

Seoung Hoon Park, Ph.D.

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EDUCATION

Postdoctoral Training in Neurorehabilitation 2019-2022
Shirley Ryan AbilityLab and Northwestern University Chicago, IL, USA
Mentor: Ming Wu

Ph.D., Kinesiology – Motor Neuroscience 2014-2019
University of Florida Gainesville, FL, USA
Dissertation: Low-frequency Oscillations in Force Output - Relevance to Healthy and At-risk-for-stroke Older Adults
Mentor: Evangelos A. Christou

M.S., Kinesiology – Motor Learning and Control 2010-2012
Seoul National University Seoul, South Korea
Thesis: Differential contribution of visual and auditory information to accurately predict the direction and rotational motion of a visual stimulus
Advisor: Seonjin Kim

B.S., Kinesiology 2004-2010
Seoul National University Seoul, South Korea
* 2-year compulsory military service (2005 - 2007)

PROFESSIONAL EXPERIENCE

Presidential Frontier Faculty Assistant Professor on Tenure Track 2022-Date
Department of Health and Human Performance
Department of Communication Sciences and Disorders
Department of Clinical Sciences
University of Houston

Postdoctoral Research Fellow 2019-2022
Legs + Walking Lab, Shirley Ryan AbilityLab Chicago, IL, USA
Department of Physical Medicine and Rehabilitation, Northwestern University

Graduate Assistant 2014-2019
Department of Applied Physiology and Kinesiology, University of Florida Gainesville, FL, USA

Graduate Assistant 2010-2012
Motor Behavior Laboratory, Seoul National University Seoul, South Korea

RESEARCH FOCUS

- Neurophysiological mechanisms responsible for impaired motor control and learning in older people and individuals with neurological diseases (stroke; spinal cord injury)
- Developing neurorehabilitation tools and protocols for improving motor control and function with emphasis on walking and balance in people with neurological diseases
- Behavioral and neural changes in response to rehabilitative interventions in individuals with neurological diseases

RESEARCH PUBLICATIONS

Peer-reviewed Journal Publications

* *Corresponding author*

26. Park H, Lee BC, Li S, Sayenko DG, & **Park SH***. Transcutaneous spinal stimulation paired with visual feedback facilitates retention of improved weight transfer toward the affected side in people post-stroke. *Journal of NeuroEngineering and Rehabilitation*. 2;22(1):188, 2025. (10.1186/s12984-025-01673-1).
25. **Park SH**, Park H, Ahn J, & Lee BC. A Novel Adaptive Propulsion Enhancement eXperience (APEX) System: Development and Preliminary Validation for Enhancing Gait Propulsion in Stroke Survivors. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 33:1486-1496, 2025. (10.1109/TNSRE.2025.3560324).
24. **Park SH**, Yan S, Dee W, Reed R, Rymer WZ, & Wu M. Intermittent versus continuous adaptation to pelvis assistance during walking improves mediolateral balance in people with spinal cord injury. *Experimental Brain Research*, 243(1):21, 2025. (10.1007/s00221-024-06971-z).
23. **Park SH**, Yan S, Dee W, Reed R, Roth EJ, Rymer WZ, & Wu M. Enhanced phasic calf muscle activation with swing resistance enhances propulsion of the paretic leg in people post-stroke. *Journal of Neurophysiology*, 132(5):1348-1358, 2024. (10.1152/jn.00485.2023).
22. Yan S, **Park SH**, Dee W, Reed R, Rojas A, Rymer WZ & Wu M. Motor adaptation to continuous lateral trunk support force during walking improves trunk postural control and walking in children with cerebral palsy: A pilot study. *Human Movement Science*, 97:103258, 2024. (10.1016/j.humov.2024.103258).
21. Yan S, **Park SH**, Dee W, Reed R, Rojas A, Rymer WZ & Wu M. Trunk postural reactions to the force perturbation intensity and frequency during sitting astride in children with cerebral palsy. *Experimental Brain Research*, 242(1):275-293, 2024. (10.1007/s00221-023-06744-0).
20. **Park SH**, Yan S, Dee W, Reed R, Roth EJ, Rymer WZ, & Wu M. Overground walking with a constraint force on the non-paretic leg during swing improves paretic propulsion and walking speed in people post-stroke. *Journal of Neurophysiology*, 130(1):43-55, 2023. (10.1152/jn.00008.2023).
19. Yan S, **Park SH**, Reed R, Dee W, Rojas A, Rymer WZ & Wu M. Improving trunk postural control facilitates walking in children with cerebral palsy. *American Journal of Physical Medicine and Rehabilitation*, 102(9):795-802, 2023. (10.1097/PHM.0000000000002206).

18. **Park SH**, Dee W, Keefer R, Roth EJ, Rymer WZ, & Wu M. Enhanced phasic sensory afferents paired with controlled constraint force improve weight shift toward the paretic side in individuals post-stroke. *Journal of Stroke and Cerebrovascular Diseases*, 32(4):107035, 2023 (10.1016/j.jstrokecerebrovasdis.2023.107035).
17. **Park SH**, Lin J, Dee W, Keefer R, Rymer WZ, & Wu M. Swing-phase pelvis perturbation improves dynamic lateral balance during walking in individuals with spinal cord injury. *Experimental Brain Research*, 241(1):145-160, 2023 (10.1007/s00221-022-06507-3).
16. **Park SH**, Yan S, Dee W, Reed R, Roth EJ, Rymer WZ, & Wu M. Repeated adaptation and de-adaptation to the pelvis resistance force facilitate retention of motor learning stroke survivors. *Journal of Neurophysiology*, 127(6):1642-1654, 2022 (doi: 10.1152/jn.00046.2022).
15. **Park SH**, Hsu C, Dee W, Roth EJ, Rymer WZ, & Wu M. Enhanced error facilitates motor learning in weight shift and increases use of the paretic leg during walking at chronic stage after stroke. *Experimental Brain Research*, 239(11):3327-3341, 2021 (doi: 10.1007/s00221-021-06202-9).
14. **Park SH**, Hsu C, Lin J, Dee W, Roth EJ, Rymer WZ, & Wu M. Increased motor variability facilitates motor learning in weight shift toward the paretic side during walking in individuals post-stroke. *European Journal of Neuroscience*, 53, 3490-3506, 2021 (doi: 0.1111/ejn.15212).
13. **Park SH**, Hsu C, Dee W, Roth EJ, Rymer WZ, & Wu M. Gradual adaptation to pelvis perturbation during walking reinforces motor learning of weight shift toward the paretic side in individuals post-stroke. *Experimental Brain Research*, 239, 1701-1713, 2021 (doi: 10.1007/s00221-021-06092-x).
12. **Park SH**, Lin J, Dee W, Hsu C, Roth EJ, Rymer WZ, & Wu M. Targeted Pelvic Constraint Force Induces Enhanced Use of the Paretic Leg During Walking in Persons Post-Stroke. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 28(10), 2184-2193, 2020 (doi: 10.1109/TNSRE.2020.3018397).
11. Casamento-Moran A, Delmas S, **Park SH**, Yacoubi B, & Christou EA. Reaction to a visual stimulus: Anticipation with steady and dynamic contractions. *Journal of Human Kinetics*, 69(1), 17-27, 2019 (doi: 10.2478/hukin-2019-0025).
10. **Park SH**, Wang Z, McKinney W, Khemain P, Lui S, Christou EA, & Mosconi NW. Functional Motor Control Deficits in Aging Fragile X Mental Retardation 1 Premutation Carriers. *Experimental Brain Research*, 237(9), 2269-2278, 2019 (doi: 10.1007/s00221-019-05566-3).
9. **Park SH**, Kim C, Yacoubi B, & Christou EA. Control of oscillatory force tasks: low-frequency oscillations in force and muscle activity. *Human Movement Science*, 64, 89-100, 2019 (doi: 10.1016/j.humov.2019.01.009).
8. **Park SH** & Kwon M. The effect of trial-to-trial variability during practice of force control tasks on motor learning. *Journal of Korean Society for the Study of Physical Education*, 23(2), 127-136, 2018 (doi: 10.15831/JKSSPE.2018.23.2.127).
7. Delmas S, Casamento-Moran A, **Park SH**, Yacoubi B, & Christou EA. Motor planning perturbation: muscle activation and reaction time. *Journal of Neurophysiology*, 120, 2059-2065, 2018 (doi: 10.1152/jn.00323.2018).

6. Ernster AE, **Park SH**, Yacoubi B, Christou EA, Casamento-Moran, Singer ML, & Humbert IA. Motor transfer from the corticospinal to the corticobulbar pathway. *Physiology & Behavior*, 191, 155-161, 2018 (doi: 10.1016/j.physbeh.2018.04.016).
5. **Park SH**, Casamento-Moran A, Singer ML, Ernster AE, Yacoubi B, Humbert IA, & Christou EA. Integration of Visual Feedback and Motor learning: Corticospinal vs. Corticobulbar Pathway. *Human Movement Science*, 58C, 88-96, 2018 (doi: 10.1016/j.humov.2018.01.002).
4. **Park SH**, Casamento-Moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of low-frequency oscillations. *Experimental Brain Research*, 235, 2717-2727, 2017 (doi: 10.1007/s00221-017-5005-5).
3. **Park SH**, Kwon M, & Christou EA. Motor output oscillations with magnification of visual feedback in older adults. *Neuroscience Letters*, 647, 8-13, 2017 (doi: 10.1016/j.neulet.2017.03.011).
2. **Park SH**, Kwon M, Solis D, Lodha N, & Christou EA. Motor control differs for increasing and releasing force. *Journal of Neurophysiology*, 115 (6), 2924-2930, 2016 (doi: 10.1152/jn.00715.2015).
1. **Park SH***, Kim SJ, Kwon M, & Christou EA. Differential contribution of visual and auditory information to accurately predict the direction and type of stimulus. *Applied Physiology, Nutrition, and Metabolism*, 41 (3), 235-243, 2016 (doi: 10.1139/apnm-2015-0390).

In Review:

4. **Park SH**, Yan S, Dee W, Reed R, Rymer WZ, & Wu M. Stance-Phase Synchronized Transcutaneous Spinal Stimulation Enhances the Retention of Gait Stability in Incomplete Spinal Cord Injury.
3. **Park SH**, Ahn J, & Lee BC,. State-Space Modeling of Real-Time Visual Biofeedback and Late-Stance Belt-Speed Modulation for Quantifying Error- and Use-Dependent Learning of Gait Propulsion in Individuals Post-Stroke.
2. Park H, Lee BC, Sayenko DG, Li S, & **Park SH***. Inward Platform Translations during Treadmill Walking Enhance Lateral Weight Shift and Paretic Leg Engagement in Chronic Stroke.
1. **Park SH**, Lee C, Park H, Ahn J, & Lee BC. Independent and synergistic effects of visual biofeedback and phase-specific belt deceleration on affected-leg propulsion in post-stroke split-belt treadmill training.

In Preparation:

4. Park H, Lee BC, Li S, Sayenko DG, & **Park SH***. Influence of phasic versus continuous transcutaneous spinal stimulation paired with visual feedback in people post-stroke.
3. Park H, Lee BC, Li S, Sayenko DG, & **Park SH***. Effects of visually guided locomotor training paired with off-center transcutaneous spinal stimulation on weight transfer toward the paretic leg in people post stroke.

2. Park H, Li S, Sayenko DG, & **Park SH***. Influences of mediolateral postural perturbation paired with transcutaneous spinal stimulation on dynamic balance in individuals post stroke.
1. **Park SH***, Maeng H, Kim K, & Sayenko D. Does transcutaneous spinal cord stimulation improve walking in individuals with spinal cord injury? A meta-analysis.

OTHER PUBLICATIONS

Peer-reviewed Conference Proceedings:

1. **Park SH** & Lee BC. Development and preliminary evaluation of a real-time multiple assistance system for asymmetric gait rehabilitation using an instrumented treadmill, 24th International Conference on Control, Automation and Systems (ICCAS), 947-952, 2024

In Review:

RESEARCH FUNDING

Ongoing (external):

Ongoing (internal):

Start-up funds	Park (PI)	9/2022-8/2026
University of Houston		\$ 281,000
Role: Principal Investigator		

Pending:

NIH-NICHD R03	Park (PI)	7/2026-6/2028
National Institutes of Health		\$ 343,940
Enhancing dynamic balance post-stroke via mediolateral perturbation and spinal neuromodulation		
Role: Principal Investigator		

NIH-NICHD R03	Park (PI)	12/2026-11/2028
National Institutes of Health		\$343,377
Phasic Spinal Stimulation to Consolidate Visually Guided Weight-Bearing Learning in Chronic Stroke		
Role: Principal Investigator		

NIH-NICHD R21	Lee (PI)	12/2026-11/2028
National Institutes of Health		\$431,750
"Mechanism-Informed Precision Rehabilitation for Post-Stroke Propulsion Recovery: Investigating Transfer Effects and Learning Phenotypes		
Role: Co-Investigator		

In Preparation:

NIH R21 (TBD) **Park (PI)** **2026-2028**
National Institutes of Health Amount TBD
Constraint-induced movement therapy for over-ground walking in people post stroke
Role: Principal Investigator

NIH R21 (TBD) **Park (Co-PI)** **2026-2028**
National Institutes of Health Amount TBD
Influence of instrumented treadmill-based propulsion-inducing multimodal training system paired with transcutaneous spinal modulation
Role: Co-principal Investigator

Completed / Previous Support:

Research Progress Grant – Early Career **Park (PI)** **1/2025-12/2025**
University of Houston, College of Liberal Arts and Social Sciences \$ 4,000
Influence of lateral postural perturbation on dynamic balance post-stroke
Role: Principal Investigator

Research Grant **Lee (PI)** **8/2024-7/2025**
Neuromeka Co., Ltd. \$ 4,500
Revolutionizing a treadmill-based fall prevention training technology
Role: Co-Investigator

Research Progress Grant – Early Career **Park (PI)** **1/2023-6/2024**
University of Houston, College of Liberal Arts and Social Sciences \$ 4,000
Effects of improved lingual motor control on swallowing in dysphagia following stroke
Role: Principal Investigator

NIH-NICHD, R01HD083314 **Wu (PI)** **1/2021-6/2022**
National Institutes of Health
Improved dynamic lateral balance of humans with SCI
Role: Postdoc Research Associate

NIH-NINDS, R01NS115487 **Wu (PI)** **3/2021-6/2022**
National Institutes of Health
Neuromuscular mechanisms of specific trunk interventions in children with cerebral palsy
Role: Postdoc Research Associate

NIH-NICHD, R01HD082216 **Wu (PI)** **8/2019-3/2021**
National Institutes of Health
Constraint induced movement therapy for walking in individuals post stroke
Role: Postdoc Research Associate

Submitted / Not Funded Applications:

As Faculty PI

NSF CAREER AWARD, 2544165 **Park (PI)** **1/2026-12/2030**
National Science Foundation \$ 627,875
CAREER: Restoring Dynamic Walking Balance Post-Stroke via a Phased Approach to Platform Perturbation and Spinal Neuromodulation
Role: Principal Investigator
Panel recommendation: competitive

CTPH CTS Pilot Award	Park (PI)	9/2025-7/2026
Consortium for Translational and Precision Health		\$ 50,000
Novel Biomarker-Guided Spinal Neuromodulation for Post-Stroke Gait Recovery: A Translational Framework for Personalized Neurorehabilitation		
Role: Principal Investigator		
TIRR Mission Connect Founders Neurotrauma Research Award	Park (PI)	2025/7-2027/7
TIRR Foundation		\$ 100,000
Improving weight transfer post-stroke via spinal stimulation and visual feedback		
Role: Principal Investigator		
NIH-NICHD, 1R21HD120894-01	Park (PI)	12/2025-11/2027
National Institutes of Health		\$ 413,838
Influence of phasic transcutaneous spinal stimulation paired with visually guided weight transfer in individuals post-stroke		
Role: Principal Investigator		
NIH-NICHD, R03HD117062	Park (PI)	12/2024-11/2026
National Institutes of Health		\$ 344,120
Influence of lateral postural perturbation paired with transcutaneous spinal stimulation on dynamic balance post-stroke		
Role: Principal Investigator		
<i>Scored at 25th percentile (impact score: 38); resubmitted as 1 R03HD117062-01A1 – not discussed</i>		
NIDILRR, Switzer Fellowship	Park (PI)	2023-2024
Administration for Community Living		\$ 70,000
Improve dynamic balance of individuals with hemiplegic stroke		
Role: Principal Investigator		
NIH-NICHD, R03HD113885-01	Park (PI)	2023-2025
National Institutes of Health		\$ 155,000
Influence of lateral postural perturbation paired with transcutaneous spinal stimulation on dynamic balance post-stroke		
Role: Principal Investigator		Not discussed

As Postdoctoral PI

AHA Postdoctoral Fellowship	Park (PI)	2022-2024
American Heart Association		\$ 140,952
Effect of enhanced motor activity and sensory feedback during walking with constraint force in people post stroke		
Role: Principal Investigator		
NIDILRR, Switzer Fellowship	Park (PI)	2021-2022
Administration for Community Living		\$ 70,000
Application of constraint force paired with transcutaneous electrical stimulation for walking in individuals post stroke		
Role: Principal Investigator		
AHA Postdoctoral Fellowship	Park (PI)	2021-2023
American Heart Association		\$ 134,236
Application of constraint force paired with transcutaneous electrical stimulation for walking in individuals post stroke		
Role: Principal Investigator		

NIDILRR, Switzer Fellowship	Park (PI)	2020-2021
Administration for Community Living		\$ 70,000
Application of constraint force paired with enhanced sensory feedback induces forced use of the paretic leg and improves gait symmetry in individuals post-stroke		
Role: Principal Investigator		

TEACHING EXPERIENCE

Course Teaching:

- **Motor Learning and Control KIN 4315.** Teach the undergraduate course in the HHP program at the University of Houston. 2023-date.
- **Measurement Techniques in Human Performance KIN 4310.** Teach the undergraduate course in the HHP program at the University of Houston. 2025-date.
- **Biomechanics KIN 3309.** Teach the undergraduate course in the HHP program at the University of Houston. 2024.
- **Applied Human Anatomy APK 2100 & 2100C.** Teach three 3-hour undergraduate courses per semester in the APK program at the University of Florida. 2014-2019.
- **Swimming and Weight Training (051.012, 051.014, & 051.018).** Teach the undergraduate courses in the kinesiology program at Seoul National University. 2013-2014.

ACADEMIC COMMITTEES

University of Houston

Member:

Ph.D. committee for Ruiqing Fan (2022-date; mentor: Ashwini Joshi)

Ph.D. dissertation committee for Komal Kukkar (2026-date; mentor: Pranav Parikh)

Ph.D. candidacy committee for Dacia Martinez Diaz (2024; mentor: Charles Layne)

Ph.D. candidacy committee for Komal Kukkar (2023; mentor: Pranav Parikh)

MENTORSHIP

Graduate Students:

- **2022-Date – University of Houston**
Hyunje Park (2024-date)
Adrielle Rivera (2025-date; co-mentor; primary advisor: Beom-Chan Lee)
- **2019-2022 – Shirley Ryan AbilityLab & Northwestern University**
Alessandro Gozzi (2021-2022)
Iram Hameeduddin (2021-2022)
*Mentored in Ming Wu's lab
- **2014-2019 – University of Florida**
Yoonjin Choi (2018-2019)
Delmas Stefan (2017-2019)
*Mentored in Evangelos Christou's lab

Undergraduate Students:

- **2022-Date – University of Houston**
Zeba Ashraf (2025-date; 2026 PURS)
Nhat Nguyen (2023-2025)
Adrielle Rivera (2024-2025)
Ria Kolluru (2023-2025)
Yasmeen Elfeki (2023-2024; 2024 SURF)
Celeste Contreras (2023-2024)
Tracy Akinyode (2023-2024)
Nicholas Macias (2023-2024; 2023 SURF & 2024 PURS)
- **2014-2019 – University of Florida**
Michelle Weintraub (2019)
Austin Wilson (2018-2019)
Alexandra Pepin (2018)
Shan He (2014-2015)
*Mentored in Evangelos Christou's lab

INVITED PRESENTATIONS

- Restoring Post-Stroke Locomotion: From Biomechanical Modulation to Neural Stimulation, and Towards their Synergy. The February Mission Connect meeting, TIRR Foundation, Houston, USA, 2026
- Effects of perturbation-based locomotor training on gait in individuals post-stroke. Neuromotor Skill Advancement for Post-baccalaureates (NSAP) Seminar, University of Houston, Houston, USA, 2024.
- Effects of perturbation-based locomotor training on walking and balance in people post-stroke. Institute of Sport Science, Incheon National University, Incheon, South Korea, 2023.
- Perturbation-based locomotor training for individuals post-stroke. Department of Biomedical Engineering, University of Houston, Houston, TX, USA, 2023.
- Perturbation-based locomotor training for individuals post-stroke. International Research Symposium, Tae'an AI Industry Promotion Agency, South Korea, 2023.
- Applying lateral pelvis resistance versus assistance during walking enhances weight shift and use of the paretic leg in individuals post-stroke. Grand Rounds, Department of Physical Medicine and Rehabilitation, Northwestern University, Chicago, IL, USA, 2021.
- Does constraint-induced forced use of the affected leg during locomotor practice improve walking performance in individuals post-stroke? Korean Society of Sport Biomechanics International Conference, Chuncheon, South Korea, 2020.
- Low-frequency oscillations and control of steady force. Human Movement Science Seminar, Seoul National University, Seoul, South Korea, 2019.

CONFERENCE PRESENTATIONS

National/International:

31. Park, H, Rivera A, Lee, B-C, & **Park SH**. Synergistic Effects of Phase-Specific Spinal Stimulation and Visual Feedback on Hip Stabilizer Activation Post-Stroke. *International Conference on Neurorehabilitation*, 2026. (Under review)
32. Rivera A, Park H, Ahn J, **Park SH**, & Lee B-C. Treadmill-Delivered Propulsion-Augmenting Training With Real-Time Propulsive-Force Biofeedback for Post-Stroke Gait. *International Conference on Neurorehabilitation*, 2026. (Under review)
29. Shin G, Lee C, **Park SH**, Lee B-C, & Ahn J. Short-term Transfer of Propulsion-Targeted Treadmill Training to Overground Gait Symmetry and Weaker-Limb Ankle Joint Entropy in Older Adults. *International Conference on Neurorehabilitation*, 2026. (Under review)
28. Shin G, Lee C, **Park SH**, Lee B-C, & Ahn J. Transfer Effects of Adaptive Propulsion Enhancement eXperience (APEX) Training on Gait Symmetry and Weak-Leg Joint Entropy During Overground Walking in Older Adults. *10th World Congress of Biomechanics*, 2026. (under review)
27. Rivera A, Park H, **Park SH**, Ahn J, & Lee B-C. Real-time modulation of split-belt treadmill speed enhances gait propulsion and neuromuscular engagement in post-stroke hemiparesis. *10th World Congress of Biomechanics*, 2026. (under review)
26. Park H, Lee B-C, Sayenko D, Li S, & **Park SH**. Targeted mediolateral platform shifts induce adaptive use of the paretic leg during gait in stroke. *Society for Neuroscience*, 2025.
25. Rivera A, Park H, Lee C, Ahn J, **Park SH**, & Lee B-C. Enhancing paretic propulsion post-stroke via real-time visual biofeedback and adaptive dual-belt treadmill control. *Society for Neuroscience*, 2025.
24. **Park SH**, Park H, Ahn J, & Lee BC. Propulsion-facilitating gait training enhances paretic leg function in stroke survivors. *International Conference on Biomedical Engineering and Bioinformatics (ICBEB)*, 2025.
23. **Park SH** & Lee BC. Development and preliminary evaluation of a real-time multiple assistance system for asymmetric gait rehabilitation using an instrumented treadmill. *24th International Conference on Control, Automation and Systems (ICCAS)*, 2024.
22. Macias N & **Park SH**. Effects of lateral postural perturbation on dynamic balance in people post-stroke. *Society for Neuroscience*, 2024.
21. **Park SH**, Yan S, Dee W, Keefer R, Roth E, Rymer W, & Wu M. Enhanced phasic calf muscle activation with swing resistance enhances propulsion of the paretic leg in people post-stroke. *Society for Neuroscience*, 2023.
20. **Park SH**, Maeng H, & Kim K. Does transcutaneous spinal cord stimulation improve walking in individuals with spinal cord injury? A meta-analysis. *ACSM Annual Meeting*, 2023.
19. **Park SH**, Yan S, Dee W, Keefer R, Rymer W, & Wu M. Intermittent adaptation to pelvis perturbation during walking enhances retention and generalization of improved weight transfer in people with spinal cord injury. *Society for Neuroscience*, 2022.
18. **Park SH**, Yan S, Dee W, Reed R, Roth E, Rymer W, & Wu M. Repeated locomotor adaptation and de-adaptation facilitate retention of motor learning during walking in individuals post-stroke. *Society for Neuroscience*, 2021.
17. Yan S, **Park SH**, Reed R, Dee W, Rojas AM, Rymer WZ, & Wu M. Trunk support improves treadmill walking in children with cerebral palsy. *Society for Neuroscience*, 2021.

16. **Park SH**, Dee W, Reed R, & Wu M. Application of constraint force paired with enhanced sensory feedback induces forced use of the paretic leg and improves gait symmetry in individuals post-stroke. *International Society of Electrophysiology and Kinesiology*, 2020.
15. **Park SH**, Lin J, Dee W, Hsu C, Roth EJ, Rymer WZ & Wu M. Forced use of the affected leg during walking improves gait in individuals with stroke. *NASPSA*, 2020.
14. **Park SH**, Kwon M, & Christou EA. Magnification of visual feedback alters modulation of motor neuron pool in older adults. *Society for Neuroscience*, 2019.
13. **Park SH**, Wang Z, McKinney W, Christou EA, & Mosconi MW. Functional motor control deficits in fragile x mental retardation 1 gene premutation carriers. *ACSM Annual Meeting*, 2019.
12. McKinney WS, Wang Z, **Park SH**, Christou EA, & Mosconi MW. Precision sensorimotor control in aging FMR1 premutation carriers. *Midwest Fragile X Research Exchange*, 2019.
11. **Park SH**, Kim C, Yacoubi B, & Christou EA. Control of dynamic force tasks: low-frequency oscillations in force and modulation of muscle activity. *Society for Neuroscience*, 2018.
10. Delmas S, Casamento-Moran A, **Park SH**, Yacoubi B, & Christou EA. Motor planning muscle activation patterns and reaction time. *Society for Neuroscience*, 2018.
9. Ernster AE, **Park SH**, Yacoubi B, Christou EA, Casamento-Moran, Singer ML, & Humbert IA. Cross-pathway transfer between the ankle and tongue. *Dysphagia Research Society*, 2018.
8. **Park SH**, Casamento-moran A, Singer ML, Ernster AE, Yacoubi B, Humbert IA, & Christou EA. Motor learning for corticospinal and corticobulbar pathways. *Society for Neuroscience*, 2017.
7. **Park SH**, Kwon M, & Christou EA. Motor output oscillations with magnification of visual feedback in older adults. *Progress in Motor Control*, 2017.
6. Delmas S, Casamento-Moran A, **Park SH**, Yacoubi B, & Christou EA. Motor output variability increases reaction time variability. *Progress in Motor Control*, 2017.
5. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of low-frequency oscillations. *Society for Neuroscience*, 2016.
4. Casamento-moran A, **Park SH**, Yacoubi B, & Christou EA. Low-frequency oscillations in force slow reaction time. *Society for Neuroscience*, 2016.
3. **Park SH**, Kwon M, Solis D, Lodha N, & Christou EA. Motor control differs for increasing and releasing force. *Society for Neuroscience*, 2015.
2. Kim C, **Park SH**, Paez Cecilia, Moon H, & Christou EA. Low-frequency oscillations in force and muscle activity relate to force variability during sinusoidal tasks. *The 24th Annual Meeting of the Neural Control of Movement*, 2015. (Sole Presenter)
1. Kim HJ, Yang JH, Koo DH, **Park SH**, Jung YJ, Jeong DH, Park SY, & Seo JS. Effect of the Wingate-induced Muscle Fatigue on Coordination of Upper Limb During Reaching Task: Kinematic Analysis. *The 5th Asia-Pacific Conference on Exercise and Sports Science*, 2011.

Local/State:

32. Ashraf Z, Park H, Rivera A, Lee B-C, & **Park SH**. Transcutaneous Spinal Stimulation Immediately Stabilizes Isometric Force Control. *Research Day*, University of Houston, 2026.

31. Park H, Lee B-C, Sayenko D, Li S, & **Park SH**. Mediolateral treadmill perturbations enhance paretic leg use during walking in people post-stroke. *The Dr. Robert G. Grossman Mission Connect Neurotrauma Symposium*, The Institute for Rehabilitation and Research Foundation, 2025.
30. Rivera A, Park H, Lee C, Ahn J, **Park SH**, & Lee B-C. Enhancing paretic propulsion post-stroke via real-time visual feedback and adaptive dual-belt treadmill control. *The Dr. Robert G. Grossman Mission Connect Neurotrauma Symposium*, The Institute for Rehabilitation and Research Foundation, 2025.
29. Park H, Lee BC, Li S, Sayenko D, & **Park SH**. Effect of phasic transcutaneous spinal stimulation with visual feedback on the retention of improved weight transfer in individuals post-stroke. *Revolutionary Technologies Research Symposium*, University of Houston, 2025.
28. Elfeki Y, Park H, Lee BC, & **Park SH**. Effects of phasic transcutaneous spinal stimulation paired with visually guided weight transfer in individuals post stroke. *Research Day*, University of Houston, 2025.
27. Park H, Lee BC, Li S, Sayenko D, & **Park SH**. Phasic transcutaneous spinal stimulation paired with visual feedback improves weight transfer toward the affected side in stroke survivors. *Patricia Levy Zusman International Workshop on Neuroregeneration*. 2025.
26. Park H, Lee B-C, Li S, Sayenko D, & **Park SH**. Influence of phasic transcutaneous spinal stimulation paired with visually guided weight transfer in people post stroke. *The Dr. Robert G. Grossman Mission Connect Scientific Symposium*, The Institute for Rehabilitation and Research Foundation, 2024.
25. Elfeki Y, Nguyen N, Kolluru R, & **Park SH**. Effects of perturbation paired with spinal stimulation on dynamic balance during walking in individuals post-stroke. *Research Day*, University of Houston, 2024.
24. Macias N & **Park SH**. Mediolateral perturbation performed during walking on post-stroke participants. *Research Day*, University of Houston, 2024.
23. **Park SH**, Lin J, Dee W, Hsu C, Roth EJ, Rymer WZ, & Wu M. Forced use of the paretic leg induced by a targeted resistance force applied to the pelvis during walking in individuals post-stroke. *Research Day*, Northwestern University, 2020.
22. **Park SH**, Wang Z, McKinney W, Christou EA, & Mosconi MW. Motor Control Deficits in Aging Fragile X Mental Retardation 1 Premutation Carriers. *Graduate Student Research Day*, University of Florida, 2019.
21. **Park SH**, Wang Z, McKinney W, Christou EA, & Mosconi MW. Functional Motor Control Deficits in Aging Fragile X Mental Retardation 1 Premutation Carriers. *14th Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2019.
20. **Park SH**, Wang Z, McKinney W, Christou EA, & Mosconi MW. Functional Motor Control Deficits in Aging Fragile X Mental Retardation 1 Premutation Carriers. *The D. K. Stanley Lecture Series*, College of Health & Human Performance, University of Florida, 2019.
19. **Park SH**, Kim C, Yacoubi B, & Christou EA. Steadiness of dynamic force tasks: low-frequency oscillations in force and muscle activity. *Graduate Student Research Day*, University of Florida, 2018.
18. **Park SH**, Kim C, Yacoubi B, & Christou EA. Control of dynamic force tasks: low-frequency oscillations in force and modulation of muscle activity. *13th Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2018.

17. **Park SH**, Kim C, Yacoubi B, & Christou EA. Low-frequency oscillations in force and muscle activity during sinusoidal force tasks. *The D. K. Stanley Lecture Series*, College of Health & Human Performance, University of Florida, 2018.
16. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of oscillations in force from 0-1 Hz. *Graduate Student Research Day*, University of Florida, 2017.
15. Ernster AE, **Park SH**, Yacoubi BK, & Christou EA, Casamento-Moran A, Singer ML, Humbert IA. Test of cross-systems transfer between corticobulbar and corticospinal pathways during goal directed tasks of the tongue and ankle. *College of Public Health and Health Professions Research Day*, University of Florida, 2017.
14. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of oscillations in force from 0-1 Hz. *Annual Diversity Graduate Research Symposium*, University of Florida, 2017.
13. Delmas, S, Casamento-Moran, A, **Park SH**, Yacoubi B, & Christou EA. Anticipation and reaction time. *Undergraduate Research Day*, University of Florida, 2017.
12. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of oscillations in force from 0-1 Hz. *The D. K. Stanley Lecture Series*, College of Health & Human Performance, University of Florida, 2017.
11. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of oscillations in force from 0-1 Hz. *12nd Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2017.
10. **Park SH**, Casamento-moran A, Yacoubi B, & Christou EA. Voluntary reduction of force variability via modulation of oscillations in force from 0-1 Hz. *Graduate Student Research Symposium*, College of Health & Human Performance, University of Florida, 2016.
9. **Park SH**, Neha Lodha, & Christou EA. Greater asymmetry in motor control for TIA. *11th Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2016.
8. **Park SH**, Neha Lodha & Christou EA. Greater asymmetry in motor control for TIA. *The D. K. Stanley Lecture Series*, College of Health & Human Performance, University of Florida, 2016.
7. **Park SH**, Kwon MH, Solis D, Lodha N, & Christou EA. Motor control differs for increasing and releasing force. *Graduate Student Research Symposium*, College of Health & Human Performance, University of Florida, 2015.
6. **Park SH**, Kwon MH, Solis D, Lodha N, & Christou EA. Motor control differs for increasing and releasing force. *Graduate Student Research Day*, University of Florida, 2015.
5. Corti M, Casamento-Moran A, **Park SH**, Faris KJ, Piepenbrink B, & Christou EA, Subramony SH, Byrne BJ. Biomarkers in Friedreich's Ataxia: Identifying Appropriate Clinical Trial Endpoints. *CTSI Research Day*, Clinical and Translational Science Institute, University of Florida, 2015.
4. **Park SH**, Kim SJ & Christou EA. Different contribution of visual and auditory information to accurately predict the direction and type of stimulus. *The D. K. Stanley Lecture Series*, College of Health & Human Performance, University of Florida, 2015.
3. Kim C, **Park SH**, Paez C, Lodha N & Christou EA. Low-frequency oscillations in force and muscle activity relate to force variability during sinusoidal tasks. *10th Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2015.

2. **Park SH**, Kim SJ, & Christou EA. Differential contribution of visual and auditory information to accurately predict the direction and type of stimulus. *10th Annual Neuromuscular Plasticity Symposium*, College of Public Health and Health Professions, University of Florida, 2015.
1. **Park SH**. Differential Effect of Visual and Auditory Information on Response Accuracy. *Graduate Student Research Symposium*, College of Health & Human Performance, University of Florida, 2014.

PROFESSIONAL AFFILIATIONS

- Society for Neuroscience (SfN)
- Society for the Neural Control of Movement (NCM)
- North American Society for the Psychology of Sport and Physical Activity (NASPSPA)
- American College of Sports Medicine (ACSM)
- Progress in Motor Control (PMC)
- International Society of Electrophysiology and Kinesiology (ISEK)

HONORS AND AWARDS

National/International:

- Graduate Student Writing Award, American Kinesiology Association, USA, 2019.
- Predoctoral Outstanding Research Award, Association of Korean Neuroscientists, USA, 2017.
- The Korean Honor Scholarship, The Embassy of The Republic of Korea, USA, 2017.

University of Houston:

- Provost's Undergraduate Research Scholarship. [Zeba Ashraf](#), 2026.
- Outstanding Doctoral Student Award for Excellence in Ph.D. Studies, [Hyunje Park](#), 2025.
- Cullen Fellowship Travel Grant, [Hyunje Park](#), 2025
- Provost's Faculty Travel Fund, 2025.
- Poster Excellence Award, Mission Connect Scientific Symposium, TIRR Foundation, [Hyunje Park](#), 2024.
- Provost's Faculty Travel Fund, 2024.
- Faculty Excellence, [UH News](#), 2024.
- Scholars Walk, Featured Faculty Member, 2024.
- Summer Undergraduate Research Fellowship. [Yasmeen Elfeki](#), 2024.
- Provost's Undergraduate Research Scholarship. [Nicholas Macias](#), 2024.
- Summer Undergraduate Research Fellowship. [Nicholas Macias](#), 2023.
- Provost's Faculty Travel Fund, 2023.

Northwestern University & Shirley Ryan AbilityLab:

- 1st place Sarah Baskin Outstanding Research Award, 2021.

University of Florida:

- Dr. Stacy E. and Mr. Joseph T. Cutrono Conference Scholarship Award, 2019.
- Graduate School Doctoral Dissertation Award, 2019.
- C.A. Boyd Scholarship Award, 2018.
- Outstanding Academic Achievement, 2018.
- Dr. Christian W. Zauner Scholarship Award, 2017.
- Outstanding Academic Achievement, 2017.
- David & Linda McCaughey Endowed Scholarship Award, 2016.
- Outstanding Academic Achievement, 2016.

- Outstanding International Student Award, 2015.
- Outstanding Academic Achievement, 2015.
- Grinter Fellowship, 2014-2015.

Seoul National University:

- Honor and early graduation from undergraduate, 2010.
- Cum Laude, 2010.

RESEARCH SKILLS

Software and Statistical Techniques:

- MATLAB
- LabVIEW
- Processing – Java programming
- Spike2
- Sony Vegas - video editing software
- SigmaPlot - scientific data graphing and statistical analysis software
- SPSS

Hardware and Data Collection Techniques:

- Surface Electromyography
- High-density Surface Electromyography and Decomposition
- Electroencephalography
- Inertia Measurement Units
- Motion Capture
- Force Plates
- Pressure Sensitive Walkway
- Instrumented Treadmill
- Load Cells
- Position Sensors
- Pressure Sensors
- Accelerometers
- Cable-driven Locomotor Training System
- Neuromuscular Electrical Stimulation
- Transcutaneous Electrical Stimulation
- Driving Simulator
- Eye Movement Tracking
- Lingual Control Measurement

EDITORIAL BOARD

- Korean Society of Sports Biomechanics

AD HOC REVIEWER

- IEEE Transactions on Neural Systems & Rehabilitation Engineering
- Journal of NeuroEngineering and Rehabilitation
- Neurorehabilitation and Neural Repair
- IEEE Transactions on Biomedical Engineering
- Neuroscience
- Neuroscience Letters
- Journal of Motor Behavior

- Frontiers in Physiology
- Physical Therapy
- Journal of Human Kinetics
- Research Quarterly for Exercise and Sport
- Brain Sciences
- Scientific Reports
- Frontiers in Human Neuroscience
- PLOS ONE
- Experimental Brain Research
- Sports Medicine and Health Science

DEPARTMENTAL AND COLLEGE SERVICE

University of Florida:

- Undergraduate Research Award Committee, Department of Applied Physiology and Kinesiology, College of Health and Human Performance, 2018.
- President, Korean Student Association, College of Health and Human Performance, University of Florida, 2016 - 2017

University of Houston:

- Faculty Search Committee, Dept. of Health and Human Performance, 2023 - 2024