

CARRIE L. PETERSON

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A. POSITIONS, EDUCATION AND AWARDS

ACADEMIC POSITIONS

Virginia Commonwealth University, College of Engineering Department of Biomedical Engineering Assistant Professor	2016 – present
VCU Department of Physical Medicine and Rehabilitation Affiliate Assistant Professor	2020 – present

EDUCATION AND TRAINING

Northwestern University, Department of Physical Medicine and Rehabilitation Postdoctoral Fellow Advisors: Dr. Wendy Murray and Dr. Eric Perreault	2014 – 2016
Edward Hines, Jr. VA Hospital, Hines, IL Research Scientist	2011 – 2014
Rehabilitation Institute of Chicago, Sensory Motor Performance Program Research Associate	2011 – 2014
The University of Texas, Austin, TX Ph.D. in Mechanical Engineering Advisor: Dr. Richard Neptune Dissertation: “Simulation and experimental analyses of human movement: Application to post-stroke hemiparetic gait.”	2010
The University of Texas, Austin, TX M.S.E. in Mechanical Engineering Advisor: Dr. Richard Neptune Thesis: “Inappropriate flexor synergies influence walking mechanics that reduce plantar flexor contributions to propulsion in persons with post-stroke hemiparesis.”	2007
University of Michigan, Ann Arbor, MI B.S.E. in Mechanical Engineering	2004

AWARDS & HONORS

Sheltering Arms Institute Annual Research Symposium, Best Poster	2022
Outstanding Researcher Award, National Center for Simulation in Rehabilitation Research	2018
Sarah Baskin Award for Excellence in Research, 1 st Place Postdoctoral Fellow Category	2015
Craig H. Neilsen Foundation Postdoctoral Fellowship	2014 – 2016
Office of Postdoctoral Affairs Travel Award, Northwestern University	2014, 2015
National Center for Simulation in Rehabilitation Research Travel Award	2014
NIH Loan Repayment Program Award, Rehabilitation Institute of Chicago	2012 – 2016
National Science Foundation Graduate Research Fellowship, UT Austin	2007 – 2010
Thrust 2000 Fellowship, UT Austin	2005 – 2006
Class of 1931 Engineering Scholar, University of Michigan	2001 – 2004

B. PUBLICATIONS

I have published 20 peer-reviewed manuscripts. I am first author on eight journal publications, and last author on seven publications. A summary of my publication metrics is provided in the table below.

Database	H-Index	i10-Index	Total # of Citations
Google Scholar	8	8	604
Web of Science	7	NA	335

PEER REVIEWED JOURNAL PUBLICATIONS

Complete list of published work in Google Scholar

Google Scholar Profile: <https://scholar.google.com/citations?user=gq6QoDUAAAAJ&hl=en&authuser=1>

Student names are underlined

1. Lewis, C.J., Franke, L.M., Lee, J.V., Mittal, N., Gitchel, G.T., Perera, R.A., Holloway, K.L., Walker, W.C., **Peterson, C.L.**, Hadimani, R.L. (2023) The relationship of neuroanatomy on resting motor threshold and induced electric field strength on treatment outcomes in mild to moderate traumatic brain injury patients during transcranial magnetic stimulation. American Institute of Physics (AIP) Advances doi: 10.1063/9.0000567 (in press). Impact Factor: 1.697, Google Scholar Citations: 0.
2. Roumengous, T., Thakkar, B., **Peterson, C.L.** (2022) Paired Pulse Transcranial Magnetic Stimulation in the Assessment of Biceps Voluntary Activation in Individuals with Tetraplegia. Frontiers in Human Neuroscience doi: 10.3389/fnhum.2022.976014. Impact Factor: 3.473, Google Scholar Citations: 0.
3. Lynch, C., Mittal, N., Roumengous, T., **Peterson, C.L.** (2022) Effects of stimulus waveform on transcranial magnetic stimulation metrics in proximal and distal arm muscles. Neurophysiologie Clinique doi: 10.1016/j.neucli.2022.07.002. Impact Factor: 3.10, Google Scholar Citations: 2.
4. Mittal, N., Thakkar, B., Hodges, C.B., Lewis, C., Cho, Y., Hadimani, R.L., **Peterson, C.L.** (2022) Effect of neuroanatomy on corticomotor excitability during and after transcranial magnetic stimulation and intermittent theta burst stimulation. Human Brain Mapping doi: 10.1002/hbm.25968. Impact Factor: 5.399, Google Scholar Citations: 3.
5. Mittal, N., Majdic, B., **Peterson, C.L.** (2022) Intermittent theta burst stimulation modulates biceps brachii corticomotor excitability in individuals with tetraplegia. Journal of NeuroEngineering and Rehabilitation 19(1):73. doi: 10.1186/s12984-022-01049-9. Impact Factor: 5.208, Google Scholar Citations: 1.
6. Roumengous, T., **Peterson, C.L.** (2022) The assessment of biceps voluntary activation with transcranial magnetic stimulation in individuals with tetraplegia. Restorative Neurology and Neuroscience doi: 10.3233/RNN-221254. Impact Factor: 2.976, Google Scholar Citations 0.
7. Mittal, N., Lewis, C., Cho, Y., **Peterson, C.L.**, Hadimani, R.L. (2022) Effect of fiber tracts and depolarized brain volume on resting motor thresholds during transcranial magnetic stimulation. IEEE Transactions on Magnetics doi: 10.1109/TMAG.2022.3148214. Impact Factor: 1.848, Google Scholar Citations: 2.
8. Mittal, N., Majdic, B., Sima, A., **Peterson, C.L.** (2021) Effect of intermittent theta burst stimulation on biceps corticomotor excitability in nonimpaired individuals. Neuroscience Letters 764:136220. doi: 10.1016/j.neulet.2021.136220. Impact Factor: 3.197, Google Scholar Citations: 4.
9. Roumengous, T., Reutter, A., **Peterson, C.L.** Effect of low-cost transcranial magnetic stimulation navigation on hotspot targeting and motor evoked potential variability in the biceps brachii. (2021) Restorative Neurology and Neuroscience 39(5):319-328. Impact Factor: 2.976, Google Scholar Citations: 0.

10. Syrett, ED., **Peterson, C.L.**, and Darter, B.J. (2021) Assessing the effects of gait asymmetry: Using split-belt treadmill walking protocol to change step length and peak knee joint contact force symmetry. *Journal of Biomechanics* 125 doi: 10.1016/j.jbiomech.2021.110583. Impact Factor: 2.789, Google Scholar Citations: 1.
11. **Peterson C.L.**, Bednar, M.S., Murray, W.M. (2019) Effect of Biceps-to-Triceps Transfer on Rotator Cuff Stress During Upper Limb Weight-Bearing Lift in Tetraplegia: A Modeling and Simulation Analysis. *Journal of Biomechanics* 11;90:143-148. Impact Factor: 4.895, Google Scholar Citations: 2.
12. **Peterson C.L.**, Bednar, M.S., Bryden, A.M., Keith, M.W., Perreault, E.J., Murray, W.M. (2017) Voluntary activation of the biceps-to-triceps and posterior deltoid-to-triceps transfers in quadriplegia. *PLOS ONE*. Mar 2;12(3):e0171141. doi: 10.1371/journal.pone.0171141. Impact Factor: 3.752, Google Scholar Citations: 10.
13. **Peterson C.L.**, Rogers L.M., Bednar, M.S., Bryden, A.M., Keith, M.W., Perreault, E.J., and Murray W.M. (2017). Posture-dependent corticomotor excitability differs between the transferred biceps in individuals with tetraplegia and the biceps of nonimpaired individuals. *Neurorehabilitation and Neural Repair* Vol. 31(4) 354–363. Impact Factor: 4.895, Google Scholar Citations: 3.
14. **Peterson C.L.**, Riley Z.A., Krepkovich E.T., Murray W.M., and Perreault E.J. (2014). Withdrawal reflexes in the upper limb adapt to arm posture and stimulus location. *Muscle & Nerve* 49(5):716-23. Impact Factor: 3.852, Google Scholar Citations: 13.
15. **Peterson, C.L.**, Kautz, S.A. and Neptune, R.R. (2011). Muscle work is increased in pre-swing during hemiparetic walking. *Clinical Biomechanics* 26(8):859-866. Impact Factor: 2.034, Google Scholar Citations: 24.
16. **Peterson, C.L.**, Kautz, S.A. and Neptune, R.R. (2011). Braking and propulsive impulses increase with speed during accelerated and decelerated walking. *Gait & Posture* 33(4): 562-567. Impact Factor: 2.746, Google Scholar Citations: 96.
17. Hall, A.L., **Peterson, C.L.**, Kautz, S.A. and Neptune, R.R. (2011). Relationships between muscle contributions to walking subtasks and functional walking status in persons with post-stroke hemiparesis. *Clinical Biomechanics* 26(5):509-515. Impact Factor: 2.034, Google Scholar Citations: 110.
18. **Peterson, C.L.**, Cheng, J., Kautz, S.A., and Neptune, R.R. (2010). Leg extension is an important predictor of paretic leg propulsion in hemiparetic walking. *Gait & Posture* 32(4): 451-456. Impact Factor: 2.746, Google Scholar Citations: 117.
19. **Peterson, C.L.**, Hall, A.L., Kautz, S.A. and Neptune, R.R. (2010). Pre-swing deficits in forward propulsion, swing initiation and power generation by individual muscles in hemiparetic walking. *Journal of Biomechanics* 43(12): 2348-2355. Impact Factor, 2.789, Google Scholar Citations: 131.
20. Beaman, C.B., **Peterson, C.L.**, Neptune, R.R and Kautz, S.A. (2010). Differences in self-selected and fastest-comfortable walking in post-stroke hemiparetic persons. *Gait & Posture* 31(3): 311-316. Impact Factor, 2.746, Google Scholar Citations: 81.

MANUSCRIPTS IN REVIEW

1. Thakkar, B., **Peterson, C.L.**, Acevedo, E.O. Short Term Effects of Prolonged Continuous Theta Burst Stimulation Targeting Two Brain Regions in Patients with Painful Diabetic Neuropathy: A Prospective, Randomized, Single-Blind Trial. *Clinical Journal of Pain* (in review, submitted March 17, 2023).

2. Thakkar, B., **Peterson, C.L.**, Acevedo, E.O. Prolonged Continuous Theta Burst Stimulation Increases Corticomotor Excitability and Intracortical Inhibition in Patients with Neuropathic pain: An Exploratory, Single-Blinded, Randomized Controlled Trial. *Neurophysiologie Clinique* (in review, submitted March 13, 2023).

MANUSCRIPTS IN PREPARATION

1. Tashli, M., Alam, M.S., Gong, J., Lewis, C.J., **Peterson, C.L.**, Eldardiry H, Atulasimha J. Hadimani, R.L. Prediction of electric fields induced by transcranial magnetic stimulation in the brain using deep encoder-decoder convolutional neural network. Preprint: bioRxiv 2022.10.27.513583; <https://doi.org/10.1101/2022.10.27.513583>
2. Cho, Y., Zhao, H. Cordes, CM, Schnorenberg, AJ, Slavens, BA, **Peterson CL.** Scaling a generic upper limb musculoskeletal model to represent children and adults with paraplegia (for submission to *Journal of Biomechanics*).

REFEREED CONFERENCE PAPERS

Conference papers over four pages in length listed in this category

* indicates podium presentation with (presenter) after the author name who presented

Student names are underlined

1. Mittal, N., Cho, Y., **Peterson, C.L.** (2023) Neural Circuit Model of Long-Term Potentiation from Intermittent Theta Burst Stimulation. 11th International IEEE EMBS Conference on Neural Engineering, Baltimore, MD, April 25-27, 2023.
2. Roumengous, T., Cho, Y., Zeineddine, Y., **Peterson, C.L.** (2023) Motor Evoked Potential Input-Output Curves Indicate Neuroplasticity after Cervical Spinal Cord Injury. 11th International IEEE EMBS Conference on Neural Engineering, Baltimore, MD, April 25-27 2023.
3. ***Peterson C.L.** (presenter), Rogers L.M., Mogk, J.P.M., Bednar, M.S., Bryden, A.M., Keith, M.W., Perreault, E.J., and Murray W.M. (2014). Posture-dependent changes in corticomotor excitability of the biceps after spinal cord injury and tendon transfer. Conference Proceedings IEEE Engineering in Medicine and Biology Society, Chicago, IL, Aug 26-30, 2014, 2 pp 4302-4305. Google Scholar Citations: 7.

REFEREED INTERNATIONAL AND NATIONAL CONFERENCE ABSTRACTS

Conference abstracts and conference papers two pages or less in length listed in this category

* indicates podium presentation with (presenter) after the author name who presented

Student names are underlined

1. Lewis, C.J., Franke, L.M., Lee, J.V., Mittal, N., **Peterson, C.L.**, Hadimani, R.L. The role of neuroanatomy on transcranial magnetic stimulation treatment outcomes in traumatic brain injury patients. 11th International IEEE EMBS Conference on Neural Engineering, Baltimore, MD, April 25-27, 2023.
2. Tashli, M., Alam, M.S., Gong, J., Lewis, C.J., **Peterson, C.L.**, Eldardiry H, Atulasimha J., Hadimani, R.L. Prediction of electric fields induced by transcranial magnetic stimulation in the brain using deep encoder-decoder convolutional neural network. 11th International IEEE EMBS Conference on Neural Engineering, Baltimore, MD, April 25-27, 2023.
3. Tashli, M., Alam, M.S., Gong, J., Lewis, C.J., Hadimani, R.L., **Peterson, C.L.**, Eldardiry H, Atulasimha J. Prediction of stimulation strength of transcranial magnetic stimulation in the brain with deep encoder-decoder convolutional neural network. American Physical Society Meeting, Las Vegas, NV, March 9, 2023.
4. Mittal N., Cho Y., **Peterson CL.** Neural Circuit Model of Long-Term Potentiation from Intermittent Theta Burst Stimulation. National Science Foundation DARE Conference, Transformative Opportunities for Modeling in Neurorehabilitation, University of Southern California, Los Angeles, CA, March 3-4, 2023.
5. *Syrett, D.E. (presenter), **Peterson, C.L.**, Darter, B.J. How Do Changes in Gait Symmetry Affect Factors that Contribute to Knee Joint Loading? American Physical Therapy Association Combined Sections Meeting, San Diego, CA, February 23-25, 2023.

6. *Alam M, Tashli M, Gong J, Lewis CJ, Peterson CL, Eldardiry H, Hadimani RL, Atulasimha J. Prediction of Stimulation Strength of Transcranial Magnetic Stimulation in the Brain with Deep Convolutional Neural Network based Encoder-Decoder Network. 67th Annual Conference on Magnetism and Magnetic Materials, Minneapolis, MN, October 31-Nov 4, 2022.
7. Lewis, C.J., Franke, L.M., Lee, J.V., Mittal, N., Gitchel, G.T., Perera, R.A., Holloway, K.L., Walker, W.C., **Peterson, C.L.**, Hadimani, R.L. Relationship Between Resting Motor Threshold and Neuroanatomy in Mild to Moderate Traumatic Brain Injury Patients during Transcranial Magnetic Stimulation, 67th Annual Conference on Magnetism and Magnetic Materials, Minneapolis, MN, October 31-Nov 4, 2022.
8. Mittal N, Hodges C, Thakkar B, Hadimani RL, **Peterson CL**. Effect of neuroanatomy on motor evoked potentials after intermittent theta burst stimulation. North American Congress on Biomechanics, Ottawa, CA, Aug 21-25, 2022.
9. *Mittal N, Thakkar B, Hodges C, Hadimani RL, **Peterson CL** (presenter). Effect of fiber tracts and depolarized brain volume on resting motor thresholds during transcranial magnetic stimulation. North American Congress on Biomechanics, Ottawa, CA, Aug 21-25, 2022.
10. *Mittal N (presenter), Thakkar B, Hodges C, Cho Y, Lewis C, Andrade A, Nevadomski B, Li K, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on Motor Evoked Potentials after Intermittent Theta Burst Stimulation. Joint MMM-INTERMAG Conference, New Orleans, SC; January 10-14, 2022.
11. Mittal N, Thakkar B, Hodges C, Cho Y, Lewis C, Andrade A, Nevadomski B, Li K, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on Intermittent Theta Burst Stimulation Motor Evoked Potentials. 4th International Brain Stimulation Conference, Charleston, SC, Dec 6-9, 2021.
12. Thakkar B, Mittal N, Hodges C, Cho Y, Lewis C, Andrade A, Nevadomski B, Li K, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on Transcranial Magnetic Stimulation Resting Motor Thresholds. 4th International Brain Stimulation Conference, Charleston, SC, Dec 6-9, 2021.
13. Lewis C, Mittal N, Hodges C, Thakkar B, Cho Y, Andrade A, Nevadomski B, Li K, Peterson CL, Hadimani RL. Effect of Fiber Tract Surface Area on Resting Motor Thresholds during Transcranial Magnetic Stimulation. Annual Meeting of the Biomedical Engineering Society, Orlando, FL, Oct 6-9, 2021.
14. Cho Y, Mittal N, Hodges C, Thakkar B, Lewis C, Andrade A, Nevadomski B, Li K, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on the Response to Neuromodulation in the Biceps Brachii. Annual Meeting of the Biomedical Engineering Society, Orlando, FL, Oct 6-9, 2021.
15. Thakkar B, Mittal N, Hodges C, Cho Y, Lewis C, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on Transcranial Magnetic Stimulation Resting Motor Thresholds. American Congress of Rehabilitation Medicine 98th Annual VIRTUAL Conference, Sept 26-29, 2021.
16. Hodges C, Mittal N, Thakkar B, Cho Y, Lewis C, Hadimani RL, **Peterson CL**. Effect of Neuroanatomy on Intermittent Theta Burst Stimulation Motor Evoked Potentials. American Congress of Rehabilitation Medicine 98th Annual VIRTUAL Conference, Sept 26-29, 2021.
17. Lynch, C., Roumengous, T., Peterson, C.L. Effect of stimulus waveform on transcranial magnetic stimulation metrics in proximal and distal arm muscles. Summer Biomechanics, Bioengineering, and Biotransport Conference. Virtual, June 14-18, 2021.
18. *Roumengous, T. (presenter), Zeineddine, Y. **Peterson, C.L.** Motor evoked potential recruitment curves indicate neuroplasticity of the biceps brachii in cervical spinal cord injury. Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 14-18, 2021.
19. Zeineddine J, Roumengous T, Peterson, C.L. Motor Evoked Potential Recruitment Curves Indicate Neuroplasticity after Spinal Cord Injury. Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 16-19, 2019.
20. Reutter A, Roumengous T, Carrie Peterson Evaluation of a Low-Cost Navigation Technique For Transcranial Magnetic Stimulation. Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 16-19, 2019.
21. Howell, P.A., Roumengous, T. **Peterson, C.L.** Increased Elbow Angle Improves Measurement of Cortical Voluntary Activation of the Elbow Flexors. International Society of Biomechanics Congress, Calgary, Alberta, Canada, July 31-Aug 4, 2019.

22. Roumengous, T., Howell, P.A., Peterson, C.L. Voluntary Drive Amplifies Effects of Paired-Pulse TMS and Arm Posture on Biceps Corticomotor Excitability. International Society of Biomechanics Congress, Calgary, Alberta, Canada, July 31-Aug 4, 2019.
23. Majdic, B., Mittal, N., Peterson, C.L. Excitatory Effect of Intermittent Theta Burst Stimulation on Corticomotor Excitability of the Biceps in Individuals with Tetraplegia. International Society of Biomechanics Congress, Calgary, Alberta, Canada, July 31-Aug 4, 2019.
24. *Mittal, N. (presenter), Majdic, B., Peterson, C.L. The Effect of Intermittent Theta Burst Stimulation on Biceps Corticomotor Excitability in Nonimpaired Individuals and Individuals With Tetraplegia. Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA. June 25-28, 2019.
25. Roumengous, T., Howell, P.A., Peterson, C.L. Biceps Voluntary Activation: Method to Calculate Pre-Stimulus Moment Affects Magnitude But Not Reproducibility. Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA. June 25-28, 2019.
26. Majdic, B., Mittal, N., Peterson, C.L. Effect of Intermittent Theta Burst Stimulation Parameters on Biceps Corticomotor Excitability. Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 17-20, 2018.
27. Howell, P.A., Roumengous, T., Peterson, C.L. Cutaneous Stimulation to Increase Biceps Responses to Transcranial Magnetic Stimulation. Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 17-20, 2018.
28. ***Peterson C.L.** (presenter), Bednar, M.S., Murray, W.M. Rotator cuff muscle stress during weight-relief lift in tetraplegia. Biomedical Engineering Society Annual Meeting, Phoenix, AZ, October 11-14, 2017.
29. ***Peterson C.L.** (presenter), Theiss, R.D., Bednar, M.S., Perreault, E.J., Murray, W.M. Withdrawal reflexes after tendon transfer in quadriplegia. Annual Meeting of the American Society of Biomechanics, Raleigh, NC, August 2-5, 2016.
30. ***Peterson C.L.** (presenter), Bednar, M.S., Bryden, A.M., Keith, M.W., Perreault, E.J., Murray, W.M. Voluntary activation of tendon transfers to restore elbow extension in tetraplegia. Annual Meeting of the Biomedical Engineering Society, Tampa, FL. October 7-10, 2015.
31. ***Peterson C.L.** (presenter), Bednar, M.S., Bryden, A.M., Keith, M.W., Perreault, E.J., and Murray W.M. Effect of arm posture on voluntary activation and moments generated by individuals with tendon transfer and quadriplegia. Summer Biomechanics, Bioengineering, and Biotransport Conference, Snowbird, UT, June 17-20, 2015.
32. **Peterson C.L.**, Rogers L.M., Mogk, J.P.M., Bednar, M.S., M.W., Perreault, E.J., and Murray W.M. Corticomotor excitability of the biceps after tendon transfer and spinal cord injury. 7th World Congress on Biomechanics, Boston, MA, July 6-11, 2014.
33. **Peterson C.L.**, Darbhe, V.A., Bednar, M.S., Perreault, E.J., and Murray, W.M. A comparison of two surgical procedures that restore elbow extension after spinal cord injury. 68th Annual Meeting of the American Society for Surgery of the Hand. San Francisco, CA, October 3-5, 2013.
34. **Peterson C.L.**, Darbhe, V.A., Bednar, M.S., Perreault, E.J., and Murray, W.M. A comparison of two surgical procedures that restore elbow extension after spinal cord injury. Annual Meeting of the Society for Neuroscience. New Orleans, LA, October 13-17, 2012.
35. ***Peterson, C.L.** (presenter), Kautz, S.A., and Neptune, R.R. Paretic muscle work is increased in pre-swing during hemiparetic walking. 35th Annual Meeting of the American Society of Biomechanics, Long Beach, CA, August 10 -13, 2011.
36. *Hall, A.L (presenter), **Peterson, C.L.**, Kautz, S.A., and Neptune, R.R. Relationships between muscle contributions to walking subtasks and functional walking status in persons with post-stroke hemiparesis. 34th Annual Meeting of the American Society of Biomechanics, Providence, RI, August 18-21, 2010.
37. **Peterson, C.L.**, Kautz, S.A., and Neptune, R.R. Increasing paretic leg extension in pre-swing is important for increasing forward propulsion during walking. 34th Annual Meeting of the American Society of Biomechanics, Providence, RI, August 18-21, 2010.
38. **Peterson, C.L.**, Kautz, S.A., and Neptune, R.R. Braking and propulsive impulses positively relate to walking speed during acceleration and deceleration. 34th Annual Meeting of the American Society of Biomechanics, Providence, RI, August 18-21, 2010.

39. ***Peterson, C.L.** (presenter), Hall, A.L., Kautz, S.A. and Neptune, R.R. Pre-swing deficits in forward propulsion, swing initiation and power generation by individual muscles during hemiparetic walking. 6th World Congress on Biomechanics, Singapore, August 1-6, 2010.
40. *Beaman, C.B. (presenter), **Peterson, C.L.**, Neptune, R.R and Kautz, S.A. Differences in self-selected and fastest-comfortable walking in post-stroke hemiparetic persons. 26th Annual Houston Conference on Biomedical Engineering Research. Houston, TX, March 19-20, 2009.
41. **Peterson, C.L.**, Neptune, R.R. and Kautz, S.A. Differences in correlations of anterior-posterior ground reaction forces with paretic and control leg gait variables. North American Congress on Biomechanics (NACOB). Ann Arbor, MI, August 5-9, 2008.
42. ***Peterson, C.L.** (presenter), Neptune, R.R. and Kautz, S.A. Inappropriate flexor synergies influence walking mechanics that reduce paretic propulsion in persons with post-stroke hemiparesis. 18th Meeting of the International Society for Posture and Gait Research (ISPGR), Burlington, VT, July 14-18, 2007.
43. ***Peterson, C.L.** (presenter), Neptune, R.R. and Kautz, S.A. Walking mechanics limit plantar flexor contributions to propulsion in persons with post-stroke hemiparesis. 24^h Annual Houston Conference on Biomedical Engineering Research, Houston, TX, February 8-9, 2007.
44. Turns, L.J., **Peterson, C.L.**, Neptune, R.R. and Kautz, S.A. Paretic leg muscle activity and walking mechanics contribute to asymmetric hemiparetic gait. 23rd Annual Houston Conference on Biomedical Engineering Research. Houston, TX, February 9-10, 2006.

SUBMITTED INTERNATIONAL AND NATIONAL CONFERENCE ABSTRACTS

1. Cho Y, Zhao H, Cordes, CM, Schnorenberg, AJ, Slavens, BA, **Peterson CL**. Scaling a generic upper limb musculoskeletal model to represent children with paraplegia. Annual Meeting of the Biomedical Engineering Society, Seattle, WA, Oct 11-14, 2023.
2. Zhao H, Cho Y, Cordes, CM, Schnorenberg, AJ, Slavens, BA, **Peterson CL**. Shoulder muscle and contact forces during wheelchair propulsion by children and adults with paraplegia. Annual Meeting of the Biomedical Engineering Society, Seattle, WA, Oct 11-14, 2023.
3. **Peterson CL**, Shum, C, Trost, Z. Development of a Virtual Reality and Spinal Stimulation Protocol to Improve Upper Limb Function. Tetrahand World Congress, Atlanta, GA, Nov 7-11, 2023.

C. RESEARCH FUNDING

Since August 2016, current and past funding directly attributable to me is \$1,783,840 (of which \$1,674,340 is external funding and \$109,500 is internal funding). Since 2016, the total current and past support for funded proposals for which I am either a PI or Co-Investigator on is \$7,798,739. Prior to 2016, I was awarded an NSF Graduate Research Fellowship (\$123,000) and a Craig H. Neilsen Foundation Postdoctoral Fellowship (\$150,000).

CURRENT RESEARCH SUPPORT

08/1/2022-7/30/2025

Agency: Dept. of Defense Congressionally Directed Medical Research Programs, Spinal Cord Injury Research Program
Grant Number: SC210164

Title: Home-Based Immersive Virtual Reality and Spinal Stimulation for Upper Limb Rehabilitation in Tetraplegia

Role: PI

Total Award Amount: \$750,311

Funding Attributable to Peterson: \$675,699

Collaborators: Dr. Zina Trost, Dr. Ashraf Gorgey, Dr. Robert Perera, Dr. Lance Goetz, Immersive Experience Labs, LLC

12/01/2021 – 11/30/2024

Agency: Virginia Department of Aging and Rehabilitative Services, Commonwealth Neurotrauma Initiative Fund

Title: Immersive virtual reality and noninvasive spinal stimulation to promote arm function in individuals with tetraplegia

Role: PI

Total Award Amount: \$450,000
Funding Attributable to Peterson: \$397,092
Collaborators: Dr. Zina Trost, Dr. Robert Perera, Immersive Experience Labs, LLC

09/01/2021 – 08/31/2026

Agency: National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR), Spinal Cord Injury Model Systems

Grant Number: 90SIMS0014

Title: Virginia Consortium for Spinal Cord Injury Care

Role: Co-I

Total Award Amount: \$2,449,928

Funding Attributable to Peterson: ~ \$75,000 (ranging 8-12% Peterson 12-month salary support over 5 years)

Collaborators: Dr. Ron Seel, Dr. Ashraf Gorgey Dr. Zina Trost, Dr. Paul Perrin

07/01/2019 –06/30/2023 (No Cost Extension Granted, Termination 06/30/2024)

Agency: National Institute of Health, Eunice Kennedy Shriver National Institute of Child Health & Human Development

Grant Number: R01HD098698

Title: Quantification of Shoulder Pathology and Manual Wheelchair Propulsion in Children and Adults with Spinal Cord Injury using Advanced Biomechanical Modeling and Diagnostic Imaging

Role: Co-I

Total Award Amount: \$2,481,000

Funding Attributable to Peterson: \$413,544 (VCU Subaward amount to Peterson)

Collaborators: PI Dr. Brooke Slavens, Dr. Ameer Seitz

10/1/2020-9/30/2024

Agency: Dept. of Defense Congressionally Directed Medical Research Program

Grant Number: SC190107

Title: Effect of Epidural Stimulation and Resistance Training on Overground Locomotion after Spinal Cord injury

Role: Co-I

Total Award Amount: \$1,250,000

Funding Attributable to Peterson: ~ \$30,000 (5% 12-month salary support for 4 years)

Collaborators: PI Dr. Ashraf Gorgey, Dr. Lance Goetz

PENDING RESEARCH SUPPORT

07/01/2023-06/30/2025

Agency: VCU Breakthroughs Fund

Title: Prediction of Motor Responses in Transcranial Magnetic Stimulation with Deep Neural Network using Neuroanatomy and Functional Connectivity

Role: Co-PI

Total Award Amount: \$200,000

Funding Attributable to Peterson: \$37,000

Collaborators: PI Dr. Ravi Hadimani, Dr. Jayasimha Atulasimha, Dr. Liangsuo Ma

10/01/2023-09/30/2028

Agency: Dept. of Veterans Affairs, Rehabilitation Research and Development Service, RR&D Centers (I50)

Title: Pain Management with Advanced Rehabilitation Interventions and Technology Center

Role: Co-I

Total Award Amount: \$6,240,000

Funding Attributable to Peterson: ~\$80,000 (~7% Peterson 12-month salary support for 5 years)

Key Collaborator: PI Dr. David Cifu

COMPLETED RESEARCH SUPPORT

07/01/2020-06/30/2022

Agency: Dept of Veterans Affairs, RR&D Small Projects in Rehabilitation Engineering (SPiRE) Program

Grant Number: 1 I21 RX003456-01

Title: Transspinal versus Epidural Stimulation for Exoskeletal Assisted Walking after Spinal Cord Injury

Role: Co-I

Total Award Amount: \$230,000

Funding Attributable to Peterson: \$0 (No dedicated effort amount for pilot project)

Collaborators: PI Dr. Ashraf Gorgey, Dr. Lance Goetz

07/01/2020– 04/01/2022

Agency: VCU Value and Efficiency Teaching and Research (VETAR) Award

Title: Using Haptic Virtual Reality and Noninvasive Brain Stimulation to Restore Touch Perception Among Individuals with Complete Paraplegia

Role: Co- PI

Total Award Amount: \$75,000

Funding Attributable to Peterson: \$37,500

Collaborator: Co-PI, Dr. Zina Trost

4/1/2020 – 3/31/2021

Agency: VCU Center for Rehabilitation Science and Engineering (CERSE)/BME Pilot Award

Title: Computational brain modeling and simulation informed by magnetic resonance imaging to determine the effect of brain anatomy on the efficacy of brain stimulation therapy

Role: PI

Total Award Amount: \$25,000

Funding Attributable to Peterson: \$22,000

Collaborator: Dr. Ravi Hadimani

07/01/17 - 06/30/19

Agency: National Center of Neuromodulation for Rehabilitation (NIH Resource Center at Medical University of South Carolina)

Title: Intermittent Theta Burst Stimulation to Promote Motor Re-education After Upper Limb Reconstruction

Role: PI

Total Award Amount: \$37,500

Funding Attributable to Peterson: \$37,500

04/01/17 - 09/30/18

Agency: Virginia Commonwealth University Center for Clinical and Translational Research Endowment Fund

Title: Development of Clinical Measures to Guide Neuromodulation Therapies

Role: PI

Total Award Amount: \$50,000

Funding Attributable to Peterson: \$50,000

07/01/14 - 06/30/16

Agency: Craig H. Neilsen Foundation Postdoctoral Fellowship

Title: Can active elbow extension reduce shoulder loading in C5/C6 quadriplegia?

Role: PI/Postdoctoral Fellow, Mentor: Dr. Wendy Murray

Total Award Amount: \$150,000 (\$75,000 per year for two years)

Funding Attributable to Peterson: \$150,000

09/01/07 – 08/31/10

Agency: National Science Foundation Graduate Research Fellowship Program

Title: Biomechanical Factors Affecting Propulsion Generated by the Paretic Leg in Hemiparetic Gait

Role: Graduate Student Research Fellow, Mentor: Dr. Richard Neptune

Total Award Amount: \$123,000 (\$41,000 per year for 3 years)

Funding Attributable to Peterson: \$123,000

D. INVITED SCIENTIFIC TALKS

1. Upper limb rehabilitation after spinal cord injury and implications for movement disorders. Virginia Commonwealth University, Parkinson's and Movement Disorder Center Education Conference Series, Richmond VA, January 27, 2023.
2. Upper limb rehabilitation after spinal cord injury. University of Colorado, Boulder Integrative Physiology Seminar Series, Boulder, CO, November 28, 2022.
3. Virtual Reality Applications for Spinal Cord Injury Rehabilitation. Virginia Commonwealth University, Inaugural Virtual Reality and Healthcare Technology Transfer Conference, Richmond, VA, September 29, 2022.
4. Neuromechanics applied to upper limb rehabilitation. University of Florida Neuromechanics Seminar Series, April 15, 2022.
5. Arm and Hand Rehabilitation, University of Wisconsin Milwaukee, College of Health Sciences Seminar Series, March 22, 2021
6. Neuromodulation for upper limb recovery. American Congress of Rehabilitation Medicine Symposium, October 21-24, 2020, Virtual.
7. Technology for upper limb recovery after cervical spinal cord injury. American Congress of Rehabilitation Medicine, Functional Electrical Stimulation Task Force Webinar Series, June 29, 2020, Virtual.
8. Neurorehabilitation and Musculoskeletal Biomechanics. Department of Physics Seminar Series, VCU, Richmond, VA, March 6, 2020.
9. Cortical voluntary activation: a measure of muscle innervation after spinal cord injury. Department of Biomedical Engineering and School of Kinesiology Seminar Series, University of Michigan, Ann Arbor, MI, March 21, 2019.
10. Upper limb rehabilitation after spinal cord injury. Spinal Cord Injury Grand Rounds, Hunter Holmes McGuire VA Hospital, Richmond, VA, December 21, 2018.
11. Neurorehabilitation and musculoskeletal biomechanics. VCU Rehabilitation and Regenerative Medicine Symposium, Richmond VA, November 1, 2018.
12. Neurorehabilitation and musculoskeletal modeling to direct rehabilitation. Department of Biology, James Madison University Seminar Series, Harrisonburg, VA, September 28, 2018.
13. Up-conditioning triceps motor evoked potential in individuals with tetraplegia. Seventh Annual Operant Conditioning Meeting, Medical University of South Carolina, Charleston, SC, March 26, 2018.
14. Discovery of new rehabilitation to treat movement disorders. VCU Discovery Dialogue, Richmond, VA, February 12, 2018.
15. Neurorehabilitation and musculoskeletal modeling to direct rehabilitation for individuals after neurologic injury. Grand Rounds Lecture, VCU Department of Physical Medicine and Rehabilitation, Richmond, VA, September 8, 2017.
16. Upper limb rehabilitation after cervical spinal cord injury. Sheltering Arms Physical Rehabilitation Center, Mechanicsville, VA, October 18, 2017.
17. Understanding neuroplasticity and the dynamics of human movement to direct rehabilitation. Spinal Cord Injury Grand Rounds, Hunter Holmes McGuire VA Hospital, Richmond, VA, June 9, 2017.
18. Initiatives in rehabilitation after neurologic injury. Faculty position interview seminar, Joint Department of Biomedical Engineering, University of North Carolina, North Carolina State University, Raleigh, NC, Feb 24, 2016.
19. Initiatives in rehabilitation after neurologic injury. Faculty position interview seminar, Department of Biomedical Engineering, University of Connecticut, March 4, 2016.
20. Effect of voluntary activation and corticomotor excitability on elbow extension strength restored after tendon transfer in spinal cord injury. Annual Research Day of the Edward Hines, Jr. VA Hospital, Hines, IL. May 20, 2014.

LOCAL VIRGINIA/RICHMOND/VCU SYMPOSIA PRESENTATIONS

* indicates podium presentation with (presenter) after the author name who presented

Student names are underlined

1. **Peterson, CL.** Brain Stimulation for Rehabilitation. Sheltering Arms Institute Annual Research Symposium, Richmond, VA, October 28, 2022. Won Best Poster Award in Brain Health Research Category.
2. Brent Nevadomski, Bhushan Thakkar, Abigail Andrade, Peter Baek, Lavie Ngo, Deanna Skrivanek, Edmund Acevedo, Carrie Peterson. Effectiveness of Theta Burst Stimulation on Corticospinal Excitability and Cortical Inhibition in Painful Diabetic Neuropathy Patients. 2022 Annual Poster Symposium for Undergraduate Research and Creativity. Virginia Commonwealth University, Richmond, Virginia. April 20, 2022.
3. Bhushan Thakkar, Carrie Peterson, Edmund Acevedo. Examining the Efficacy of Theta Burst Stimulation on Different Brain Regions Using Self-Report Measures in Patients with Painful Bhushan Thakkar PT, MS 196 Diabetic Neuropathy. Proceedings of the Graduate Student Association's 25th Annual Research Symposium & Exhibit. Virginia Commonwealth University, Richmond, Virginia. April 19, 2022.
4. Yeajin Cho, Mittal N., Thakkar B., Hodges C., Lewis, C., Andrade A., Li K., Nevadomski B., Hadimani, R.L., Peterson, C.L. Effect of Neuroanatomy on the Response to Neuromodulation in the Biceps Brachii. Proceedings of the VCU College of Engineering Dean's Undergraduate Research Initiative Symposium. Richmond, Virginia. November 17, 2021.
5. Deanna Skrivanek, Bhushan Thakkar, Abigail Andrade, Brent Nevadomski, Edmund Acevedo, Carrie Peterson. Effectiveness of Theta Burst Stimulation on Different Brain Regions in Patients with Painful Diabetic Neuropathy. Proceedings of the VCU College of Engineering Dean's Undergraduate Research Initiative Symposium. Richmond, Virginia. November 17, 2021.
6. *Yasmina Zeineddine, Thibault Roumengous, Carrie Peterson. Motor Evoked Potential Recruitment Curves to Monitor Neuroplasticity after Spinal Cord Injury, Engineering Undergraduate Research Symposium, VCU, Richmond, VA, Virtual, November 20, 2020.
7. *Thibault Roumengous (presenter), Paul A. Howell, and Carrie Peterson. Voluntary drive amplifies effects of paired-pulse TMS and arm posture on biceps corticomotor excitability. Virginia Academy of Science 97th Annual Meeting, Norfolk, VA, May 22-24, 2019.
8. *Blaize Majdic (presenter), Neil Mittal, and Carrie Peterson. The effect of intermittent theta burst stimulation on corticomotor excitability of the biceps and transferred muscles. Virginia Academy of Science 97th Annual Meeting, Norfolk, VA, May 22-24, 2019.
9. Paul A. Howell, Thibault Roumengous, and Carrie Peterson. Innovative Methodologies to Reliably Assess Cortical Voluntary Activation of the Elbow Flexors, Central Virginia Society for Neuroscience Conference, Richmond, VA, March 24-25, 2018.

E. STUDENT ADVISING

GRADUATE RESEARCH ADVISEES WHO HAVE COMPLETED DEGREES

	Student Name	Dissertation or Thesis Title	Degree/Date
1	Neil Mittal	Intermittent Theta Burst Stimulation: Application to Spinal Cord Injury Rehabilitation and Computational Modeling	PhD Dec 2021
2	Thibault Roumengous	Evaluating Neuromuscular Function of the Biceps Brachii after Spinal Cord Injury: Assessment of Voluntary Activation and Motor Evoked Potential Input-Output Curves Using Transcranial Magnetic Stimulation	PhD Dec 2021
3	Christopher Lynch	Effect of Stimulus Waveform on Transcranial Magnetic Stimulation Metrics in Proximal and Distal Arm Muscles	MS Dec 2021

4	Blaize Majdic	The Effect of Intermittent Theta Burst Stimulation on Biceps Corticomotor Excitability in Non-impaired Individuals and Individuals with Tetraplegia	MS May 2020
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CURRENT GRADUATE RESEARCH ADVISEES WORKING TOWARDS THESIS/DISSERTATION

	Student Name	Degree	Program Dates	Student Status
1	Hanshen Zhao	PhD	Fall 2021-present	Passed qualifying exam, PhD expected May 2025 Research Topic: Wheelchair propulsion simulation
2	Yeajin Cho	MS	Fall 2022-present	MS with Thesis expected Aug 2023 Research Topic: Musculoskeletal model adaptation
3	Hadeel Al Hamam	PhD	Fall 2023-	Research Topic: Virtual reality rehabilitation
4	Mahdi Paslar	PhD	Fall 2023-	Research Topic: Virtual reality rehabilitation

OTHER GRADUATE STUDENT RESEARCH ADVISEES

indicates contributed to research, but not towards a Thesis

	Student Name	Degree	Research Period	Research Topic
1	#Jefferson Deken	MS (non-thesis)	2022-present	Wheelchair propulsion EMG analysis
2	Eugene Ablordeppey	PhD (exited program)	2019-2020	Wheelchair propulsion simulation
3	#Paul Howell	MS (non-thesis)	2017-2020	Voluntary activation with TMS

GRADUATE DISSERTATION AND THESIS COMMITTEES

Department listed is at VCU unless otherwise noted

	Student Name	Degree/Dept	Graduation Year	Advisor
1	Uzair Rehman	PhD/BME	ongoing	Ashraf Gorgey
2	Wesley Lohr	PhD/BME	Ongoing	Ravi Hadimani
3	Edward Daniel Syrett	PhD/Physical Therapy	ongoing	Ben Darter (Primary) Peterson (Co-Advisor)
4	Pedram Soroush	PhD/BME	2023	Dean Krusienski
5	Srdjan Lesaja	PhD/BME	2022	Dean Krusienski
6	Alireza Omidi	PhD/BME	2022	John Wilson
7	Bhushan Thakkar	PhD/Rehabilitation & Movement Sciences	2022	Edmund Acevedo (Primary) Peterson (Co-Advisor)
8	John Damiao	PhD/Occupational Therapy	2020	Lynwood Gentry
9	Abed Adawi	MS/Biology/JMU	2020	Corey Cleland
10	Michael Tyler Perez	MS/BME	2019	Jennifer Wayne
11	Hamzah Magsood	PhD/MNE	2019	Ravi Hadimani
12	Farheen Syeda	PhD/MNE	2018	Ravi Hadimani

UNDERGRADUATE STUDENT RESEARCH ADVISEES

1. Sanjana Davis	2023-present
2. Luke Garcia	2023-present
3. Lavie Ngo	2021-2022
4. Peter Baek	2021-2022
5. Annie Pham	2021-2022
6. Mariam Williams	2021-2022

7. Miriya Phillip	2021-2022
8. Yeajin Cho	2019-2021
9. Deanna Skrivanek	2020-2021
10. Anica Huang	2020-2021
11. Abigail Andrade	2020-2021
12. Keith Li	2020-2021
13. Brent Nevadomski	2020-2021
14. Alec Reutter	2018-2020
15. Ben Widener	2018-2020
16. Yasmina Zeineddine	2018-2021
17. Neha Potdar	2017-2019
18. Areej Ennasr	2017-2018

HIGH SCHOOL STUDENT RESEARCH ADVISEES VIA DEAN'S EARLY RESEARCH INITIATIVE (DERI)

1. Trevor Lertsaranont	2022-present
2. Trisha Taparia	2021-2022
3. Joshua Rasure	2019-2020
4. Mark Carnes	2018-2019
5. Amisha Gandhi	2018-2019
6. Ben Widener (became VCU BME student)	2017-2018
7. Piper McKenzie (became VCU BME student)	2017-2018

HONORS AND AWARDS BY STUDENTS UNDER MY MENTORSHIP

UROP: VCU Undergraduate Research Opportunities Program

CCTR: VCU Center for Clinical and Translational Research (CCTR) DURI: VCU Dean's Undergraduate Research Initiative

DERI: VCU Dean's Early Research Initiative

	Student Name	Year	Award
1	Neil Mittal	2020-2021 2020 2020 2019 2019 2019 2017-2020	Koerner Family Foundation Award UROP Mentor (Abigail Andrade) DERI Mentor (Amisha Ghandi) DURI Mentor (Yeajin Cho) EMBS International Summer School on Computer Modeling in Medicine Received funding for NIH BRAIN Initiative Summer Course at the University of Missouri July 14-20, 2019 Dean's Fellowship
2	Thibault Roumengous	2019 2019 2019-2020 2019 2018 2017-2018	DURI Mentor (Alec Reutter) CCTR Mentor (Yasmina Zeineddine) DERI Mentor (Mark Carnes, Joshua Rasure) Accepted and fully funded by NIH to attend National Center for Adaptive Neurotechnologies Summer Short Course, July 8-26, 2019 Graduate School Travel Award DERI Mentor (Ben Widener)
3	Bhushan Thakkar	2021 2021 2020 2020	Graduate School Travel Award CCTR Mentor (Miriya Phillip) DURI Mentor (Deanna Skrivanek) UROP Mentor (Brent Nevadomski)
4	Miriya Phillip	2021-2022	CCTR Summer Fellowship Award
5	Yeajin Cho	2021-2022	DURI Award

6	Deanna Skrivanek	2020-2021	
7	Abigail Andrade	2022	DAAD Research Internships in Science and Engineering (RISE) Program in Germany
		2020-2021	UROP Award
8	Brent Nevadomski	2020-2021	UROP Award
9	Alec Reutter	2018-2019	DURI Award
10	Yasmina Zeineddine	2018-2019	CCTR Summer Fellowship Award
11	Areej Ennasr	2017-2018	UROP Award
12	Paul Howell	2017-2018	DERI Mentor (Piper McKenzie)

F. TEACHING ACTIVITIES

Virginia Commonwealth University

EGRB 203: Statics and Mechanics of Materials (6 semesters)

2017-2022

- Undergraduate course, 3 credits
- Total number of students taught: 152

EGRB 423/491: Rehabilitation Engineering and Prostheses (5 semesters)

2018-present

- New course developed by Dr. Peterson
- Combined undergraduate (EGRB 423) and graduate course (EGRB 492), 3 credits
- Total number of students taught: 86

EGRB 491/591: Modeling and Simulation of Human Movement (2 semesters)

2021-present

- New course developed by Dr. Peterson
- Combined undergraduate (EGRB 491) and graduate course (EGRB 591), 3 credits
- Total number of students taught: 33

EGRB 604: Biomechanics (1 semester)

2023-present

- Graduate course, 3 credits
- Total number of students taught: 12

EGRB 401/402: Senior Design Teams Mentored

Team	Student Names	Academic Year	Project	Sponsor
1	Zainab Alibrahim Anica Huang Julia Som Nikhat Nurat	2022-2023	Postural Orthostatic Tachycardia Syndrome (POTS) Monitoring Device	Drew Jones
2	Connor Delaney Yeajin Cho Yasmina Zeineddine Raymond Hang Anuj Kotak	2021-2022	Postural Orthostatic Tachycardia Syndrome (POTS) Monitoring Device *Won 3 rd Place at Engineering Expo	Drew Jones
3	Shawn DiRocco Hiral Patel Rosa Soto Jessica Bragg Eric Edusei	2020-2021	Osseointegration for Water Repellency	QL Plus
4	Fatimah Abualsaud	2019-2020	Safe Hands for Adaptive Rowing	Sportable

	Jehad Alamoudi James Filson Abigail J. Park Alex Windsor			
5	Shane Albin Samuel Kossol Omprakash Lankalapalli Neil Patel	2019-2020	Contour Foam Seating to Cue Sitting Balance in Children with Impaired Postural Control	Olivier Rolin, M.D./Ph.D., VCU Health
5	Alaysha Shearn Gifty Gracious-Ross Jay Sprangler Mohammed Almutawa	2018-2019	Safe Hands for Adaptive Rowing	Sportable
6	Megan Dell Sarah Neal Vristhi Phadumdeo Bishakha Dhamala	2017-2018	Quantitative Joint Angle Measurement Device for Children with Cerebral Palsy	Bon Secours

Northwestern University

Guest Lecturer, Biomechanics of Human Movement, Winter 2016

The University of Texas at Austin

Teaching Assistant, Graduate Dynamics, Fall 2009

Teaching Assistant, Biomechanics of Human Movement, Fall 2005, 2006

G. SERVICE ACTIVITIES

MANUSCRIPT REVIEWER

1. Applied Bionics and Biomechanics
2. Archives of Physical Medicine and Rehabilitation
3. Clinical Biomechanics
4. Frontiers in Aging Neuroscience
5. Frontiers in Human Neuroscience
6. Frontiers in Neurorobotics
7. Frontiers in Neuroscience, Neural Technology (on the Editorial Board)
8. Gait & Posture
9. Journal of Applied Biomechanics
10. Journal of Biomechanics
11. Journal of Biomechanical Engineering
12. Journal of NeuroEngineering and Rehabilitation
13. Journal of Neuroscience Methods
14. Journal of Rehabilitation Research and Development
15. Muscle and Nerve
16. Neurorehabilitation and Neural Repair
17. Plos One
18. Scientific Reports
19. Spinal Cord Nature
20. IEEE Transactions on Magnetics
21. Translational Psychiatry

GRANT/FELLOWSHIP/SCHOLARSHIP REVIEWER

1. VCU Momentum Awards, 2023
2. VCU Parkinson's and Movement Disorders Center Pilot Grants 2021-present
3. Dept of Veterans Affairs Small Projects in Rehabilitation Engineering (SPIRE) Awards, 2020-present
4. National Science Foundation Disability and Rehabilitation Engineering (DARE), 2020
5. National Science Foundation Graduate Research Fellowship Program 2018, 2019
6. National Center of Neuromodulation for Rehabilitation 2018-present
7. VCU Postdoctoral Fellowship Grant 2018-present
8. University of Michigan College of Engineering Class of 1931E Scholarship Committee, 2016-present

PROFESSIONAL MEMBERSHIPS

1. American Society of Biomechanics since 2008
2. Society for Neuroscience since 2012
3. Biomedical Engineering Society since 2015
4. IEEE Engineering in Medicine and Biology Society since 2014

PROFESSIONAL SOCIETY SERVICE

1. OpenSim Workshop Organizer and Leader, University of Wisconsin- Milwaukee, Milwaukee, WI, May 22-23, 2023
2. Early Career Faculty Leadership Group, Founding Member, American Society of Biomechanics, 2019-2022
3. North American Congress on Biomechanics Session Co-Chair: Upper Extremity, Ottawa, CA, 2022
4. North American Congress on Biomechanics Session Co-Chair: Rehabilitation, Ottawa, CA, 2022
5. American Society of Biomechanics Abstract Reviewer, 2018-present
6. Summer Bioengineering, Biomechanics and Biotransport Conference Abstract Reviewer, 2017-present
7. BMES Annual Meeting Abstract Reviewer, 2018-present
8. Organized Session and Co-Chaired Session: Rehabilitation methods, tools, and devices for shoulder, World Congress on Biomechanics, Dublin, Ireland, July 8-12, 2018
9. ASME Sports Biomechanics, Session Co-Chair World Congress on Biomechanics, Dublin, Ireland, July 8-12, 2018
10. ASME BED Student Paper Competition, Reviewer and Master's Thesis Judge at World Congress on Biomechanics, Dublin, Ireland, July 8-12, 2018

VCU SERVICE

1. University Council, College of Engineering Representative, 2018-present
2. Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Mentor, Dr. Jessie Oldham, 2022-present
3. Engineering World Health Faculty Advisor 2018-present
4. BME Awards Committee 2018-present
5. BME Graduate Student Recruiting and Admissions Committee, 2016-present
6. College of Engineering Community Engagement and Outreach Committee Member, 2018
7. Educational Excellence Task Force Committee Member, 2017
8. BME Procurement Committee, Chair, 2017

COMMUNITY OUTREACH AND OTHER SERVICE

1. Engineering in Vision Presenter, 2020-present
2. Presentations at Richmond Public High Schools, one presentation per semester, 2021-present
3. Volunteer at Sportable Wheelchair Tennis Tournaments, 2021, 2022
4. Lab Demonstrations to VCU Health Science Academy, once per semester, 2019-2020
5. Presentation at Science Bing, Brain Stimulation, December 7, 2020
6. Presentation at VCU Science Hub, Not on My Resume, March 5, 2020
7. Hosted Richmond Public Students for Career Day, VCU Science Academy, 2018, 2019
8. Hosted Annual National Biomechanics Day at VCU 2018, 2019
9. VCU Health Hacks Judge, 2018, 2019

10. VCU BME Faculty Panel for Student Feedback, 2017, 2018, 2023
11. Full Steam Workshop Leader, VCU, 2017, 2022, 2023
12. VCU Discovery Summer Program, VCU, 2017, 2018, 2022
13. NIH Loan Repayment Program Ambassador, 2017-present
14. Virginia Junior Academy of Science Judge, 2017
15. Volunteer at Sportable Wheelchair Basketball Tournaments, 2017, 2018
16. Faculty Volunteer for the Perry Initiative in Richmond, VA 2016
17. Dept. of Veterans Affairs Research Day Participant, Edward Hines Jr., VA Hospital 2011-2014
18. Hosted Michigan Research Community Spring Break at RIC 2014
19. Sensory Motor Performance Program Seminar Series Coordinator 2012-2013
20. Member of the University of Texas Mechanical Engineering Graduate Student Board 2008-2010
21. Member of UT for Rural Enhancement through Education and Design 2008-2010
22. Organization Representative- Clinton Global Initiative University Conference, Austin, TX 2009
23. Introduce a Girl to Engineering Day Volunteer 2008, 2009
24. Consider Every Option Camp Volunteer 2008-2010
25. Explore UT Volunteer 2008, 2009
26. University of Texas Graduate Student Recruiting Volunteer 2008-2010
27. Peer Mentor, University of Michigan International Programs in Engineering 2003-2004

PROFESSIONAL DEVELOPMENT (2016-PRESENT)

1. KEEN Engineering Unleashed Decoding the DNA of 3Cs & Creating High Impact Courses, St Louis, MO, Aug 1-4, 2023
2. OpenSim Advanced User Workshop, Stanford University, Palo Alto, CA, March 26-28, 2019
 - Cost of attendance provided through an Outstanding Researcher Award from the National Center for Simulation in Rehabilitation Research
3. Poster Presenter and Conference Attendee: SCI 2020: Launching a Decade for Disruption in Spinal Cord Injury Research, Bethesda, MD, February 12-13, 2019
4. Selected for Training in Grantsmanship for Rehabilitation Research Program (TIGRR), 2018-present
5. Selected for US Bone and Joint Initiative Young Investigator Initiative (USBJYII), 2018-present
6. NIH Regional Seminar, Washington D.C., May 2-4, 2018
 - Complimentary registration through serving as an NIH LRP Program Ambassador
7. VCU Teaching for your Career Program, 2018
8. National Center for Neuromodulation Advanced Operant Conditioning Workshop, March 27-29, 2018
9. Virginia Bio, Women Building Bio: The XX Factor, September 26, 2017
10. VCU Grant Academy, 2017
11. VCU Faculty Peer Mentoring Program, 2017-present
12. National Center for Neuromodulation Level 1 Workshop, October 24-28, 2016