

## Yarossi Curriculum Vitae

**DATE:** August 31, 2022

**NAME:** Mathew Yarossi

**PRESENT TITLE:** Assistant Professor

**OFFICE ADDRESS:** 360 Huntington Ave, 404 RB  
Northeastern University, Bouvé College of Health Sciences  
Dept. of Physical Therapy, Movement, and Rehabilitation Science  
Boston, MA, 02115  
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**CITIZENSHIP:** USA

**LANGUAGE FLUENCY:** English

**EDUCATION:** B.S. in Biomedical Engineering, Northwestern University, 2004  
M.S. in Biomedical Engineering, New Jersey Institute of  
Technology, 2011  
Ph.D. in Biomedical Engineering, Rutgers Biomedical Health Sciences,  
Rutgers University 2017

### **WORK EXPERIENCE:**

Research Assistant, Sensory Motor Performance Laboratory, Northwestern University,  
Chicago, IL, 2004 – 2004

Biomedical Engineer, Human Performance Movement and Analysis Laboratory, Kessler  
Foundation and Research Center, West Orange, NJ, 2005 - 2013

Research Assistant, Laboratory for Movement Science, School of Health Related Professions,  
Rutgers Biomedical and Health Sciences, Rutgers University Newark, NJ, 2012 - 2017

Postdoctoral Fellow, Department of Physical Therapy, Rehabilitation and Movement Science /  
Department of Electrical and Computer Engineering, Northeastern University, Boston, MA,  
2017 - 2018

Associate Research Scientist, Department of Physical Therapy, Rehabilitation and Movement  
Science, Northeastern University, Boston, MA, 2018 – 2022

Associate Research Scientist (Affiliated), Center for Signal Processing, Imaging, Reasoning,  
and Learning, Department of Electrical and Computer Engineering, Northeastern University,  
Boston, MA, 2018 – 2022

Assistant Professor, jointly appointed in the Department of Physical Therapy, Rehabilitation  
and Movement Science & Electrical Engineering Department, Northeastern University,  
Boston, MA, 2022 – *Present*

Member, Center for Signal Processing, Imaging, Reasoning, and Learning, Department of  
Electrical and Computer Engineering, Northeastern University, Boston, MA, 2022 – *Present*

Technical Director, Northeastern University Non-invasive Brain Stimulation Center,  
Northeastern University, Boston, MA, 2022 – *Present*

## **HONORS AND AWARDS:**

University of Medicine and Dentistry of New Jersey (now RBHS) Graduate Fellowship 2011

## **MEMBERSHIPS AND POSITIONS HELD IN PROFESSIONAL SOCIETIES:**

### **A. NATIONAL**

1. Rehabilitation Engineering and Assistive Technology Society of North America, 2007-2009
2. American Congress of Rehabilitation Medicine, Member, 2008-2012
3. American Society of Biomechanics, Member, 2008-2010
4. Gait and Clinical Movement Analysis Society 2012

### **B. INTERNATIONAL**

4. International Society of Motor Control, Member, 2017-Present
5. Society for Neural Control of Movement, Member, 2014-Present
6. Society for Neuroscience, Member, 2010-Present
7. Institute of Electrical and Electronics Engineers 2014 - Present

## **SERVICE ON JOURNALS/PUBLICATIONS:**

### **A. ADHOC REVIEWER**

Journal of Neuroscience, Journal of Neurophysiology, Journal of Cognitive Neuroscience, Journal of Motor Behavior, IEEE Transactions on Neural Systems and Rehabilitation Engineering, Scientific Reports, Neuroplasticity, Clinical Biomechanics, Gait and Posture

## **SERVICE TO THE COMMUNITY:**

1. New York Warriors Wheelchair Rugby (503c1 organization), Coach & Board Member, 2006 - June 2011
2. Adaptive Sports Foundation (503c1 organization), Windham, NY, Snowsports Instructor and Trainer, 2006-2017
3. New England Healing Sports Association (503c1 organization), Sunapee, NH, Snowsports Instructor and Trainer, 2017-2020
4. Urban Scholars Society (503c1 organization), Newark, NJ, Member, 2014-2015

## **MENTORSHIP OF STUDENTS FOR UNDERGRADUATE RESEARCH:**

1. Akriti Sharma (Research Assistant, DPT, Rutgers), *September, 2012 – 2014*
2. Reem Salem (Research Assistant, DPT, Rutgers), *September, 2013 – 2014*
3. Nailah Mubin (REU, Teachers College of New Jersey), REU, *July-August 2014*
4. Anita Albanese (REU, University of Nevada-LV), *July-August 2014*
5. Connor King, (Research Assistant, BME, NJIT), *2015-2017*
5. Dan Tanis, (Research Assistant/Post-Bac Research Engineer, BME, NJIT), *2016-2019*
6. Samuel Berin (Co-op student, CCIS, Northeastern), *Jan-June 2017*
7. Alex Huntoon (Co-op student, CCIS, Northeastern), *Jan-June 2017*
8. Sofia Kirkman\* (Research Assistant, Neuroscience, Northeastern), *Sept, 2017-May 2019*
9. Peter Dirksmeier (Research Assistant, ECE, Northeastern), *Jan 2017-May 2019*
10. Sophia Maciel (Research Assistant, ECE, Northeastern), *Sept 2018-June 2019*

11. Yael Lissack (Research Assistant, BioE, Northeastern), *Sept 2018-Present*
12. Bailey Uitz (Capstone Project, PTMRS, Northeastern), *Sept 2018-May 2019*
13. Leila Kiernan (Capstone Project, PTMRS, Northeastern), *Sept 2018-May 2019*
14. Dan Tsai (Capstone Project, PTMRS, Northeastern), *Sept 2018-May 2019*
15. Conor Scott Messer (Capstone Project, BioE, Northeastern), *Sept 2018-May 2019*
16. Mina Iskarous (Capstone Project, BioE, Northeastern), *Sept 2018-May 2019*
17. Stefanie Kate Durcan (Capstone Project, BioE, Northeastern), *Sept 2018-May 2019*
18. Emily Aiko Man (Capstone Project, BioE, Northeastern), *Sept 2018-May 2019*
19. Nathaniel Pinkes\* (Research Assistant, Health Sciences, Northeastern), *Sept 2018-Present*
20. Sambina Anthony (Research Assistant, BNS, Northeastern), *Sept 2018-Present*
21. Sasha Ruszczyk\* (Research Assistant, PTMRS, Northeastern), *Sept 2017-May 2020*
22. Trisha Seth\* (Research Assistant, PTMRS, Northeastern), *Sept 2017-May 2020*
23. Gladys Romero\* (Research Assistant, BNS, Northeastern), *Sept 2017- May 2020*
24. Tessa Griffin\* (Research Assistant, BNS, Northeastern), *Sept 2018-May 2020*
25. Andrea Smith\* (Research Assistant, BioE, Northeastern), *Sept 2018-Present*
26. Holden Lalor (Research Assistant, BioE, Northeastern), *Sept 2018-May 2020*
27. Daniel Belmont (Research Assistant, BioE, Northeastern), *Sept 2018-Present*
28. Zachary Bauer (Capstone Project, BioE, Northeastern), *Sept 2019-May 2020*
29. Melis Tirhi (Capstone Project, BioE, Northeastern), *Sept 2019-May 2020*
30. Mariette Sargios (Capstone Project, BioE, Northeastern), *Sept 2019-May 2020*
31. James Elliott (Capstone Project, BioE, Northeastern), *Sept 2019-May 2020*
32. Nicole Wynne (Capstone Project, BioE, Northeastern), *Sept 2019-May 2020*
33. Zach Fagiani (Research Assistant, BioE, Northeastern), *Jan 2019-May 2021*
34. Spencer Jacobs-Skolik\* (Lake) (Research Assistant, ECE, Northeastern), *Sept 2018-Present*
35. Garrit Streng (Research Assistant, CS, Northeastern), *Sept 2019-Present*
36. Caitlyn Celestino (PT Project, PTMRS, Northeastern), *Sept 2019-Dec 2021*
37. Tyler Greffrath (PT Project, PTMRS, Northeastern), *Sept 2019- Dec 2021*
38. Gabrielle Whittle (Research Assistant, MechE, Northeastern), *Jan 2020-Sept 2020*
39. Victoria Isa\* (Research Assistant, MechE, Northeastern), *Jan 2019-May 2021*
40. Hamza El Ousrouti (Research Assistant, BioE, Northeastern), *Jan 2020-Present*
41. Tiana Sheedy (Research Assistant, PTMRS, Northeastern), *Jan 2020-Present*
42. Megan Kelley (PT Project, PTMRS, Northeastern), *Sept 2020-May 2021*
43. Connor Costales (PT Project, PTMRS, Northeastern), *Sept 2020-May 2021*
44. Ethan Wong\* (Research Assistant, Data Science, Northeastern), *Jan 2019-Present*

*\* Indicates Northeastern Peak Award Recipient*

#### **MENTORSHIP of MASTER's STUDENTS:**

1. Erik Johnson, BIO, Rutgers, Supervisor, *2012 – 2013*
2. Greg Ames, BME, NJIT, M.S. Supervisor, *2012 – 2014*
3. Yifei Wei, BME, NJIT, M.S. Supervisor, *2014-2015*
4. Katherine Gerton, BME, NJIT, M.S. Supervisor, *2015-2016*
5. Don Liang, BioE-Northeastern, M.S. Supervisor *Sept 2018-2020*

#### **MENTORSHIP OF PHD STUNDENTS:**

1. Kyle Lockwood, ECE, Northeastern, Sponsor, *2019-Present*
2. Md Navid Akbar, ECE, Northeastern, Sponsor, *2017-Present*
3. Yunus Bicer, ECE, Northeastern, Sponsor, *2019-Present*
4. Basak Celik, ECE, Northeastern, Sponsor, *2020-Present*
5. Niklas Smedemark-Margulies, ECE, Northeastern, Sponsor, *2022-Present*

### **MENTORSHIP OF POSTDOCTORAL FELLOWS:**

1. Mariusz Furmanek, PhD, 2018 – Present
2. Madhur Mangalam, PhD, 2019 – Present

### **TEACHING RESPONSIBILITIES:**

#### **A. CURRENT**

1. Core Concepts in Rehabilitation Science, (Northeastern-PTMRS, PT7001)
2. Musculoskeletal Biomechanics, (Northeastern-ME, ME5665) [invited lecture], 2018-Present
3. PT Project 1 & 2, (Northeastern-PTMRS), mentor, 2018-Present

#### **B. PAST**

##### *Primary Instructor*

4. Biomedical Computing (NJIT, BME310), 2014 & 2015
5. Healthcare Research, (Northeastern-PTMRS, HLTH 5450), 2020 & 2021
6. DNP Scholarly Project I & II: Applying Practice Knowledge: Implementation/Outcomes (Northeastern- NRSB 7921 & NRSB 7922)

##### *Teaching Assistant*

7. Digital Signal Processing for Physiological Measurement (NJIT, BME698), 2012
8. Neuroscience (Rutgers, PTDR6420), 2014
9. Biomechanics (NJIT, BME684), 2016

### **CURRENT GRANT SUPPORT (Active extramural awards as PI: \$760,262)**

#### **1. NSF**

Mechanism: MRI (CBET-2117626)

Title: MRI: Acquisition of a controllable pulse transcranial magnetic stimulator with robotic positioning and integrated EEG / EMG for engineering and neuroscience research and education

Funding Period: 08/01/2021 – 7/31/2024

Budget: \$417,913

Role: Senior Personnel (NU is Primary)

#### **2. NIH – National Institute of Neurological Disorders and Stroke**

Mechanism: R01 (2 R01 NS085122-06)

Title: Planning and Updating in Frontoparietal Networks for Grasping

Funding Period: 01/01/2021 – 12/31/2025

Budget: \$1,899,754

Role: Co-I (NU is Primary)

#### **3. NSF**

Mechanism: CMMI-M3X-1935337

Title: Coordination of Dyadic Object Handover for Human-Robot Interactions

Funding Period: 10/01/2019 – 09/30/2022

Budget: \$760,262

Role: Co-PI

5. NSF

Mechanism: CBET-1804550

Title: Collaborative Proposal: Understanding Motor Cortical Organization through Engineering Innovation to TMS-Based Brain Mapping

Funding Period: 09/01/2018 – 08/31/2021 (no cost extension filed)

Budget: \$498,000

Role: Senior Personnel (NU is Primary)

4. Marc Cinque

Mechanism: Private Donation for ALS Research

Title: Neuromotor Biomarkers to Improve Earlier Diagnosis of Amyotrophic Lateral Sclerosis

Funding Period: 1/1/2018 – 12/31/2022

Budget: \$125,000 (no IDC)

**COMPLETED GRANT SUPPORT:**

1. NSF-ICORPS

Mechanism: NSF – I-CORPS (#16-539)

Funding Period: 03/01/2019 – 05/30/2019

Budget: \$3,000

Role: Senior Personnel

2. Tier 2 Grant, Northeastern University

Mechanism: Federally Designated Centers / Major Programs Initiative

Title: Modeling muscle and synergy representations in M1

Funding Period: May 1, 2017

Budget: \$12,000 (split between Bouve, COE, Office of the Provost)

Role: Senior Personnel

3. NIH – National Institute of Neurological Disorders and Stroke

Mechanism: F31 (NS092268)

Title: Brain Circuits in Motor Learning

Funding Period: 03/01/2015 – 10/01/2017

Budget: \$94,009

Role: PI

**RESEARCH PUBLICATIONS:**

Link to Google Scholar:

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&hl=en&user=IofX7UgAAAJ&sortby=pubdate](https://scholar.google.com/citations?view_op=list_works&hl=en&hl=en&user=IofX7UgAAAJ&sortby=pubdate)

A. REFEREED ORIGINAL ARTICLES IN JOURNALS

1. **M. Yarossi**, M. Mangalam , S. Naufel, E. Tunik. Virtual Reality as a context for adaptation. *Frontiers in Virtual Reality*. 2021:139.

2. R. Faghihpirayesh , **M. Yarossi**, T. Imbiriba, DH. Brooks, E. Tunik, D. Erdoğmuş.

Efficient TMS-Based Motor Cortex Mapping Using Gaussian Process Active Learning. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. 2021 Aug 18;29:1679-89.

3. M. Mangalam, **M. Yarossi**, MP Furmanek, E Tunik. Control of aperture closure during reach-to-grasp movements in immersive haptic-free virtual reality. *Experimental Brain Research*. 2021 May;239(5):1651-65.
4. MP. Furmanek, M. Mangalam, K. Lockwood ,A. Smith, **M. Yarossi**, E. Tunik. Effects of sensory feedback and collider size on reach-to-grasp coordination in haptic-free virtual reality. *Frontiers in Virtual Reality*. 2021;2:99.
5. M. Mangalam, **M. Yarossi**, MP. Furmanek, E. Tunik. Control of aperture closure during reach-to-grasp movements in immersive haptic-free virtual reality. *Exp Brain Res*. 2021 May;239(5):1651-1665.
6. D. Liang , **M. Yarossi**, S. Jacobs-Skolik, M. Furmanek<sup>1</sup>, D.H. Brooks, D. Erdogmus, E.Tunik Eugene Tunik, "Synergistic Activation Patterns of Hand Muscles in Left- and Right-Hand Dominant Individuals", *J Hum Kinet*. 2021 Jan 29;76:89-100.
7. S. Merians, G. G. Fluet, Q. Qiu, **M. Yarossi**, J. Patel, A. J. Mont, et al., "Hand Focused Upper Extremity Rehabilitation in the Subacute Phase Post-stroke Using Interactive Virtual Environments," *Front Neurol*, vol. 11, p. 573642, 2020.
8. **M. Yarossi**, J. Patel, Q. Qiu, S. Massood, G. Fluet, A. Merians, et al., "The Association Between Reorganization of Bilateral M1 Topography and Function in Response to Early Intensive Hand Focused Upper Limb Rehabilitation Following Stroke Is Dependent on Ipsilesional Corticospinal Tract Integrity," *Front Neurol*, vol. 10, p. 258, 2019.
9. S. Rampersad, B. Roig-Solvas, **M. Yarossi**, P. P. Kulkarni, E. Santarnecchi, A. D. Dorval, et al., "Prospects for transcranial temporal interference stimulation in humans: A computational study," *Neuroimage*, vol. 202, p. 116124, Nov 15 2019.
10. J. Patel, G. Fluet, Q. Qiu, **M. Yarossi**, A. Merians, E. Tunik, et al., "Intensive virtual reality and robotic based upper limb training compared to usual care, and associated cortical reorganization, in the acute and early sub-acute periods post-stroke: a feasibility study," *Journal of neuroengineering and rehabilitation*, vol. 16, p. 92, 2019.
11. T. Manuweera, **M. Yarossi**, S. Adamovich, and E. Tunik, "Parietal activation associated with target-directed right hand movement is lateralized by mirror feedback to the ipsilateral hemisphere," *Frontiers in Human Neuroscience*, vol. 12, p. 531, 2019.
12. M. P. Furmanek, L. F. Schettino, **M. Yarossi**, S. Kirkman, S. V. Adamovich, and E. Tunik, "Coordination of reach-to-grasp in physical and haptic-free virtual environments," *Journal of neuroengineering and rehabilitation*, vol. 16, p. 78, 2019.
13. T. Manuweera, **M. Yarossi**, S. Adamovich, and E. Tunik, "Parietal Activation Associated With Target-Directed Right Hand Movement Is Lateralized by Mirror Feedback to the

- Ipsilateral Hemisphere," *Front Hum Neurosci*, vol. 12, p. 531, 2018.
14. **M. Yarossi**, T. Manuweera, S. V. Adamovich, and E. Tunik, "The effects of mirror feedback during target directed movements on ipsilateral corticospinal excitability," *Frontiers in human neuroscience*, vol. 11, p. 242, 2017.
  15. S. Saleh, **M. Yarossi**, T. Manuweera, S. Adamovich, and E. Tunik, "Network interactions underlying mirror feedback in stroke: A dynamic causal modeling study," *NeuroImage: Clinical*, vol. 13, pp. 46-54, 2017.
  16. J. Patel, Q. Qiu, **M. Yarossi**, A. Merians, S. Massood, E. Tunik, et al., "Exploring the impact of visual and movement based priming on a motor intervention in the acute phase post-stroke in persons with severe hemiparesis of the upper extremity," *Disability and rehabilitation*, vol. 39, pp. 1515-1523, 2017.
  17. G. G. Fluet, J. Patel, Q. Qiu, **M. Yarossi**, S. Massood, S. V. Adamovich, et al., "Motor skill changes and neurophysiologic adaptation to recovery-oriented virtual rehabilitation of hand function in a person with subacute stroke: a case study," *Disability and rehabilitation*, vol. 39, pp. 1524-1531, 2017.
  18. R. Pilkar, **M. Yarossi**, A. Ramanujam, V. Rajagopalan, M. B. Bayram, M. Mitchell, et al., "Application of empirical mode decomposition combined with notch filtering for interpretation of surface electromyograms during functional electrical stimulation," *IEEE transactions on Neural Systems and Rehabilitation Engineering*, vol. 25, pp. 1268-1277, 2016.
  19. L. F. Schettino, S. V. Adamovich, H. Bagce, **M. Yarossi**, and E. Tunik, "Disruption of activity in the ventral premotor but not the anterior intraparietal area interferes with on-line correction to a haptic perturbation during grasping," *Journal of Neuroscience*, vol. 35, pp. 2112-2117, 2015.
  20. K. J. Nolan, **M. Yarossi**, and P. Mclaughlin, "Changes in center of pressure displacement with the use of a foot drop stimulator in individuals with stroke," *Clinical Biomechanics*, vol. 30, pp. 755-761, 2015.
  21. M. Mitchell, **M. Yarossi**, D. Pierce, E. Garbarini, and G. Forrest, "Reliability of surface EMG as an assessment tool for trunk activity and potential to determine neurorecovery in SCI," *Spinal Cord*, vol. 53, pp. 368-374, 2015.
  22. K. J. Nolan, **M. Yarossi**, and A. Ramanujam, "Measuring ambulation in adults with central neurologic disorders," *Phys Med Rehabil Clin N Am*, vol. 24, pp. 247-63, May 2013.
  23. K. J. Nolan and **M. Yarossi**, "Weight transfer analysis in adults with hemiplegia using ankle foot orthosis," *Prosthetics and orthotics international*, vol. 35, pp. 45-53, 2011.
  24. K. J. Nolan and **M. Yarossi**, "Preservation of the first rocker is related to increases in gait speed in individuals with hemiplegia and AFO," *Clinical Biomechanics*, vol. 26, pp. 655-660, 2011.

25. K. J. Nolan, K. K. Savalia, **M. Yarossi**, and E. P. Elovic, "Evaluation of a dynamic ankle foot orthosis in hemiplegic gait: A case report," *NeuroRehabilitation*, vol. 27, pp. 343-350, 2010.
26. A. M. Kwarciak, **M. Yarossi**, A. Ramanujam, T. A. Dyson-Hudson, and S. A. Sisto, "Evaluation of wheelchair tire rolling resistance using dynamometer-based coast-down tests," *J Rehabil Res Dev*, vol. 46, pp. 931-8, 2009.
27. A. M. Kwarciak, S. A. Sisto, **M. Yarossi**, R. Price, E. Komaroff, and M. L. Boninger, "Redefining the manual wheelchair stroke cycle: identification and impact of nonpropulsive pushrim contact," *Archives of physical medicine and rehabilitation*, vol. 90, pp. 20-26, 2009.

#### B. CONFERENCE PROCEEDINGS (Peer Reviewed)

1. M. Han, M. Zandigohar, MP. Furmanek, **M. Yarossi**, G. Schirner, D. Erdogmus. Classifications of Dynamic EMG in Hand Gesture and Unsupervised Grasp Motion Segmentation. In Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference 2021 Nov (Vol. 2021, pp. 359-364).
2. N. Pinkes, Z. Fagiani, E. Wong, H. Jimison, M. Pavel, **M. Yarossi**, E. Tunik. Investigating a classical neuropsychological test in a real world context. In Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference 2021 Nov (Vol. 2021, pp. 1566-1569).
3. S. L. Jacobs-Skolik, D. Liang, D. H. Brooks, D. Erdoğan, **M. Yarossi**, and E. Tunik, "A Muscle Synergy Framework for Cross-Limb Reconstruction of Hand Muscle Activity Distal to a Virtual Wrist-Level Disarticulation," in 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), 2020, pp. 3285-3288.
4. R. Faghihpirayesh, T. Imbiriba, **M. Yarossi**, E. Tunik, D. Brooks, and D. Erdoğan, "Motor cortex mapping using active gaussian processes," in Proceedings of the 13th ACM International Conference on Pervasive Technologies Related to Assistive Environments, 2020, pp. 1-7
5. N. Akbar, **M. Yarossi**, M. Martinez-Gost, M. A. Sommer, M. Dannhauer, S. Rampersad, et al., "Mapping Motor Cortex Stimulation to Muscle Responses: A Deep Neural Network Modeling Approach," *Int Conf Pervasive Technol Relat Assist Environ*, vol. 2020, Jun 2020.
6. **M. Yarossi**, F. Quivira, M. Dannhauer, M. A. Sommer, D. H. Brooks, D. Erdoğan, et al., "An experimental and computational framework for modeling multi-muscle responses to transcranial magnetic stimulation of the human motor cortex," in 2019 9th International IEEE/EMBS Conference on Neural Engineering (NER), 2019, pp. 1122-1125.
7. H. R. Williams, L. Y. Leung, C. M. Gordon-Davis, E. Tunik, M. Pavel, **M. Yarossi**, et al., "'A Huge, Life-Changing Thing:' A Qualitative Survey of the Priorities and Goals of Young Stroke Survivors," *Archives of Physical Medicine and Rehabilitation*, vol. 100, pp.

- e5-e6, 2019.
8. K. Shayestehfard, B. Roig-Solvas, S. Rampersad, **M. Yarossi**, M. Dannhauer, and D. H. Brooks, "Abstract# 99: Optimizing Localization of Temporal Interference Stimulation Effects in a Spherical Head Model," *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, vol. 12, pp. e34-e35, 2019.
  9. S. Rampersad, K. Shayestehfard, B. Roig-Solvas, **M. Yarossi**, and D. H. Brooks, "Abstract# 116: Simulations of temporal interference tCS in a realistic head model," *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, vol. 12, p. e40, 2019.
  10. S. Y. Günay, **M. Yarossi**, D. H. Brooks, E. Tunik, and D. Erdoğan, "Transfer learning using low-dimensional subspaces for EMG-based classification of hand posture," in 2019 9th International IEEE/EMBS Conference on Neural Engineering (NER), 2019, pp. 1097-1100.
  11. A. Demir, **M. Yarossi**, D. Hyde, M. Shafi, D. Brooks, and D. Erdoğan, "Removing TMS Artifacts from EEG Recordings Using a Deep Gated Recurrent Unit," in 2019 9th International IEEE/EMBS Conference on Neural Engineering (NER), 2019, pp. 1109-1112.
  12. A. O. Alokaily, **M. M. Yarossi**, and S. V. Adamovich, "Abstract# 40: Direction of PAS-Induced Modulation of Corticospinal Excitability Depends on Timing Between Stimulation and Movement Onset," *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, vol. 12, pp. e14-e15, 2019.
  13. A. O. Alokaily, **M. Yarossi**, G. G. Fluet, E. Tunik, and S. V. Adamovich, "The Effect of Movement Phase on the Contralaterally Coordinated Paired Associative Stimulation-Induced Excitability," *Annu Int Conf IEEE Eng Med Biol Soc*, vol. 2018, pp. 3080-3083, Jul 2018.
  14. **M. Yarossi**, S. Gordon, K. Gomes, A. Rubakhina, S. Adamovich, and E. Tunik, "Concurrent tDCS and Mirror Feedback has additive effects on M1 excitability," *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, vol. 10, pp. e39-e40, 2017.
  15. **M. Yarossi**, M. Dannhauer, D. Erdogmus, D. Brooks, and E. Tunik, "Multi-muscle TMS mapping using subject-specific FEA models of induced currents," *Brain Stimulation: Basic, Translational, and Clinical Research in Neuromodulation*, vol. 10, p. e28, 2017
  16. A. Merians, **M. Yarossi**, J. Patel, Q. Qiu, G. Fluet, E. Tunik, et al., "Examining VR/Robotic Hand Retraining in an Acute Rehabilitation Unit: A Pilot Study," in *Converging Clinical and Engineering Research on Neurorehabilitation II*, ed: Springer, Cham, 2017, pp. 437-441.
  17. G. Fluet, J. Patel, Q. Qiu, **M. Yarossi**, S. Adamovich, A. Merians, et al., "Early versus delayed VR-based hand training in persons with acute stroke," in 2017 International Conference on Virtual Rehabilitation (ICVR), 2017, pp. 1-7.
  18. J. Patel, G. Fluet, A. Merians, Q. Qiu, **M. Yarossi**, S. Adamovich, et al., "Virtual reality-augmented rehabilitation in the acute phase post-stroke for individuals with flaccid upper extremities: A feasibility study," in 2015 International Conference on Virtual Rehabilitation (ICVR), 2015, pp. 215-223.
  19. G. Fluet, J. Patel, A. Merians, Q. Qiu, **M. Yarossi**, S. Adamovich, et al., "Clinical and neurophysiologic responses to recovery-oriented virtual rehabilitation of hand function in a person with subacute stroke: A case study," in 2015 International Conference on Virtual

- Rehabilitation (ICVR), 2015, pp. 191-198.
20. **M. Yarossi**, S. Adamovich, and E. Tunik, "Sensorimotor cortex reorganization in subacute and chronic stroke: a neuronavigated TMS study," in 2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2014, pp. 5788-5791.
  21. R. Pilkar, **M. Yarossi**, and K. J. Nolan, "EMG of the tibialis anterior demonstrates a training effect after utilization of a foot drop stimulator," *NeuroRehabilitation*, vol. 35, pp. 299-305, 2014.
  22. G. Fluet, A. Merians, J. Patel, A. Van Wingerden, Q. Qiu, **M. Yarossi**, et al., "Virtual reality-augmented rehabilitation for patients in sub-acute phase post stroke: a feasibility study," in 10th International Conference on Disability, Virtual Reality & Associated Technologies, 2014.
  23. R. B. Pilkar, **M. Yarossi**, and G. Forrest, "Empirical mode decomposition as a tool to remove the function electrical stimulation artifact from surface electromyograms: preliminary investigation," in 2012 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2012, pp. 1847-1850.
  24. K. Nolan, **M. Yarossi**, and E. Elovic, "Mechanisms underlying speed changes after chemodenervation intervention in limited and full community ambulators with stroke," *Gait & Posture*, p. S24, 2012.
  25. M. Damcott, **M. Yarossi**, and G. F. Forrest, "Neurophysiological Assessment Tool of Trunk Activity: Reliability and Potential to Measure Neurorecovery," *Archives of Physical Medicine and Rehabilitation*, vol. 93, p. e43, 2012.
  26. K. J. Nolan, **M. Yarossi**, and G. N. Galang, "Superficial Versus Deep Peroneal Nerve Stimulation during Plantar Loading in Acute Stroke: A Case Report," *Archives of Physical Medicine and Rehabilitation*, vol. 92, pp. 1719-1720, 2011.
  27. K. J. Nolan, **M. Yarossi**, and B. Franco, "StepWatch Measures of Community Ambulation in Individuals with Hemiplegia following Stroke," *Archives of Physical Medicine and Rehabilitation*, vol. 92, p. 1720, 2011.
  28. **M. Yarossi**, T. Dyson-Hudson, G. Forrest, A. Kwarciak, and S. A. Sisto, "Shoulder kinematics and kinetics during wheelchair propulsion in persons with tetraplegia," *Proceedings of the American Society of Biomechanics*. Providence, RI, August, pp. 18-21, 2010.
  29. K. J. Nolan and **M. Yarossi**, "Evaluation of Forefoot Force During Terminal Double Support With Ankle Foot Orthosis," *Archives of Physical Medicine and Rehabilitation*, vol. 91, p. e57, 2010.
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#### D. ABSTRACTS

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## SCIENTIFIC PLATFORM PRESENTATIONS:

### A. NATIONAL

1. **Yarossi M**, Mapping Muscle Synergies Using TMS. Bizzi Lab. Massachusetts Institute of Technology, Boston, Massachusetts. *June 2016*
2. **Yarossi M**, Patel J, **Tunik E**. A Collaborative Project to Advance Upper Limb Recovery Following Stroke using Robotics and Virtual Reality. St. Joseph's Rehabilitation Hospital, Wayne, NJ, *June 24, 2016*
3. **Yarossi M**, Tunik E. Decomposing Muscle Synergies in the Human Motor Cortex using Non-Negative Matrix Factorization. Department of Molecular and Behavioral Neuroscience, Rutgers, Newark, NJ, *October 12, 2016*
4. Patel J, **Yarossi M**, Adamovich S, Fluet G, **Tunik E**, Merians A. A Collaborative Project to Advance Upper Limb Recovery Following Stroke using Robotics and Virtual Reality, Podium Presentation, Non-Academic, Non-Peer Reviewed, St. Joseph Regional Medical Center, Wayne, NJ, Bouve College of Health Sciences, Seminar, Regional, Invited, *June*

24, 2016

**B. INTERNATIONAL**

1. **Yarossi M**, Patel J, Qiu Q, Fluet G, Merians A, Adamovich SV, **Tunik E**. Functional and neurophysiological effects of intensive hand retraining in the acute phase post stroke: a pilot study. Society for Neuroscience, San Diego, California, *November 12-16, 2016*
2. **Yarossi M**, New Insights into Human M1 Function during Visuomotor Adaptation. Physiology and Pathophysiology of Human Motor Control Lab. University College of London, London, UK. *December 2016*
3. **Yarossi M**, Wheelchair Propulsion Biomechanics in Tetraplegia. International Shoulder Group Conference, Chicago, IL, *2014*

**PATENTS HELD:**

Provisional Patent: Methods for Mapping Cortical Physiology and Methods of Use Thereof