.
20. † Tyryshkin K, Coderre AM, Abu-Zeid A, Glasgow JI, **Herter TM**, Dukelow SP, Bagg SD, Scott SH. A robotic object hitting task to quantify sensorimotor impairments in subjects with stroke. *J Neuroeng Rehabil,* 11: 47, 2014. **(36 citations)**  
**Role:** Assisted with design of measures, data analyses, and manuscript preparation.
21. † **Herter TM**, Scott SH, Dukelow SP. Systematic changes in position sense accompany normal aging. *J Neuroeng Rehabil,* 11: 43, 2014. **(39 citations)**  
**Role:** Designed study and task. Created and validated measures. Performed all data analyses. Led manuscript preparation.
22. §‡ \*Middleton A, Fritz SL, Liuzzo DM, Newman-Norlund R, **Herter TM**. Using clinical and robotic assessment tools to examine the feasibility of pairing tDCS with upper extremity physical therapy in patients with stroke and TBI: A consideration-of-concept pilot study. *Neurorehabil,* 35: 741-54, 2014. **(18 citations)**  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
23. † Fung D, **Herter TM**, Hill MD, Scott SH, Dukelow SP. Stroke recovery after unilateral posterior spinal artery stroke: A case report. *Int J Phys Med Rehabil,* S3: 004, 2014. **(2 citations)**  
**Role:** Designed tasks. Created and validated measures. Performed all data analyses. Assisted with manuscript preparation.
24. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Robotic identification of kinesthetic deficits after stroke. *Stroke,* 44: 3414-21, 2013. **(77 citations)**  
**Role:** Designed and programmed tasks. Created and validated measures. Assisted with data analyses and manuscript preparation.

25. † Dukelow SP, **Herter TM**, Bagg SD, Scott SH. The independence of deficits in position sense and visually guided reaching following stroke. *J Neuroeng Rehabil*, 9: 72, 2012. **(81 citations)**  
**Role:** Designed task. Created and validated measures. Performed all data analyses. Assisted with manuscript preparation.
26. † Debert CT, **Herter TM**, Dukelow SP. Robotic assessment of sensorimotor deficits after traumatic brain injury. *J Neurologic Phys Ther*, 36: 58-67, 2012. **(52 citations)**  
**Role:** Designed tasks. Created and validated measures. Performed all data analyses. Assisted with manuscript preparation.
27. † Reuter-Lorenz PA, **Herter TM**, Guitton D. Control of reflexive saccades following hemispherectomy. *J Cogn Neurosci*, 23: 1368-78, 2011. **(10 citations)**  
**Role:** Designed and programmed tasks. Collected and analyzed all data. Assisted with study design and manuscript preparation.
28. † Coderre AM, Abu-Zeid A, Dukelow SP, Demmer MJ, Moore KD, Demers MJ, Bretzke H, **Herter TM**, Glasgow JI, Norman KE, Bagg SD, Scott SH. Assessment of upper-limb sensorimotor function using visually-guided reaching. *Neurorehabil Neural Repair*, 24: 528-41, 2010. **(122 citations)**  
**Role:** Assisted with design and validation of measures and manuscript preparation.
29. † Dukelow SP, **Herter TM**, Moore KD, Demers MJ, Glasgow JI, Bagg SD, Norman KE, Scott SH. Quantitative assessment of limb position sense following stroke. *Neurorehabil Neural Repair*, 24: 178-87, 2010. **(198 citations)**  
**Role:** Designed task. Created and validated measures. Performed all data analyses. Assisted with manuscript preparation.
30. **Herter TM**, Korbel T, Scott SH. Comparison of neural responses in primary motor cortex to transient and continuous loads during posture. *J Neurophysiol*, 101: 150-163, 2009. **(45 citations)**  
**Role:** Designed the study. Collected and analyzed behavioral, neurophysiological, and EMG data. Led manuscript preparation.
31. **Herter TM**, Guitton D. Hemidecorticate patients exhibit multifaceted deficits during saccades to their intact visual hemifield. *Exp Brain Res*, 182: 11-25, 2007. **(3 citations)**  
**Role:** Designed the study. Designed and programmed tasks. Collected and analyzed all data. Led manuscript preparation.
32. Kurtzer I, **Herter TM**. Contrasting interpretations of the non-uniform distribution of preferred directions within primary motor cortex. *J Neurophysiol*, 97: 4390, 2007. **(8 citations)**  
**Role:** Co-authored manuscript.
33. **Herter TM**, Kurtzer I, Cabel DW, Haunts KA, Scott SH. Characterization of torque-related activity in primary motor cortex during a multi-joint postural task. *J Neurophysiol*, 97: 2887-1899, 2007. **(43 citations)**  
**Role:** Assisted with study design. Collected and analyzed behavioral, neurophysiological, and EMG data. Led manuscript preparation.
34. Kurtzer I, **Herter TM**, Scott SH. Nonuniform distribution of reach-related and torque-related activity in upper arm muscles and neurons of primary motor cortex. *J Neurophysiol*, 96: 3220-3230, 2006. **(38 citations)**  
**Role:** Assisted with study design. Collected and analyzed behavioral and EMG data. Assisted with manuscript preparation.
35. Kurtzer I, Pruszynski JA, **Herter TM**, Scott SH. Primate upper limb muscles exhibit activity patterns that differ from their anatomical action during a postural task. *J Neurophysiol*, 95: 493-504, 2006. **(67 citations)**  
**Role:** Assisted with study design. Collected and analyzed behavioral and EMG data. Assisted with manuscript preparation.
36. Kurtzer I, **Herter TM**, Scott SH. Random change in cortical load representation suggests distinct control of posture and movement. *Nat Neurosci*, 8: 498-504, 2005. **(Equal contributions by I. Kurtzer and T.M. Herter) (177 citations)**  
**Role:** Assisted with study design. Designed and programmed tasks. Collected and analyzed all behavioral, neurophysiological, and EMG data. Co-authored manuscript.
37. **Herter TM**, Guitton D. Accurate bidirectional saccade control by a single hemicortex. *Brain* 127: 1393-1402, 2004. **(22 citations)**  
**Role:** Designed the study. Designed and programmed tasks. Collected and analyzed all data. Led manuscript preparation.
38. **Herter TM**, Guitton D. Human head-free gaze saccades to targets flashed before gaze-pursuit are spatially accurate. *J Neurophysiol*, 80: 2785-2789, 1998. **(40 citations)**  
**Role:** Designed the study. Designed and programmed tasks. Collected and analyzed all data. Led manuscript preparation.

---

## SUBMITTED MANUSCRIPTS

---

§ Senior Author, ‡ Institutional collaboration, † Multicenter collaboration, \* Trainees

1. † **Herter TM**, Kurtzer I, Coderre A, Granat L, Crevecoeur F, Dukelow SP, Scott SH. Inter-joint correlations in position sense reflect the sensory contribution of biarticular muscles. *J Neurophysiol*, Submitted May 2019.  
**Role:** Designed study. Created and validated tasks and computational model. Performed all data analyses. Led manuscript preparation.

2. §‡ \*Harrison A, \*Perry CM, \*Singh T, \*Goins K, Fritz SL, Fridriksson J, \*\***Herter TM**. Impaired visual search interferes with visuomotor planning and execution in stroke. *Neurorehabil Neural Repair*. Submitted July 2019.  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
3. § \*Perry CM, \*Singh T, \*Goins K, **Herter TM**. Multiple processes simultaneously contribute to visuomotor learning. *Front Hum Neurosci*. Submitted July 2019.  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.
4. † **Herter TM**, Scott SH, Dukelow SP. Vision does not always help stroke survivors compensate for deficits in limb position sense. *J Neural Neural Eng Rehabil*, Submitted July 2019.  
**Role:** Designed study and task. Created and validated measures. Performed all data analyses. Led manuscript preparation.
5. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Differential loss of position sense and kinesthesia in sub-acute stroke. *Cortex*, Submitted July 2019.  
**Role:** Designed and programmed task. Created and validated measures. Assisted with data analyses and manuscript preparation.
6. §‡ \*Culbertson, R, Fritz SL, \*Handlery K, \*Malcom J, \*Fitz-Maurice S, \*Johnson A, **Herter TM**, Liuzzo D, Mathews H, Arnot C. KinesioTape® Has No Effect on Shoulder Proprioception, Strength, or Control of Movement When Using Robotic Assessment: A Randomized Control Trial. *J Orthop Sports Phys Ther*. Submitted December 2018.  
**Role:** Oversaw all aspects of study design, collection and analysis of data, and manuscript preparation.

---

## INVITED PRESENTATIONS

---

1. **Herter TM**. Searching for novel treatments for visuomotor deficits in stroke. York University, School of Kinesiology, 2019.
2. **Herter TM**. Searching for the role of eye movements in motor behavior. University of Calgary, Faculty of Kinesiology, 2017.
3. **Herter TM**. Visual search and attentional contributions to motor learning. Neuroscience of Attention Conference, University of South Carolina, Institute of Mind and Brain, 2016.
4. **Herter TM**. Searching for new ways to improve functional performance following stroke. Neuroscience Community Retreat, University of South Carolina, 2016.
5. **Herter TM**. Linking impairments of visual search with abnormal motor performance after stroke. Medical University of South Carolina, Stroke Recovery Research Center, 2016.
6. **Herter TM**. Linking impairments of visual search with deficits in motor behavior following stroke. Emory University, Department of Rehabilitation Medicine, 2016.
7. **Herter TM**. Probing real-time interactions between perception, cognition and eye-hand coordination. Summer Research Experience in Brain and Cognitive Sciences, Department of Psychology, University of South Carolina, 2014.
8. **Herter TM**. What should I do next? Assessment of action selection using advanced technology. Department of Exercise Science, University of South Carolina, 2014.
9. **Herter TM**. Robotic assessment of sensory, motor and cognitive contributions to action selection. Department of Biology, University of South Carolina Aiken, 2014.
10. **Herter TM**. Using technology to understand sensory, motor and cognitive contributions to complex action. Department of Neurology, University of South Carolina, 2013.
11. **Herter TM**. USC robotic brain assessment lab: Linking motor behavior to brain function. Department of Exercise Science, University of South Carolina, 2012.
12. **Herter TM**. Robotic brain assessment: Past, present and future. Department of Neurology, University of South Carolina, 2012.
13. **Herter TM**. Examining brain function and dysfunction with robotic assessment tools. Department of Exercise Science, University of South Carolina, 2011.
14. **Herter TM**. To infinity and beyond: robotic assessment of normal and impaired neurological function. Division of Physical Medicine and Rehabilitation, Department of Clinical Neurosciences, University of Calgary and Stroke Rounds, Calgary Stroke Program, University of Calgary and Calgary Health Region, 2011.
15. **Herter TM**. Robots: an innovative approach for assessment of brain dysfunction. School of Physical Therapy, Dalhousie University, 2009.
16. **Herter TM** Variability of limb position sense reflects the sensory contributions of biarticular muscles. Canadian Action Perception Network Annual Meeting, 2009.

17. **Herter TM.** Can robots improve assessment of limb position sense following stroke? Marc Smith Memorial Physical Medicine and Rehabilitation Research Day, Queen's University, 2008.
18. **Herter TM.** Can robots help with stroke? Neuroscience Public Research Days, Queen's University, 2008.
19. **Herter TM.** Keeping on track: Synergistic communication between the eyes and limb during reaching. Department of Kinesiology, University of Waterloo, 2007.
20. **Herter TM.** The neurophysiology of elbow grease: Probing motor control with mechanical loads. Department of Physiology, Queen's University, 2007.
21. **Herter TM.** Motor cortical responses during online versus static control of upper limb posture. Centre for Neuroscience Studies, Queen's University, 2007.
22. **Herter TM.** Neural gymnastics: Evidence for distinct cortical control of posture and movement in primary motor cortex. Canadian Physiological Society, 2005.
23. Guitton D, **Herter TM.** Visual and saccade processing in hemidecorticate patients. Society for the Neural Control of Movement, 2003.
24. **Herter TM.** Bidirectional saccade control in hemidecorticate patients. Department of Physiology, Queen's University, 2002
25. **Herter TM,** Guitton D. Role of efference information during online updating of saccade plans. Annual Fellows Day, Montreal Neurological Institute, 2000.

---

### CONFERENCE PRESENTATIONS (PAST 5 YEARS, 45 OF 80 TOTAL)

---

§ Senior Author, ‡ Institutional collaboration, † Multicenter collaboration, \* Trainees

1. §‡ \*Yazdani S, Yourganov G, Fridriksson J, Fritz SL, Stewart JC, **Herter TM.** Cortical damage and disconnection independently contribute to stroke-induced deficits in limb-motor control and motor-task performance. *Society for Neuroscience*, 2017.
2. ‡ Stewart JC, Hetherington A, Bruemmer D, Ichiyangi T, Rocktashel J, O'Donnell M, Simmons C, **Herter TM.** Effect of practice on the control of reach extent. *Society for Neuroscience*, 2017.
3. §‡ \*Norkitis JR, \*Perry CM, \*Harrison A, Fridriksson J, Fritz SL, **Herter TM.** Attentional modulation of visual search alters visuomotor performance without altering limb movements. *Society for Neuroscience*, 2017.
4. ‡ Baer J, Gaughan M, Saffer H, Sarzynski M, **Herter TM,** Fritz SL, Den Ouden D, Stewart JC. The effect of energy-matched exercise intensity on brain-derived neurotrophic factor and motor learning. *Society for Neuroscience*, 2017.
5. §‡ \*Singh T, \*Perry CM, **Herter TM.** Interference between oculomotor and limb motor movements in stroke survivors. *Society for Neuroscience*, 2017.
6. † Findlater SE, Tapper JE, Semrau JA, Kenzie JM, Yu AX, **Herter TM,** Scott SH, Dukelow SP. Brain regions associated with motor and proprioceptive recovery after stroke. *Society for Neuroscience*, 2017.
7. † Semrau JA, **Herter TM,** Scott SH, Dukelow SP. How assessment scale properties can limit understanding of inter-individual variability throughout stroke recovery. *Canadian Stroke Congress*, 2017.
8. † Findlater SE, Semrau JA, Kenzie JM, Yu AX, **Herter TM,** Scott SH, Dukelow SP. Predicting upper extremity recovery after stroke. *Canadian Stroke Congress*, 2017.
9. † Semrau JA, **Herter TM,** Scott SH, Dukelow SP. Characterizing kinesthesia with and without the use of vision after stroke. *Society for the Neural Control of Movement*, 2017.
10. † Findlater SE, Semrau JA, Kenzie JM, Yu AX, **Herter TM,** Scott SH, Dukelow SP. Proprioceptive deficits post-stroke. *Society for the Neural Control of Movement*, 2017.
11. § \*Perry CM, **Herter TM,** \*Singh T, \*Harrison A, \*Boyce H, \*Goins K. Underlying contributors to visuomotor learning change with aging. *Society for Neuroscience*, 2016
12. † Findlater SE, Semrau JA, Kenzie JM, Yu AY, **Herter TM,** Scott SH, Dukelow SP. The inability to compensate for proprioceptive deficits using vision after stroke: a lesion analysis. *Society for Neuroscience*, 2016.
13. ‡ Peters D, Fritz S, Stewart JC, Richardson JD, Middleton JA, Fridriksson J, Rorden C, Bonilha L, Gleichgerrcht E, **Herter TM,** Newman-Norlund R. Cortical disconnection of the ipsilesional primary motor cortex is associated with gait speed and upper extremity motor impairment in chronic stroke. *American Physical Therapy Association Combined Sections Meeting*, 2016.
14. ‡ Middleton JA, Fulk G, **Herter TM,** Beets M, Donley JD, Fritz SL. Walking speed reserve identifies fall status in older adults receiving physical therapy for impaired mobility but not in healthy controls: A cross-sectional study. *American Physical Therapy Association Combined Sections Meeting*, 2016.

15. §‡ \*Singh T, \*Perry CM, \*Tryon S, \*Ross A, Fridriksson J, Fritz SL, **Herter TM**. Impaired executive organization of visual search contributes to abnormal cognitive motor control. *Translational and Computational Motor Control*, 2015.
  16. §‡ **Herter TM**, \*Fuss K, \*Singh T, \*Perry CM, \*Goins K, \*Marebwa B, Fridriksson J, Fritz SL. Visuomotor learning is attenuated by impairments of visual search following stroke. *Society for Neuroscience*, 2015.
  17. § \*Perry CM, \*Singh T, \*Goins K, \*Marebwa B, **Herter TM**. Improvements in visual search contribute to motor learning. *Society for Neuroscience*, 2015.
  18. §‡ \*Singh T, \*Perry CM, \*Ross A, Fridriksson J, Fritz SL, **Herter TM**. Deficits in visual search following stroke contribute to impaired visuomotor processing and executive function. *Society for Neuroscience*, 2015.
  19. §‡ \*Tryon S, \*Spead O, \*Middleton JA, \*Marebwa B, Rorden C, Fridriksson J, Fritz SL, **Herter TM**. Lesion symptom mapping of brain regions involved in action selection and specification during trail making. *Society for Neuroscience*, 2015.
  20. † Findlater SE, Semrau JA, Kenzie JM, Yu AY, **Herter TM**, Scott SH, Dukelow SP. Ischemic versus hemorrhagic stroke: Differences in motor recovery rates. *Society for Neuroscience*, 2015.
  21. † Kenzie JM, Semrau JA, Findlater SE, Desai JA, Yu AY, **Herter TM**, Hill MD, Scott SH, Dukelow SP. Lesion location is associated with kinaesthetic impairment post-stroke. *Society for Neuroscience*, 2015.
  22. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Quantifying motor recovery of the ipsilesional arm after stroke. *Society for Neuroscience*, 2015.
  23. † Tapper JE, Findlater SE, Kenzie JM, Wang MM, Desai JA, Yu AY, **Herter TM**, Scott SH, Dukelow SP. Neuroanatomical correlates of visually guided reaching after stroke. *Society for Neuroscience*, 2015.
  24. † Yajure JE, Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Discriminating visuospatial neglect from proprioceptive impairment using robotics. *American Society for Neurorehabilitation*, 2015.
  25. ‡ Desai R, **Herter TM**, Rorden C, Fridriksson J. Motor coordination predicts literal and figurative action sentence processing in stroke. *Society for Neurobiology of Language*, 2015.
  26. † Findlater SE, Semrau JA, Kenzie JM, Yu AY, **Herter TM**, Scott SH, Dukelow SP. Using lesion location analysis to predict proprioceptive deficits after stroke. *Canadian Stroke Congress*, 2015.
  27. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Rethinking timelines of sensorimotor recovery after stroke. *Canadian Stroke Congress*, 2015.
  28. § \*Singh T, \*Perry CM, \*Goins K, \*Marebwa B, **Herter TM**. Practice-related improvements in visuospatial attention drive motor learning. *Society for the Neural Control of Movement*, 2015.
  29. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Using robotics to characterize the relationship of position sense and kinesthetic impairments after stroke. *Society for the Neural Control of Movement*, 2015.
  30. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Characterizing proprioceptive recovery after stroke using robotics. *Translational and Computational Motor Control*, 2014.
  31. § \*Singh T, \*Ross AL, \*Perry CM, **Herter TM**. Declines of performance in the Trail Making Test across adulthood and following stroke reflect multifaceted deficits in visuomotor and cognitive function. *Society for Neuroscience*, 2014.
  32. § \*Perry CM, \*Singh T, \*Ross AL, **Herter TM**. Eye-hand coordination is flexibly modulated by predictability of target location during reaching movements in healthy adults and individuals with stroke. *Society for Neuroscience*, 2014.
  33. § **Herter TM**, \*Singh T, \*Perry CM, \*Ross AL, \*Marebwa B. Declines in the efficiency of action selection across adulthood and following stroke are associated with decreases in the proficiency of visual search. *Society for Neuroscience*, 2014.
  34. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Relationship of motor and proprioceptive recovery after stroke. *Society for Neuroscience*, 2014.
  35. † Findlater S, Semrau JA, Kenzie JM, Desai JA, **Herter TM**, Scott SH, Dukelow SP. Predicting longitudinal changes in proprioception after stroke using VLMS. *Society for Neuroscience*, 2014.
  36. † Findlater S, Wang MW, Semrau JA, Kenzie JM, Desai JA, **Herter TM**, Scott SH, Dukelow SP. The role of vision to compensate for proprioceptive deficits using lesion mapping and robotics. *Canadian Stroke Congress*, 2014.
  37. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Quantitative assessment of post-stroke proprioception using robotics. *Annual International IEEE Engineering in Medicine and Biology Conference*, 2014.
  38. † Findlater S, Kenzie JM, Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Symptom mapping of proprioception following stroke. *Annual International IEEE Engineering in Medicine and Biology Conference*, 2014.
-

39. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Longitudinal robotic quantification of motor deficits after stroke. *Advances in Stroke Recovery*, 2014.
40. † Middleton JA, Liuzzo D, Newman-Norlund R, Fritz S, **Herter TM**. Using clinical and robotic assessment tools to examine the feasibility of pairing tDCS with standard physical therapy in patients with stroke and TBI. *Society for Neuroscience*, 2013.
41. † Findlater S, Desai JA, Semrau JA, **Herter TM**, Scott SH, Dukelow SP. The neural correlates of position sense after stroke. *Society for Neuroscience*, 2013.
42. † Kenzie JM, Semrau JA, Findlater S, Desai JA, **Herter TM**, Scott SH, Dukelow SP. Identification of brain areas associated with impaired kinesthesia following stroke using robotics and voxel-based lesion symptom mapping. *Society for Neuroscience*, 2013.
43. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Comparison of post-stroke position sense and kinesthesia using robotics. *Society for Neuroscience*, 2013.
44. Crevecoeur F, **Herter TM**, Scott SH. Neural correlates of online reaching control in primary motor cortex. *Society for Neuroscience*, 2013.
45. † Semrau JA, **Herter TM**, Scott SH, Dukelow SP. Post-stroke assessment of kinesthesia with and without vision using robotic. *International Stroke Congress*, 2013.

---

## SERVICE

---

### PROFESSIONAL SERVICE

---

#### GRANT REVIEW

Canadian Institutes of Health Research  
Defense Medical Research and Development Program  
National Institution on Disability, Independent Living, and Rehabilitation Research  
Research Foundation of Flanders

#### JOURNAL REVIEW

Annals of the New York Academy of Sciences  
European Journal of Neuroscience  
Experimental Brain Research  
Frontiers in Human Neuroscience  
IEEE Transactions on Neural Systems and Rehabilitation Engineering  
Journal of Neurophysiology  
Journal of the International Psychological Society  
Multisensory Research  
Neurorehabilitation and Neural Repair  
Neuroscience  
PLoS One  
Translational Stroke Research

#### PROFESSIONAL MEMBERSHIPS

Society for Neuroscience  
American Heart Association  
American Physical Therapy Association  
American Society for Neurorehabilitation  
Canadian Association for Neuroscience

### UNIVERSITY SERVICE

---

#### COMMITTEES

University of South Carolina Neuroscience Retreat Organizing Committee (2017 – Present)  
Mind and Brain Annual Conference Organizing Committee (2016)  
University of South Carolina Senate (2013 – 2016)

#### **GRANT REVIEW**

University of South Carolina ASPIRE Research Program  
University of South Carolina SPARC Graduate Fellowship Program  
University of South Carolina Magellan Undergraduate Research Program  
University of South Carolina School of Medicine Research Development Fund

#### **OTHER**

Reviewer for Caravel – University of South Carolina Undergraduate Research Journal  
Judge for Discover USC – University of South Carolina Undergraduate Research Symposium

#### **COLLEGE SERVICE**

---

##### **COMMITTEES**

Arnold School of Public Health Council of Program Directors (2014 – 2016)  
Arnold School of Public Health Course Evaluation Committee (2014 – 2015)  
Arnold School of Public Health Student Awards Committee (2013 – 2016)

#### **DEPARTMENTAL SERVICE**

---

##### **COMMITTEES**

Athletic Training Master's Program Curriculum Committee (2016 – Present)  
Exercise Science Master's Program Curriculum Committee (2016 – Present)  
Exercise Science Undergraduate Program Curriculum Committee (2016 – Present)  
Exercise Science Representative for Integrated Biomedical Sciences Program (2015 – 2017)  
Exercise Science Executive Committee (2014 – 2016)  
Exercise Science Faculty Hiring Committees (2013, 2014, 2015)  
Physical Therapy Program Faculty Hiring Committee (2013)

##### **OUTREACH**

Emcee Exercise Science Club Academic Bowl (2013 – Present)

#### **COMMUNITY SERVICE**

---

##### **UNITED STATES SOCCER FEDERATION**

Referee (2012 – Present)

##### **CANADIAN SOCCER ASSOCIATION**

Referee (2004 – 2012)