

CURRICULUM VITAE**ELA B PLOW PhD PT**

Assistant Professor, Cleveland Clinic Lerner College of Medicine,
 Assistant Staff, Biomedical Engineering,
 Department of Physical Medicine and Rehabilitation,
 Center for Neurological Restoration, Neurological Institute
 Cleveland Clinic
 9500 Euclid Ave, ND20
 Cleveland, OH, 44195
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<http://www.lerner.ccf.org/bme/plow/>

EDUCATION & FELLOWSHIP**Post-doctoral Fellowship in Neurology**

10/2007 - 1/2010

Harvard Medical School, Berenson-Allen Center for Noninvasive Brain Stimulation, Beth Israel Deaconess Medical Center, Boston, MA

- *Brain Stimulation, Stroke, Transcranial Magnetic Stimulation (TMS), Transcranial Direct Current Stimulation (tDCS)*
- *Advisors:* Prof. Alvaro Pascual-Leone
Dr. Lotfi B. Merabet

Ph.D. in Rehabilitation Science (Minor, Neuroscience)

1/2003 - 10/2007

University of Minnesota, Minneapolis, MN

- *Dissertation Title:* Neural Substrates of Motor Skill Learning
- *Focus:* Stroke, Rehabilitation, Functional Neuroimaging, Motor Control, Learning, Clinical Trials
- *Committee:* Prof. James R Carey (Chair)
Dr. Teresa Kimberley
Dr. Angus MacDonald III
Prof. James Ashe
Prof. Carl J Kukulka

B.Sc. in Physical Therapy

8/1997 – 4/2002

Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India

- Neuro specialization

RESEARCH INTEREST KEYWORDS

- Stroke, Motor Control, Rehabilitation, Upper limbs, Learning, Clinical Trials, Clinical Research
- Plasticity, Functional Neuroimaging, Transcranial Magnetic Stimulation (TMS), Transcranial Direct Current Stimulation (tDCS), Diffusion Tensor Imaging (DTI)
- Motor Cortex, Mapping, Cortical Neurophysiology, Evoked potentials, Corticospinal Neurophysiology
- Spinal Cord Injury, Neuropathic Pain, Aging
- Tailored Brain Stimulation, Tailored Rehabilitation, Patient-specific Treatments

ACADEMIC POSITIONS**Assistant Professor**

Cleveland Clinic Lerner College of Medicine

2014- Present

Investigator

VA's Center of Excellence: Advanced Platform Technology (APT) Center

2014- Present

Investigator

VA's Center of Excellence: Functional Electrical Stimulation (FES) Center

2015- Present

Assistant Staff

Cleveland Clinic, Department of Biomedical Engineering, Lerner Research Institute 2013- Present

Staff

Cleveland Clinic, Center for Neurological Restoration, Neurological institute 2011- Present

Staff

Cleveland Clinic, Department of Physical Medicine & Rehabilitation, Neurological Institute 2010- Present

University Graduate Faculty

Cleveland State University, Dept. of Chemical and Biomedical Engineering 2010- Present

Project Staff Scientist

Cleveland Clinic, Department of Biomedical Engineering, Lerner Research Institute 2010- 2013

University Graduate Faculty

Cleveland State University, Dept. of Chemical and Biomedical Engineering 2010- Present

Graduate Fellow

University of Minnesota, Program in Rehabilitation Science, Dept. of Physical Therapy 2006-2007

Research and Teaching Assistant

University of Minnesota, Program in Rehabilitation Science, Dept. of Physical Therapy 2003-2006

Graduate Intern

University of Rhode Island, Eleanor Slater Hospital 2002-2002

Home Health Care Physical Therapist

Private Practice, India 2002-2002

RESEARCH FUNDING**Active****NIH 1K01HD069504**

Plow (PI)

09/2011 – 06/2017

Brain Stimulation- aided Stroke Rehabilitation: Neural Mechanisms of Recovery

The present study compares neural mechanisms in patients who respond to brain stimulation versus those who do not to better understand why there is variability in its benefit.

Role: PI

American Heart Assoc. 16GRNT27720019

Plow (PI)

01/01/2016-12/31/2017

Novel brain stimulation therapies in Stroke guided by expressions of plasticity.

The present study aims to tailor brain stimulation therapies in stroke.

Role: PI

American Heart Assoc. 13BGIA17120055

Plow (PI)

07/2013–06/2016

Improving Targeting of Brain Stimulation in Stroke Using Novel Image-Guidance

The overall aim of this application is to establish feasibility of a new method of imaging to localize brain stimulation in stroke.

Role: PI

Conquer Paralysis Now

Plow (PI)

09/2015- 08/2016

Improving Spinal Cord Injury Rehabilitation Interventions by Retraining the Brain with Stimulation: Applying Concepts from Stroke

Role: PI

NIH's CTSC RPC: 2014-1067

Cunningham (PI)

11/2014-11/2016

Bilateral vs. Unilateral Therapy for Chronic Stroke Across Varying Degrees of Impairment

The major goal is to compare effect of different rehabilitative therapies upon brain function in stroke.

Version Date: Oct 6, 2016

Role: Graduate Mentor

NIH's CTSC RPC: 2016-XXXX Potter-Baker (PI) 4/2016-3/2017
Alleviating Maladaptive plasticity to improve Rehabilitative Outcomes in Incomplete Quadriplegia
The major goal of this project will be to directly affect neuroplasticity in the motor cortex using brain stimulation to enhance function of the weak upper limbs in incomplete cervical Spinal Cord Injured population
Role: Post-doctoral Mentor and Co-I

Enspire DBS Therapy Inc. Machado (PI) 6/2016-5/2018
Electrical Stimulation of the Dentate Nucleus area (EDEN) for Improvement of Upper Extremity Hemiparesis due to Ischemic Stroke: A Safety and Feasibility Study
The goal of the project is to conduct the first clinical study in patients with stroke using deep brain stimulation of the cerebellum.
Role: Co-Investigator

NIH UH3 Machado, Baker (PIs) 09/2016-8/2021
Deep Cerebellar Electrical Stimulation for Post-Stroke Motor Recovery
The goal of the project is to conduct the first clinical study in patients with stroke using deep brain stimulation of the cerebellum.
Role: Co-Investigator

VA Merit Review Knutson (PI) 01/2017-1/2020
Hand Therapy after Stroke with Contralaterally Controlled FES Plus Video Games
The goal of this project is to test the effectiveness of pairing video-gamng technology with electrical stimulation therapy of the paretic upper limb in individuals with stroke.
Role: Co-Investigator

Scott Hamilton Cancer Alliance Davis (PI) 11/2012-12/2016
Neural Substrates of Cognitive Impairments and Movement-Related fatigue Adjuvant Chemotherapy
The overall goal of this study is to understand neural mechanisms of chemotherapy-induced toxicity that explain fatigue and cognitive impairments in breast-cancer survivors.
Role: Co-Investigator

NIH's CTSC Ghasia (PI) 07/2015-07/2016
The goal is to utilize brain stimulation in children with amblyopia.
Role: Co-investigator

Pending

DoD W81XWH-BAA-15-1 Plow (PI) 09/2016- 08/2020
Improving Spinal Cord Injury Rehabilitation Interventions by Retraining the Brain
The major goal of this project is to conduct a nationwide, phase I/II clinical trial led by the PI at the Cleveland Clinic to directly affect adaptive neuroplasticity in the motor cortex using brain stimulation to enhance function of the weak upper limbs in incomplete cervical Spinal Cord Injured population.
Role: PI
Status: **Wait-list**

NIH R01 HD088467 Plow (PI) 02/2017- 01/2022
Tailoring Brain Stimulation for Stroke Rehabilitation
The major goal of this project is to customize brain stimulation to the patient's level of damage and deficit following stroke.
Role: PI
Status: **Pending IRG review**

NIH R01 Machado (PI) 09/2016-8/2021
Dentato-thalamocortical electrical stimulation in post-stroke motor recovery
The goal of this project is to test the effectiveness of deep brain stimulation of the cerebellum in animal models of stroke.
Role: Co-Investigator
Status: Pending IRG review

VA Career development Award-I Potter-Baker (PI) 8/2016- /7/2018
Brain Stimulation to Alleviate Weakness and Maladaptive Plasticity in SCI
The goal of this career development award is to provide Kelsey Potter-Baker with a mentored research experience in the field of spinal cord injury rehabilitation.
Role: Primary Career Development Award Mentor
Status: VA score 199

NIH R21 Bhattacharya, Anand 9/2016-8-2018
rTMS in Depression
The main goal of the project is to conduct a clinical trial tests how non-invasive brain stimulation with rTMS affects symptoms of depression using Magnetic Resonance Spectroscopy.
Role: Co-Investigator
Status: Pending review

North American Spine Society Jimenez (PI) 9/2016-8/2018
A randomized, double blind, sham-controlled trial of repetitive transcranial magnetic stimulation in chronic low back pain
The major objective is to introduce non-invasive brain stimulation as a therapeutic technique to relieve chronic neuropathic pain in individuals with intractable low back pain.
Role: Co-Investigator
Status: Pending review

Completed

PFIZ1207MD Davis (PI) 07/2012-06/2017
Exploration of the Neuromuscular Mechanisms Associated with Sunitinib Related Fatigue
The goal of this industry-sponsored study is to address chemotherapy-induced neurotoxicity in survivors of with renal carcinoma using single pulse Transcranial Magnetic Stimulation
Role: Co-Investigator

NIH-NINDS R01NS35130 Plow (PI: Transfer from Yue) 02/2008- 01/2013
Effects of Mental Training on Voluntary Muscle Strength in Aging
To examine whether mental training with brain activity feedback yields greater strength in elderly.
Role: PI (Transfer from Yue)

DoD W81XWH-11-1-0707 Plow (PI) 09/2011- 09/2015
Directing Neuroplasticity to Improve Rehabilitative Outcomes of the Upper Limb in Incomplete Quadriplegia
The major goal of this project will be to directly affect adaptive neuroplasticity in the motor cortex using brain stimulation to enhance function of the weak upper limbs in incomplete cervical Spinal Cord Injured population.
Role: PI

NIH's CTSC Pundik (PI) 06/2012- 05/2013
Feasibility of enhancing recovery of sensory deficits after stroke with rTMS
To test the feasibility and preliminary efficacy of rTMS targeted to sensory cortical regions in stroke.
Role: Co-Investigator

NIH's CTSC-RPC Plow (PI) 03/2011-12/2012
A pilot study of Brain Stimulation-aided Stroke Rehabilitation: Neural Mechanisms of Recovery
To explore neural mechanisms of recovery underlying (tDCS) and concurrent rehabilitation in stroke.
Role: PI

CNPQ, Brazil Conforto, Plow (PIs)
Award for travel for student from the University of Sao Paulo, Brazil, to the Cleveland Clinic Foundation. The student will perform research activities under the guidance of Dr. Plow.

Veterans Affairs' Merit Review B2714R Lin (PI) 10/2011-9/2011
Respiratory Muscle conditioning using Magnetic Stimulation for SCI Patients (Lin)
The major goal of the study is to examine the effectiveness of Functional Magnetic Stimulation, a noninvasive method of neuromuscular activation, versus pulmonary physical therapy in spinal cord injury.
Role: Co-Investigator

NovaVision Inc., Boca Raton, FL	Merabet, Pascual-Leone	11/2007- 01/2010
Combining Noninvasive Brain Stimulation with Visual Rehabilitation in Hemianopia		
Role: Fellow		
Scientific & Technological Coop: Italy & USA	Merabet, Cattaneo (PIs)	09/2007-2009
Travel Grant between USA and Italy		
Role: Co-Investigator		
University of Minnesota Dissertation Fellowship	Plow (PI)	9/2006-7/2007
Neural Substrates of Motor Skill Learning Revealed Using Functional MRI		
Role: PI		

PROFESSIONAL AFFILIATIONS

VA's Center of Excellence: Advanced Platform Technology (APT) Center	2014 - Present
VA's Center of Excellence: Functional Electrical Stimulation (FES) Center	2015- Present
American Heart Association (Stroke)	2012 – Present
American Society for Neurorehabilitation	2011 – Present
American Academy of Neurology	2010– Present
Society for Neuroscience	2007 – Present
American Physical Therapy Association	2005 – Present

AWARDS, HONORS AND MEDIA RELEASES

Invited Commentary on a research article (<i>Nature</i>) in <i>Huffington Post</i>	2016
Winner of 'Conquer Paralysis Now' Challenge. Press Release	2015
Article published in the Neuroscientist receives Press release from Sage Publishers, Neurotech Business Reports, Science Daily	2014
Medpage Today mention regarding editorial published in Neurology	2014
Article from Neurotherapeutics appeared in MDlinx	2013
Article from Trials appeared in MDlinx	2013
Front-page coverage in Center for Clinical Research Newsletter, Cleveland Clinic for Study Team Communication in the 21 st Century	2013
Featured in Research News by Cleveland Clinic "Brain Plasticity and Recovery from Disease"	2012
Article from Neurorehabilitation and Neural Repair featured on MDlinx	2012
Article from Journal of Pain made cover image	2012
Feature article in Neuroscience Pathways by Cleveland Clinic	2011
Feature article in Frontiers in Rehabilitation by Cleveland Clinic	2011
Feature article Frontiers in Rehabilitation "Improving Efficacy of Stroke Rehabilitation"	2010
Press Release (Doctor's Guide- Neurologic)	2010
Feature article Neurology Today "Use of Transcranial Stimulation to Improve Vision Rehabilitation"	2009
Best Student in Physical Therapy, Department of Physical Therapy, Post Graduate Institute of Medical Education and Research, Chandigarh, India	2002
All India Rank 2nd National Gold Medal Exam, Indian Association of Physiotherapists, India	2001
All India Rank 1st National Entrance Physical Therapy Program, Post Graduate Institute of Medical Education and Research, Chandigarh, India	1997

MANUSCRIPT REVIEW FOR SCIENTIFIC JOURNALS

Nature Scientific Reports
Annals of Neurology
Neurology
Journal of Neurophysiology
Cerebral Cortex
Human Brain Mapping
Neuroimage

Neuro-rehabilitation and Neural Repair
 Brain Stimulation
 European Journal of Neurology
 Journal of Gerontology: Medical Sciences
 Clinical Neurophysiology
 Journal of Neuroscience Methods
 Physical Therapy
 PLoS One
 Restorative Neurology and Neuroscience
 Clinical Neurology and Neurosurgery
 Frontiers in Human Neuroscience
 Neuromodulation
 Age
 Experimental Brain Research
 Neuroscience Letters
 Archives of Physical Medicine and Rehabilitation
 Experimental Brain Research
 Brain Research
 Neuroscience Letters
 Topics in Stroke Rehabilitation
 Journal of Motor Behavior
 Journal of Neurological Sciences
 Muscle & Nerve
 Neural Plasticity

EDITORIAL AND GRANT REVIEW ACTIVITIES

NIH <i>Special Emphasis Panel</i> for NINDS' CREATE Device U44 Applications	2016- Oct
American Heart Association's BRAIN CL 1 Peer Review	2016- Fall
NIH <i>Special Emphasis Panel</i> for NINDS' CREATE Device U44 Applications	2016- Jun
NIH study section, Motor Function and Speech Rehabilitation (MFSR)	2016
American Heart Association's BRAIN CL 1 Peer Review	2016- Spr.
NIH Special Emphasis Panel for Motor Function and Speech Rehabilitation (MFSR) study section	2015
NIH study section, Motor Function and Speech Rehabilitation (MFSR)	2015
Peer reviewer, Clinical Outcomes Study Section, American Heart Association	2014-
Invited co-editor, <i>Neural Plasticity</i>	2015
Invited associate editor, <i>Frontiers in Human Neuroscience's</i> special issue "Rehabilitation Neuroscience: Advancing translational recovery"	2014
Guest co-editor, Supplement to <i>Archives of Physical Medicine & Rehabilitation</i>	2014
Peer reviewer, Clinical Outcomes Study Section, American Heart Association	2014
National Institute of Disability & Rehabilitation Research (NIDRR), Washington DC	2013
Abstract issue of Neural Repair/Neurorehabilitation (Abstracts for Annual Meeting of American Academy of Neurology)	2013
ZonMw, The Netherlands Organisation for Health Research and Development, The Hague, The Netherlands	2012
DoD: Dept. of Defense, U.S. Army Medical Research and Materiel Command (USAMRMC), Fort Detrick, MD	2012
National Institute of Disability & Rehabilitation Research (NIDRR), Washington DC	2012
Abstract issue of Neural Repair/Neurorehabilitation (Abstracts for Annual Meeting of American Academy of Neurology)	2012
National Institute of Disability & Rehabilitation Research (NIDRR), Washington DC	2011
Graduate Women in Science Fellowships, Sigma Delta Epsilon, St. Paul, MN	2010

PUBLICATIONS (IN PEER-REVIEWED JOURNALS)

- Interventions to Enhance Adaptive Plasticity after Stroke: From Mechanisms to Therapeutic Perspectives
 Conforto AB, Cohen LG, Sterr A, **Plow EB**. *Neural Plasticity*. 2016. *In Press*

2. Post-exercise depression following submaximal and maximal isometric voluntary contraction. Cunningham DA, Janini D, Wyant A, Bonnett C, Varnerin N, Sankarasubramanian V, Potter-Baker KA, Roelle S, Wang X, Siemionow V, Yue GH, **Plow EB**. *Neuroscience*. 2016 Jun 21; 326:95-104.
3. Potter-Baker K, Janini D, Frost F, Chabra P, Cunningham DA, Varnerin N, Sankarasubramanian V, **Plow EB**. Reliability of TMS metrics in patients with chronic incomplete spinal cord injury. *Spinal Cord*. 2016. Apr 5
4. Potter-Baker KA, Varnerin N, Cunningham DA, Roelle SM, Sankarasubramanian V, Bonnett C, Machado AG, Conforto A, Sakaie K, **Plow EB**. Influence of Corticospinal Tracts from Higher Order Motor Cortices on Recruitment Curve Properties in Stroke. *Frontiers in Human Neuroscience*. 2016 Mar 8; 10:79.
5. **Plow EB**, Sankarasubramanian V, Cunningham DA, Potter-Baker KA, Varnerin N, Cohen LG, Sterr A, Conforto AB, Machado AG. Models to Tailor Brain Stimulation Therapies in Stroke. *Neural Plasticity*. 2016; 2016:4071620.
6. Potter-Baker KA, Bonnett C, Chabra P, Roelle S, Varnerin N, Cunningham DA, Sankarasubramanian V, Pundik S, Conforto A, Machado AG, **Plow EB**. Challenges in Recruitment for the Study of Noninvasive Brain Stimulation in Stroke: Lessons from Deep Brain Stimulation. *Journal of Stroke and Cerebrovascular Diseases*. 2016 Apr; 25(4): 927-37.
7. Gopalakrishnan R, Burgess RC, **Plow EB**, Floden DP, Machado AG (2015). Early Event Related Fields during Visually Evoked Pain Anticipation. *Clinical Neurophysiology*. 2016 Mar.127(3): 1855-63.
8. Cunningham DA, Varnerin N, Machado A, Bonnett C, Janini D, Roelle S, Potter-Baker P, Sankarasubramanian V, Wang X, Yue G, **Plow EB**. Stimulation targeting higher motor areas in stroke rehabilitation: A proof-of-concept, randomized, double-blinded placebo-controlled study of effectiveness and underlying mechanisms. *Restorative Neurology and Neuroscience*. 2015. Oct 20; 33(6): 911-26
9. Potter-Baker KA, Bonnett C, Chabra P, Roelle S, Varnerin N, Cunningham DA, Sankarasubramanian V, Pundik S, Conforto AB, Machado A, **Plow EB** A Game of Hide and Seek: Is it possible to recruit more patients for NIBS studies in stroke? *Journal of Neurological Sciences*. 2015. Nov 15; 358(1-2): 472-4.
10. Gopalakrishnan R, Burgess RC, **Plow EB**, Floden D, Machado AG. A Magnetoencephalography study of multi-modal processing of pain anticipation in primary sensory cortices. *Neuroscience*. 2015. Sep 24; 304:176-89.
11. Cunningham DA, Potter-Baker K, Knutson JS, Sankarasubramanian V, Machado AG, **Plow EB**. Tailoring brain stimulation to the nature of rehabilitative therapies in stroke- a conceptual framework based on their unique mechanisms of recovery. *Physical Medicine & Rehabilitation Clinics of North America*. 2015. Nov; 26(4): 759-74
12. Sankarasubramanian V, Roelle SM, Bonnett CE, Janini D, Varnerin NM, Cunningham DA, Sharma JS, Potter-Baker KA, Wang X, Yue GH, **Plow EB**. Reproducibility of transcranial magnetic stimulation metrics in the study of proximal upper limb muscles. *J Electromyography and Kinesiology*. 2015. Oct; 25(5):754-64.
13. Page S, Cunningham DA, **Plow EB**, Blazak, B. It Takes Two: Non-Invasive Brain Stimulation Combined with Neurorehabilitation. *Archives of Physical Medicine and Rehabilitation*. 2015. Apr; 96(4 Suppl): S89-93.
14. Cunningham DA, Machado A, Janini D, Varnerin N, Bonnett C, Yue GH, Jones SE, Lowe MJ, Beall E, Sakaie K, **Plow EB**. Assessment of inter-hemispheric imbalance using imaging and noninvasive brain stimulation in patients with chronic stroke. *Archives of Physical Medicine and Rehabilitation*. 2015. Apr; 96(4 Suppl): S94-103.
15. Cooperrider J, Furmaga H, **Plow EB**, Park H-J, Chen Z, Kidd G, Baker K, Gale J, Machado A. Chronic deep cerebellar stimulation promotes long-term potentiation, microstructural plasticity and reorganization of perilesional cortical representation in a rodent model. *Journal of Neuroscience*. 2014. Jul 2; 34(27): 9040-50.
16. **Plow EB**, Cunningham DA, Varnerin N, Machado A. Rethinking stimulation of brain in stroke rehabilitation: Why higher-motor areas might be better alternatives for patients with greater impairments. *Neuroscientist*. 2015. Jun; 21(3): 225-40
17. Machado AG, Gopalakrishnan R, **Plow EB**, Burgess RC, Mosher JC. A Magnetoencephalography Study of Visual Processing of Pain Anticipation. *Journal of Neurophysiology*. 2014. Jul 15; 112(2): 276-86
18. **Plow EB**, Cattaneo Z, Carlson TA, Alvarez GA, Pascual-Leone A, Battelli LB. The compensatory dynamic of inter-hemispheric interactions in visuospatial attention revealed using rTMS and fMRI. *Frontiers in Human Neuroscience*. 2014. Apr 17; 8:226.

19. **Plow EB**, Varnerin N, Cunningham DA, Janini D, Bonnett C, Wyant A, Hou J, Siemionow V, Wang X, Machado AG, Yue GH. Age-related Weakness of Proximal Muscle studied with Motor Cortical Mapping: A TMS Study. *PlosOne*. 2014. Feb 21; 9(2): e89371.
20. **Plow EB** and Fehlings MG. [invited] Hypoxic locomotor rehabilitation for incomplete spinal cord injury: Not an oxymoron. *Neurology*. 2014. Jan 14; 82(2): 98-9
21. **Plow EB** and Machado A. Invasive Neuro-stimulation in Stroke Rehabilitation. *Neurotherapeutics*. 2014 Jul; 11(3): 572-82.
22. **Plow EB**, Cunningham DA, Beall E, Jones S, Wyant A, Bonnett C, Yue GH, Lowe M, Wang, X, Sakaie K, Machado, A. Effectiveness and neural mechanisms associated with tDCS delivered to premotor cortex in stroke rehabilitation: study protocol for a randomized controlled trial. *Trials*. 2013. Oct 12; 14:331.
23. **Plow EB**, Cunningham DA, Bonnett C, Gohar D, Bayram M, Wyant A, Varnerin N, Mamone B, Siemionow V, Hou J, Machado A, Yue GH. Neurophysiologic Correlates of Aging-Related Muscle Weakness. *Journal of Neurophysiology*. 2013. Dec; 110(11): 2563-73.
24. **Plow EB**, Malone D, Machado A. Deep brain stimulation of the ventral striatum/anterior limb of the internal capsule in thalamic pain syndrome: study protocol for a pilot randomized controlled trial. *Trials*. 2013. Jul 31; 14:241.
25. Cunningham DA, Machado A, Yue GH, Carey JR, **Plow EB**. Functional somatotopy revealed across multiple cortical regions using a model of complex motor task. *Brain Research*. 2013. 1531:25-36
26. **Plow EB** and Carey JR. Pilot fMRI Investigation of Representational Plasticity associated with Motor Skill Learning and its Functional Consequences. *Brain Imaging and Behavior*. 2012. Sep; 6(3): 437-53.
27. Machado A, Baker K, **Plow EB**, Malone D. Cerebral stimulation for the affective component of neuropathic pain. *Neuromodulation*. 2012. Nov-Dec; 16(6): 514-8.
28. **Plow EB**, Obretenova SN, Merabet LB. Temporal Profile of Functional Visual Rehabilitative Outcomes Modulated by Transcranial Direct Current Stimulation (tDCS). *Neuromodulation: Technology at Neural Interface*. 2012. Jul; 15(4):367-73.
29. **Plow EB**, Pascual-Leone A, Machado A. Brain Stimulation in the Treatment of Chronic Neuropathic and Non-Cancerous Pain. *Journal of Pain*. 2012. 13 (5): 411-424
30. **Plow EB**, Obretenova SN, Fregni F, Pascual-Leone A, Merabet LB. Comparison of visual field training for hemianopia with active versus sham transcranial direct cortical stimulation. *Neurorehabilitation and Neural Repair*. 2012. 26 (6): 616-626.
31. **Plow EB**, Obretenova SN, Halko MA, Kenkel S, Jackson ML, Pascual-Leone A, Merabet LB. Combining Visual Rehabilitative Training and Noninvasive Brain Stimulation to Enhance Visual Function in Patients with Hemianopia: A Comparative Case Study. 2011. *Physical Medicine and Rehabilitation* 3(9): 825-835.
32. Halko MA, Datta A, **Plow EB**, Scaturro J, Bikson M, Merabet LB. Neuroplastic changes following rehabilitative training correlate with regional electrical field induced with tDCS. *Neuroimage*. 2011. 57(3): 885-91.
33. **Plow EB**, Arora P, Pline MA, Binstock MT, Carey JR. Within-limb Somatotopy in Primary Motor Cortex-revealed using fMRI. *Cortex*. 2010. 46(3): 310-321.
34. Obretenova SN, Halko MA, **Plow EB**, Pascual-Leone A, Merabet LB. Neuroplasticity Associated with Tactile Language Communication in a Deaf-Blind Subject. *Frontiers in Human Neuroscience*. 2010. 3 (ID 20130756). 60
35. **Plow EB**, Maguire SB, Obretenova SN, Pascual-Leone A, Merabet LB. Approaches to Rehabilitation for Visual Field Defects following Brain Lesions. *Expert Review of Medical Devices*. 2009. 6(3): 291-305.
36. LaPointe, Kyle E; Klein, Jacob A; Konkol, Meagan L; Kveno, Sara M; **Bhatt (Plow) E**, DiFabio, Richard P; Carey, James R. Cortical activation during finger tracking vs. ankle tracking in healthy subjects. *Restorative Neurology and Neuroscience*. 2009. 27(4): 253-264.
37. **Plow EB**, Carey JR, Nudo RN, Pascual-Leone A. Invasive Cortical Stimulation to Promote Recovery of Function After Stroke: A Critical Appraisal. *Stroke*. 2009. 40(5); 1926-1931.
38. Carey JR, Evans CD, Anderson DC, **Bhatt (Plow) E**, Nagpal A, Kimberley TJ, Pascual-Leone A. Safety of 6-Hz Primed Low-Frequency rTMS in Stroke. *Neurorehabilitation and Neural Repair*. 2008. 22 (2) 185-192.

39. Durfee WK, Weinstein SA, **Bhatt (Plow) E**, Nagpal A, Carey JR. Design and Usability of a Home Telerehabilitation System to Train Hand Recovery Following Stroke. *Journal of Medical Devices*. 2009. 041003-1-8.
40. Carey JR, Durfee WK, **Bhatt (Plow) E**, Nagpal A, Weinstein SA, Anderson KM, Lewis SM. Comparison of finger tracking versus simple movement training via telerehabilitation to alter hand function and cortical reorganization after stroke. *Neurorehabilitation and Neural Repair*. 2007. 21 (3) 216-232.
41. **Bhatt (Plow) E**, Nagpal A, Greer KH, Grunewald T, Steele JL, Wiemiller JW, Lewis SM, Carey JR. Effect of Finger Tracking Combined with Electrical Stimulation on Brain Reorganization and Hand Function in Subjects with Stroke. *Experimental Brain Research*. 2007. 182(4) 435-447.
42. Carey JR, Greer KR, Grunewald TK, Steele JL, Wiemiller JW, **Bhatt (Plow) E**, Nagpal A, Lungu O, Auerbach EJ. Primary Motor area Activation during Precision-Demanding versus Simple Finger Movement. *Neurorehabilitation and Neural Repair*. 2006. 20 (3) 361-37
43. Cattaneo Z, Merabet LB, **Bhatt (Plow) E**, Vecchi T. Effects of complete monocular deprivation in visuo-spatial memory. *Brain Research Bulletin*. 2008. 30: 77(2-3): 112-116.
44. Cattaneo Z, **Bhatt (Plow) E**, Merabet LB, Pece A, Vecchi T. The influence of reduced visual acuity on age-related decline in spatial working memory: an investigation. *Neuropsychology, Development and Cognition Section B, Aging, Neuropsychology and Cognition*. 2008. 15(6): 687-702.
45. Carey JR, **Bhatt (Plow) E**, Nagpal A. Neuroplasticity promoted by task complexity. *Exercise & Sport Sciences Reviews*. 2005. 33:24-31

COMMITTEE SERVICES

Section Head: BME: Clinical & Translational Sci Collaborative Res. Programs Committee (RPC)	2016-
Curricular Review Committee: Musculoskeletal Sciences (MS) at Lerner College of Medicine:	2016-
Cleveland Clinic - Lerner Research Institute: (Dept. of Biomedical Engineering, Lerner Research Institute) Committee Name/Role: Graduate Student and Fellow Travel Award Reviewer	2011 – 2014
Cleveland State University's College of Sciences & Health Professions and Cleveland Clinic's Department of Physical Medicine and Rehabilitation Ph.D. in Rehabilitation Science Joint Committee: Committee member	2010 - 2011
Harvard Medical School, Boston, MA Educational Committee: Transcranial Magnetic Stimulation; Faculty	2008- 2013
University of Minnesota, Minneapolis, MN Educational Committee: Medical Neuroscience; instructor	2007

INVITED TALKS AND PODIUM PRESENTATIONS

Invited Symposium Talk at World Confederation for Physical Therapy, Cape Town S. Africa	2017
Invited talk at Cleveland's Physical Medicine and Rehabilitation Academic Faculty Meeting	2016
Invited guest lecture Neurosciences- Advanced Research in Medicine talk for 1 st year medical students	2016
Selected talk Academy of Spinal Cord Injury Professionals, Nashville, TN: Reliability of TMS in Spinal cord Injury (by fellow: Potter-Baker, K)	2016
Selected talk Academy of Spinal Cord Injury Professionals, Nashville, TN: Clinical Trial using Transcranial Direct Current Stimulation in Spinal cord Injury (by fellow: Potter-Baker, K)	2016

Selected Talk Academy of Spinal Cord Injury Professionals, Nashville, TN: Diffusion Tensor Imaging in Spinal cord Injury (by fellow: Potter-Baker, K)	2016
Invited talk at Cleveland's Functional Electrical Stimulation Center	2015
Invited talk at University of Iowa for Neuroscience and Rehabilitation Seminar Series	2015
Selected Talk (student) for NanoSymposium: Society for Neuroscience (Topic: Stroke recovery)	2015
Selected Talk for NanoSymposium: Society for Neuroscience (Topic: Stroke recovery)	2015
Selected Talk (fellow) for NanoSymposium: Society for Neuroscience (Topic: Spinal Cord)	2015
Invited Talk (fellow) at American Society for Neuro-rehabilitation meeting, Chicago	2015
Invited Talk at American Society for Spinal Cord Injury Professionals, New Orleans, LA	2015
Invited Talks at "Frontiers in aging: challenges for science and healthcare professionals" symposium At Albert Einstein hospital, Sao Paulo, Brazil	2015
* (<i>chair</i>) "Nursing and Rehabilitation scientific paper presentations" 10 th Annual Conference of the Indian Stroke Association (INSC 2015). Chandigarh, India	2015
Selected Talk (fellow) for NanoSymposium: Society for Neuroscience	2014
Functional Electrical Stimulation Center's invited seminar series, MetroHealth Rehabilitation Instt.	2015
Friends of the Lerner Research Institute "Changing the brain for advancing Neurologic Recovery"	2014
Lerner Research Institute's Research Retreat "Using the Brain as a guide to personalize Neuro-rehabilitation", Geneva-on-the-Lake, Ohio	2014
* (<i>chair</i>) Building evidence-based practice in neuro-rehabilitation: using neuroplasticity as a guide At the Ohio Physical Therapy Association's Annual Meeting, Columbus, Ohio	2014
Neuromodulation and Imaging: Opportunities for Neuro-rehabilitation Grand Rounds at VA's Center of Excellence, Advanced Platform Technology Center, Cleveland, OH	2014
* (<i>chair</i>) Advances in Neuromodulation and Functional Restoration in Stroke Rehabilitation: American Heart and American Stroke Association's International Stroke Conference, San Diego, CA	2014
Brain Stimulation in Upper Limb Rehabilitation in incomplete SCI, Spinal Cord Injury Service Louis Stokes VA, Cleveland, OH	2013
Non-invasive Brain Stimulation, Center for Neurological Restoration, Cleveland Clinic, Cleveland, OH	2011 - 2013
Neuromodulation: Novel Applications for Assessment and Treatment in Neuro-Rehabilitation. CME course offered by Harvard Medical School, Berenson-Allen Center for Noninvasive Brain Stimulation, Neurology, Beth Israel Deaconess Medical Center, Boston, MA.	2012- 2013
Evidence-based Motor Rehabilitation in Stroke. Training Course for Multi-site NIH grant Between Cleveland Clinic and University of Sao Paulo, Brazil	2012- 2013
* (<i>chair</i>) Neuromodulatory Rehabilitation: Stroke Motor Recovery and Beyond. American Society of Neuro-rehabilitation-American Council of Rehabilitation Medicine At Vancouver, British Columbia, Canada	2012
NeuroStimulation and NeuroModulation Taussig Cancer Center for Research, Cleveland Clinic, Cleveland, OH	2012

Advances in Stroke Rehabilitation. University of Miami, Medical School, Miami, FL	2012
#Merabet LB. Vision Rehabilitation. European Federation of Neurological Societies. Stockholm, Sweden.	2012
Effect of rTMS on Inter-hemispheric Interactions Between Parietal Lobes During Sustained Bilateral Attention: Evidence of a Network Effect Revealed Using fMRI Nanosymposium at the Society for Neuroscience at Washington D.C.	2011
#Yue GH, Plow EB, Davis M. Excessive Central Fatigue Limits Motor Function of Cancer Survivors with Fatigue Symptoms. American College of Rehabilitation Medicine- American Society of NeuroRehabilitation, Atlanta, GA	2011
Therapeutic Applications of Repetitive Transcranial Magnetic Stimulation in Epilepsy. Grand Rounds, Department of Epilepsy, Cleveland Clinic, Cleveland, OH.	2010
Combining Visual Rehabilitation and Noninvasive Brain Stimulation to Enhance Function in Patients with Hemianopia. Scientific Plenary Session: S57 Neural Repair/Neurorehabilitation. American Academy of Neurology, Toronto, ON	2010
Cortical Neuromodulation in Stroke. University of Milano-Bicocca, Milano, Italy	2010
#Machado A. Brain Stimulation in Neurologic Disease and Recovery, Center for Neurological Restoration Retreat, Cleveland Clinic	2012
Evidence-based Stroke Rehabilitation. Physical Medicine and Rehabilitation, Cleveland Clinic, OH	2010 - 2013
#Merabet LB. Neuro-Rehabilitation Combined with Noninvasive Brain Stimulation to Enhance Visual Function in Patients with Hemianopia. Massachusetts Eye and Ear Infirmary, Boston, MA	2009
Hemianopia Rehab, Spaulding Rehabilitation Hospital, Boston, MA.	2009
Stroke Rehabilitation: Options, Feasibility and Outcomes, Physical Med and Rehabilitation, Cleveland Clinic, Cleveland, Ohio	2009
Stroke Rehabilitation: Options, Feasibility and Outcomes, Physical Med and Rehabilitation, Rehabilitation Institute of Chicago, Northwestern University, Chicago, IL	2009
Directing Recovery in Stroke: Potential Options, Feasibility and Comparative Outcomes, University of Vermont, Burlington, VT	2009
Directing Recovery in Stroke: Potential Options, Feasibility and Comparative Outcomes, University of Florida, Gainesville, FL	2009
Vision Rehabilitation with Cortical Stimulation, Novavision, Boca Raton, FL	2009
Hemianopia Rehab, Boston University Med. Ctr., Neurology, Boston, MA	2008

CURRENT TRAINEES/MENTEES

Yin-Liang Lin Post-doctoral Fellow	2016- Present
Kyle O' Laughlin (Research Technologist)	2016- Present
Nishant Uppal (Undergraduate, Case Western Reserve University)	2016- Present
Jacqueline Cavendish (Undergraduate, Case Western Reserve University)	2015- Present

PAST TRAINEES/MENTEES AND THEIR CURRENT PLACEMENTS

Members transferred to my lab from a former lab are marked with *

Staff/Faculty

Beth Lewandowski PhD visiting faculty (*NASA Glenn Research Center, Cleveland, OH*) 2014- 2014
 *Wlodzimierz (Vlodek) Siemionow PhD: Consultant Emeritus, Contract Staff (*retired*) 2011-2012

Fellows

Vishwanath Sankarasubramanian PhD (*Post-doctoral researcher, Case Western Reserve Univ.*) 2014-2016
 *Venkateswaran Rajagopalan PhD (*Research Associate, Kessler Foundation, NJ*) 2012-2012
 *Didier Allexandre PhD (*Research Scientist, Kessler Foundation, West Orange, NJ*) 2012-2012
 Dina Gohar, MD (*Resident, Psychiatry, MetroHealth Medical Center, Cleveland, OH*) 2010-2011

Students

David Cunningham, PhD (*Post-doctoral researcher at Kessler Rehab Institute, NJ*) 2011-2016
 Emily Serfling, BS (*Consultant at Phillips*) 2015-2016
 Natasha Mohanty (*Student at Case Western Reserve University*) 2015-2016
 Daniel Janini (*Currently Researcher at NIH Laboratory*) 2011-2015
 Nicole Varnerin BS (*Research Technologist*) 2010- 2015
 Shounak Basu (*Student at Case Western Reserve University*) 2015-2015
 David Mirando (*Biomedical Engineering Student at Case Western Reserve University*) 2014-2014
 Tamires Rocha Figueredo (*Medical Student in University of Sao Paulo, Brazil*) 2014-2014
 Jesus Cardenas NSF (*Rensselaer Polytechnic Institute NY*) 2014-2014
 Sarah Roelle BS (*Case Western Reserve University*) 2013- 2014
 *Mehmed Bayram, PhD (*Faculty, Acibadem University, Turkey*) 2012-2013
 *Bernadett Mamone, PhD (*Research coordinator, Mellen Center, Cleveland Clinic, OH*) 2012-2013
 Jennifer Sharma BS (*Medical Student, Case Western School of Medicine, Cleveland, OH*) 2012-2013
 Ardyn Olszko (*M.S. at Carnegie Mellon University*) 2011

Clinical Coordinators

Thelma Asare, MPH (*Clinical Coordinator at Ohio State University*) 2015-16
 Corin Bonnett MPH (*Ohio EPA*) 2011- 2014
 Anthony Necastro Intern (*MA at Cleveland State University*) 2014- 2014
 Myranda Long BS (*Kent State University, Nursing*) 2013- 2014
 Patrick Chabra BS (*Medical School, FL*) 2013- 2014
 Sherry Cucci, BS (*Anesthesia technology, Case Western Reserve, Cleveland, OH*) 2013-2013
 Jonathan Holmes BS (*MS at Cleveland State University*) 2013- 2013
 *Alexandria Wyant, BA (*Research Coordinator, Neurological Restoration, Cleveland Clinic*) 2011-2013
 Emily Grandy MS (*Researcher, Li Lab, Lerner Research Institute*) 2011

RECOGNITION OF STUDENTS

Kelsey Potter-Baker selected for Outstanding Trainee Researcher Award at Academy of Spinal Cord Injury Professionals, Nashville, TN. 2016

Kelsey Potter-Baker selected for talk at Academy of Spinal Cord Injury Professionals, Nashville, TN. 2016

Kelsey Potter-Baker selected for talk at Academy of Spinal Cord Injury Professionals, Nashville, TN. 2016

Kelsey Potter-Baker selected for talk at Academy of Spinal Cord Injury Professionals, Nashville, TN.	2016
Kelsey Potter-Baker awarded the NIH's Clinical and Translational Science Collaborative Research programs Committee grant for \$20,000 to complete a project in SCI	2016
Kelsey Potter-Baker awarded Lerner Research Instt.'s Post-doc Alumni award	2015
Vishwanath Sankarasubramanian PhD awarded the post-doctoral Travel Award, Cleveland Clinic	2015
David Cunningham MS awarded the graduate student Travel Award, Cleveland Clinic	2015
David Cunningham MA awarded the Kent State University Travel Award	2015
Kelsey Potter-Baker PhD selected for Best 5 Oral Presentations in Neurorehabilitation in USA	2015
Daniel Janini appointed for Post-Baccalaureate training at the NIH starting Jun 2015	2015
David Cunningham selected for Talk at the Society for Neuroscience (Topic: Stroke recovery)	2015
Kelsey Potter-Baker selected for Talk at Society for Neuroscience (Topic: Spinal Cord)	2015
Kelsey Potter-Baker selected for Talk at American Society for Neuro-rehabilitation, Chicago	2015
Invited Talk at American Society for Spinal Cord Injury Professionals, New Orleans, LA	2015
Vishwanath Sankarasubramanian selected for talk at Society for Neuroscience	2014
David Cunningham awarded the NIH's Clinical and Translational Science Collaborative Research programs Committee grant for \$20,000 to complete his PhD dissertation project	2014
Kelsey Potter-Baker awarded travel grant by the Dept. of Biomedical Engineering, Cleveland Clinic Foundation	2014
Jesus Cardenas selected for his work in Plow lab to present at Council on Undergraduate Research's Research Experiences for Undergraduates Symposium organized by the NSF	2014
Corin Bonnett: Awarded Best graduate Student of the Year award, Kent State, NEOMED	2014
Nicole Varnerin, Corin Bonnett: Chosen for Study Team Communication in the 21 st Century- story on Front page of Clinical Research Newsletter, Cleveland Clinic	2013
Daniel Janini. 2 nd place Capstone Research Project, Case Western Reserve University	2012
Daniel Janini. 2 nd place Poster Award Cleveland Clinic Research Day	2013

PHD AND THESIS COMMITTEES

Rebecca Achey, M. D. Cleveland Clinic Lerner College of Medicin. Cleveland, OH	2016 –
Hala Osman, Ph.D. Cleveland State, Fenn College of Engineering, Cleveland, OH	2015 –
David Cunningham, PhD student, Kent State University, Program in Neuroscience, Kent, OH	2013 – 2016
Mehmed Bayram, Ph.D., Cleveland State, Fenn College of Engineering, Cleveland, OH	2010 – 2013

TEACHING ACTIVITIES

Instructor, Transcranial Magnetic Stimulation, Harvard Medical School, Berenson-Allen Center
For Non-invasive Brain Stimulation, Beth Israel Deaconess Medical Center, Boston, MA 2008- 2010

Teaching Assistant: Medical Neuroscience (Laboratory) in Dept. of Neuroscience,
at University of Minnesota 2007

Teaching Assistant: Neuro-rehabilitation, Clinical Assessment, Motor Control, Integument,
Clinical research methodology, Neuroscience, Neurological rehabilitation Practicum and Lab in
Program in Physical Therapy at University of Minnesota 2004-06

POSTER PRESENTATIONS: SELF

Plow EB, Bonnett C, Cunningham DA, Wyant A, Janini D, Bayram MB, Hou J, Mamone B, Siemionow V, Machado A, Yue GH. Motor cortical map plasticity underlying strengthening counteracts aging-related degeneration: A transcranial magnetic stimulation study. Society for Neuroscience. 184.19/MM8. New Orleans, LA. 2012

Plow EB, Gohar D, Wyant A, Mehmed B, Varnerin N, Hou J, Mamone B, Fang Y, Siemionow V, Yue GH. Neurophysiologic markers of aging-related muscle weakness. American Neurological Association. Published as Conference proceedings abstract in Annals of Neurology. 77. San Diego, CA. 2011

Plow EB, Gohar D, Wyant A, Varnerin N, Hou J, Bayram M, Siemionow V, Yue GH. Mental imagery training facilitates neural adaptations associated with muscle strengthening. Society for Neuroscience. 2010

Plow EB. Pilot study combining Visual Rehabilitation and Noninvasive Brain Stimulation to enhance function in patients with post-stroke visual field loss, Cleveland Clinic Research Day 2010

Plow EB. Noninvasive Brain Stimulation: Applications for Rehabilitation, VA Research Day, Cleveland, OH 2010

Plow EB, Obretenova SN, Maguire SB, Torun N, Jackson ML, Halko MA, Pascual-Leone A, Merabet LB. Noninvasive Brain Stimulation combined with Visual Rehabilitation to enhance function in patients with Visual Field Defects. American Physical Therapy Association meeting. Las Vegas, NV. 2009

Plow EB, Obretenova SN, Halko M, Poggel DA, Kenkel S, Torun N, Jackson ML, Pascual-Leone A, Merabet LB. Neuro-visual rehabilitation combined with Noninvasive Brain Stimulation to enhance function in patients with visual field loss. American Neurological Association. Published as Conference proceedings abstract in Annals of Neurology, Baltimore, MD. 2009

Plow [nee (Bhatt)] E, Arora P, Nagpal A, Carey JR. Neural Substrates of Motor Skill Learning- Revealed using FMRI. Society for Neuroscience. 2007

Plow [nee (Bhatt)] E, Carey JR. Effects of Electrical Stimulation and Tracking Training on cortical reorganization and hand function of chronic stroke patients. III Step American Physical Therapy Association meeting. Salt Lake City, UT 2005

POSTER PRESENTATIONS: STUDENTS AND COLLEAGUES

Student presenters in bold. Colleague presenters underlined.

Sankarasubramanian V, Cunningham DA, Roelle S, Potter-Baker K, Beall E, Machado AG, Plow EB. Employing patient's individual characteristics to derive personalized brain stimulation therapies. Society for Neuroscience and American Society for Neuro-rehabilitation, Chicago` 2015

Sankarasubramanian V, Cunningham DA, Roelle S, Potter-Baker K, Beall E, Machado AG, Plow EB. Transcranial direct current stimulation: Modulating functional connectivity across pain networks.

- Society for Neuroscience and American Society for Neuro-rehabilitation, Washington D. C. 2014
- Varnerin N**, Cunningham DA, Roelle S, Potter-Baker K, Sankarasubramanian V, Sakaie K, Beall E, Machado A, Plow EB. Multimodal predictors of rehabilitation related recovery in stroke. Society for Neuroscience and American Society for Neuro-rehabilitation, Washington D. C. 2014
- Cunningham DA**, Machado A, Janini D, Varnerin N, Bonnett C, Roelle S, Yue GH, Jones S, Lowe M, Beall E, Sakaie K, Plow EB. Putting transcranial magnetic stimulation, diffusion tensor imaging and functional MRI to the test: A study of interhemispheric imbalance in chronic stroke. Society for Neuroscience and American Society for Neuro-rehabilitation, Washington D. C. 2014
- Potter-Baker K**, Varnerin N, Cunningham DA, Roelle S, Sankarasubramanian V, Machado A, Conforto AB, Sakaie K, Plow EB. Predicting variability of distal muscle recruitment curves in stroke using diffusion tensor imaging (DTI). Society for Neuroscience and American Society for Neuro-rehabilitation, Washington D. C. 2014
- Varnerin N**, Cunningham DA, Sakaie K, Beall E, Machado A, Plow EB. Premotor cortical stimulation in stroke rehabilitation: Neural mechanisms of recovery. International Congress of Clinical Neurophysiology (ICCN) of the IFCN, Berlin, Germany 2014
- Janini D**, Cunningham DA, Rini B, Davis M, Plow EB. Cortical correlates of sunitinib-induced fatigue in metastatic renal cell carcinoma. Lerner Research Institute Research Day. 2013
- Machado AG, Cooperrider J, Furmaga H, Plow EB, Park H, Gale JT. Bursting and regular chronic cerebellar stimulation modulate perilesional cortical reorganization as well as expression of synaptophysin and markers of long-term potentiation. Society for Neuroscience. San Diego, CA. 2013
- Cunningham DA**, Machado A, Rajagopalan V, Lowe M, Jones S, Beall E, Sakaie K, Plow EB. Diffusion Tensor Imaging exhibits more proximate and reliable Transcranial Magnetic Stimulation measures compared to fMRI in stroke. Society for Neuroscience. 249.14/Z9-DP6. San Diego, CA. 2013
- Varnerin N**, Cunningham DA, Janini D, Beall E, Jones S, Wyant A, Bonnett C, Yue GH, Lowe M, Sakaie K, Machado A, Plow EB. Premotor cortical stimulation in stroke rehabilitation: Neural mechanisms of recovery. Society for Neuroscience. 338.05/U15. San Diego, CA. 2013
- Cunningham DA**, Machado A, Rajagopalan V, Lowe M, Jones S, Beall E, Sakaie K, Plow EB. Diffusion Tensor Imaging exhibits more proximate and reliable Transcranial Magnetic Stimulation measures compared to fMRI in stroke. American Society of Neurorehabilitation. San Diego, CA. 2013
- Varnerin N**, Cunningham DA, Janini D, Beall E, Jones S, Wyant A, Bonnett C, Yue GH, Lowe M, Sakaie K, Machado A, Plow EB. Premotor cortical stimulation in stroke rehabilitation: Neural mechanisms of recovery. American Society of Neurorehabilitation. San Diego, CA. 2013
- Sharma J**, Cunningham DA, Bonnett C, Varnerin N, Cucci S, Allexandre D, Machado A, Plow EB. Intra-cortical and interhemispheric inhibition during a bimanual force task with asymmetric levels of force magnitude. Society for Neuroscience. 651.09/UU16. San Diego, CA. 2013
- Cunningham DA**, Machado A, Rajagopalan V, Lowe MJ, Jones S, Beall E, Sakaie K, Plow EB. DTI versus fMRI: accuracy and reliability in predicting response to TMS in Stroke. American Neurological Association. S101. Published as proceedings in Annals of Neurology. New Orleans, LA 2013
- Janini D**. Plow EB. Capstone Undergraduate Research poster at Case Western Reserve 2012
- Wyant A**, Bonnett C, Cunningham DA, Plow EB, Siemionow V, Yue GH. Voluntary muscle fatigue alters motor cortical maps - a transcranial magnetic stimulation study. Organization of Human Brain Mapping. 6217. New Orleans, LA. 2012

- Siemionow V, Yue GH, Plow EB, Kisiel-Sajewicz K, Wyant A, Siemionow M. Cortical reorganization assessment in face transplanted patients: EEG study. Society for Neuroscience. 680.19/OO6. New Orleans, LA. 2012
- Bonnett C**, Cunningham D, Wyant A, Bayram MB, Janini D, Rajagopalan V, Mamone B, Hou J, Siemionow V, Plow EB, Yue GH. Central neural adaptations underlying voluntary muscle strengthening in healthy aged individuals. Society for Neuroscience. 582.22/QQ8. New Orleans, LA 2012
- Wyant A**, Cunningham DA, Bonnett C, Janini D, Hou J, Siemionow V, Plow EB, Yue GH. Motor map plasticity associated with voluntary muscle fatigue- a transcranial magnetic stimulation study. Society for Neuroscience. 582.02/PP8. New Orleans, LA. 2012
- Cunningham D**, Hou J, Carey JR, Yue GH, Machado A, Plow EB. Functional somatotopy across multiple cortical regions revealed using a model of complex visuomotor task. Society for Neuroscience. 381.11/WW17. New Orleans, LA. 2012
- Mamone B**, Zhang Y, Bayram MB, Wyant A, Cunningham D, Bonnett C, Plow EB, Hou J, Siemionow V, Yue GH. Strength training facilitates neural adaptations associated with muscle strengthening in aging. Society for Neuroscience. 582.29/QQ15. New Orleans, LA. 2012
- Bayram MB**, Cunningham D, Bonnett C, Mamone B, Plow EB, Hou J, Siemionow V, Yue GH. Effects of strength and motor imagery training on corticomuscular signal coupling in aging. Society for Neuroscience. 478.01/LL20. New Orleans, LA. 2012
- Sharma J**, Cunningham D, Bonnett C, Wyant A, Janini D, Yue GH, Plow EB. Measures of reliability of transcranial magnetic stimulation-based cortical measures in proximal musculature. Society for Neuroscience. 506.09/FFF22. New Orleans, LA. 2012
- Mehmed B**, Wyant A, Siemionow V, Plow EB, Yue GH. Weakening of corticomuscular and musculomuscular signal coupling during voluntary motor action in aging. Society for Neuroscience. 812.02/RR17. Washington, D. C. 2011
- Gohar D**, Plow EB, Hou J, Wyant A, Mamone B, Siemionow V, Yue GH. Central neural adaptations underlying motor imagery-based strengthening in the elderly: A transcranial magnetic stimulation study. Society for Neuroscience. 812.19/RR34. Washington, D. C. 2011
- Varnerin N**, Hou J, Mehmed B, Yue GH, Plow EB. Novel method of analysis of transcranial magnetic stimulation-based motor maps: Sensitivity to detect aging-related changes. Society for Neuroscience. 812.11/RR26. Washington, D. C. 2011
- Cunningham DA**, Hou J, Carey JR, Yue GH, Plow EB. Cortical topography of visuomotor skill studied with fmri. Society for Neuroscience 2011. 815.02/TT5. Washington, D. C. 2011
- Merabet LB, Poggel D, Stern W, Plow [nee (Bhatt)] E, Hemond C, Maguire S, Meijer P, Pascual-Leone A. Activation of visual cortex using crossmodal retinotopic mapping. Human Brain Mapping. Sydney, Australia. 2008