

CURRICULUM VITAE
Kristan A. Leech PhD, DPT, PT
September 3, 2026

I. BIOGRAPHICAL INFORMATION

PERSONAL INFORMATION:

School/Division	Herman Ostrow School of Dentistry of USC Division of Biokinesiology and Physical Therapy
Office Address	Center for Health Professions 1540 Alcazar St Los Angeles, CA 90089
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UNIVERSITY EDUCATION:

Professional Education or Doctoral Education

2010-2015	Ph.D. in Neuroscience Interdisciplinary Neuroscience Program Northwestern University, Chicago, IL Advisor: Dr. T. George Hornby
2007-2010	Doctorate of Physical Therapy Department of Physical Therapy College of Allied Health Professions University of Illinois at Chicago, Chicago, IL

Undergraduate Education

2003-2007	B.S. in Physiology (summa cum laude) Department of Physiology University of Arizona, Tucson, AZ
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POSTDOCTORAL TRAINING:

Training and Fellowships

2015-2019 **Postdoctoral Fellow**
Department of Neuroscience
Kennedy Krieger Institute and Johns Hopkins University, Baltimore, MD
Advisor: Dr. Amy J. Bastian

ACADEMIC APPOINTMENTS:

2019-Present **Assistant Professor**
Division of Biokinesiology and Physical Therapy
Ostrow School of Dentistry
University of Southern California

2019-Present **Director**
Gait Rehabilitation and Motor Learning Lab
University of Southern California

2019-Present **Assistant Professor (Training Faculty)**
Neuroscience Graduate Program
University of Southern California

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

Member, Society for Neuroscience (SFN)
Member, American Society for Neurorehabilitation (ASNR)
Member, American Physical Therapy Association (APTA)

II. SCHOLARLY ACTIVITIES

GRANTS AWARDED:

External Grants (Federal/Corporate/Foundation Funding)

Principal Investigator

08/2026-7/2027 **The Precise Center (P50): Precision Rehabilitation Across the Lifespan**
Precision Rehabilitation Pilot Grant
Role: Principal Investigator
Title: Cognitive Predictors of Recovery and Rehabilitation Phenotypes
Funding: \$30,000
Overall Aims: The objective of this pilot study is to determine whether cognitive impairment predicts mobility recovery phenotypes and rehabilitation utilization patterns following stroke using electronic health record data.

07/2025-06/2030 **National Institute of Child Health & Human Development (NIH/NICHD)**

Research Project Grant
Award: R01 HD115526
Role: Principal Investigator
Title: Examining mobility restrictions through the lens of post-stroke apathy
Percentage of Effort: 25%
Funding: \$3,076,901
Overall Aims: The overall objective of this award is to determine the association between post-stroke apathy and mobility as well as identify the functional connectivity signatures of post-stroke apathy.

09/2021-08/2026

National Institute on Aging (NIH/NIA)
Mentored Career Development Grant
Award: K01 AG073467
Role: Principal Investigator
Title: Evaluating cognitive impairment as a moderator of locomotor learning in older adults post-stroke
Percentage of Effort: 75%
Funding: \$628,830
Overall Aims: The overall objective of this proposal is to delineate that post-stroke cognitive impairment moderates explicit, but not implicit, locomotor learning in older adults with chronic stroke and identify the role of the dorsolateral prefrontal cortex in this relationship.

05/2025-08/2026

National Institute on Aging (NIH/NIA)
Administrative Supplement to K01 AG073467
Role: Principal Investigator
Funding: \$75,600
Overall goal: To promote research continuity and retention of NIH mentored career development (K) award recipients

04/2021-03/2023

National Institute of Child Health & Human Development (NIH/NICHD)
Early Career Research Project Grant
Award: R03
Role: Principal Investigator
Title: A novel, comprehensive approach to post-stroke gait rehabilitation
Percentage of Effort: 25%
Funding: \$ 330,000
Overall Aims: The overall objective of this grant is to determine the feasibility and optimal parameters of a combined biofeedback- and intensity-based gait training approach in persons post-stroke.

04/2022-03/2023

National Institute of Child Health & Human Development (NIH/NICHD)
Administrative Supplement to R03 to Promote Diversity in Health-Related Research
Role: Mentor (PI: Bonilla Yanez, M)
Funding: \$102,048
Overall Aims: To enhance and extend the aims of the parent grant (R03

HD104217) and support the career development of a talented research assistant.

01/2021-12/2022

Foundation for Physical Therapy Research (FPTR)

Award: Magistro Family Foundation Research Grant

Role: Principal Investigator

Title: A novel, comprehensive approach to post-stroke gait rehabilitation

Percentage of Effort: 25%

Funding: \$100,000

Overall Aims: The primary goal of the project is to investigate structural neuroimaging biomarkers that mediate inter-individual differences in the capacity of people post-stroke to use different types of gait biofeedback while walking at 1) self-selected walking speeds and 2) higher aerobic intensities

08/2013-06/2015

National Institute of Neurologic Disorders and Stroke (NIH/NINDS)

Award: NRSA F31

Role: Principal Investigator (Mentors: T. George Hornby, R. Miller)

Title: Behavioral and Molecular Responses to High-intensity Exercise in Humans with Spinal Cord Injury

Percentage of Effort: 100%

Funding: \$61,850

Overall Aims: This primary objective of this grant was to evaluate the effects of aerobic exercise intensity and pharmacological manipulation of serotonergic signaling locomotor behaviors in individuals with incomplete spinal cord injury.

Project Principal Investigator

09/2019-08/2021

National Institute for Child Health & Human Development (NIH/NICHD)

Rehabilitation Research Career Development (RRCD) Program

Award: K12 HD055929

Role: Project PI (RRCD K12 PI: D. Brown)

Percentage of Effort: 75%

Funding: \$375,000

Overall Aims: The goal of this grant is to support the career development of rehabilitation scientists who are physical and occupational therapists to increase the number of rigorously trained, extramurally competitive, and scientifically competent rehabilitation researchers. The award period was shortened due to my accepting and transitioning to an NIH K01 award in 09/2021.

09/2015-06/2019

National Institute for Child Health & Human Development (NIH/NICHD)

Award: T32 HD007414

Role: Project PI (T32 PI: A. Bastian)

Title: Research Training in Rehabilitation for Brain Injury &

Neurological Disability
Percentage of Effort: 100%
Funding: Salary Support
Overall Aims: The overall objective of this grant was to support the postdoctoral research training in medical rehabilitation research that focuses on brain injury and neurologic disability.

08/2011-07/2013

National Institute for Child Health & Human Development (NIH/NICHD)
Award: T32 HD057845
Role: Project PI (T32 PI: J. Dewald)
Percentage of Effort: 100%
Funding: Graduate student stipend support
Overall Aims: The overall objective of this grant was to train students with clinical backgrounds to become rehabilitation scientists in basic, translational, or clinical research.

Internal Grants (University Funding)

Co-Investigator, Collaborator, Consultant, Mentor

7/2025-6/2026

USC Division of Biokinesiology and Physical Therapy Seed Grant
Role: Co-Investigator (PI: J. Finley)
Title: Pilot Assessment of Mobility-related Decision-Making in People Post-Stroke
Funding: \$5,000
Overall Aims: The objective of this pilot proposal is to collect preliminary data to examine how high-intensity gait training influences the link between physical capacity and mobility-related decision-making in chronic stroke survivors.

7/2024-6/2025

USC Division of Biokinesiology and Physical Therapy Seed Grant
Role: Mentor (PI: Amelia Cain)
Title: Community mobility post-stroke
Funding: \$5,000
Overall Aims: To assess community mobility in individuals living with stroke using GPS technology.

7/2023-6/2024

USC Division of Biokinesiology and Physical Therapy Seed Grant
Role: PI
Title: Post-stroke research participant recruitment initiative
Funding: \$5,000
Overall Aims: To update and re-populate the IRB-approved database of potential research participants living with stroke.

GRANTS PENDING:

External Grants (Federal/Corporate/Foundation Funding)

Principal Investigator

01/2027-12/2028

Foundation for Physical Therapy Research

Paris Patla Physical Therapy Research Grant

Role: Principal Investigator

Title: Neural Mechanisms and Predictors of Response to High-intensity Locomotor Training After Stroke

Percentage of Effort: 15%

Funding: \$200,000

Overall Aims: To establish feedforward motor control as a mechanism underlying improvement in walking outcomes following high-intensity locomotor training after stroke and to identify cerebellar circuit integrity as a predictor of individual responsiveness to this intervention.

Co-Investigator

04/2027-03/2032

National Institute for Child Health & Human Development (NIH/NICHD)

Research Project Grant

Role: Co-Investigator (PI: G. Petzinger)

Percentage of Effort: 15%

Title: Cognition and Posterior Cerebellum in Gait Adaptation and Adaptive Learning In Early-Stage Parkinson's Disease: A Longitudinal Study Using Multimodal MRI

Funding: \$5,600,000

Overall Aim: The overall goal of the proposal is to define the cognitive and posterior cerebellar mechanisms that support adaptive locomotor learning in early-stage Parkinson's disease, and to determine whether these mechanisms predict longitudinal decline in gait adaptation and savings.

Significant Contributor

04/2027-03/2032

National Institute of Mental Health and National Institute of Neurologic Disorders and Stroke (NIH/NIMH/NINDS)

Research Project Grant

Role: Significant Contributor (PI: P. Grewal)

Title: Intermittent theta burst stimulation with Goal-directed training to Improve motivation and Engagement in Post-Stroke Apathy (IGNITE PSA)

Funding: \$250,000, plus 75% Salary Support for Dr. Grewal

Overall Aim: This project proposes to evaluate a combinatorial intervention, transcranial magnetic stimulation with a smartphone-based goal-directed training application, for remediating apathy in stroke patients and to also understand the impact of this intervention on quality of life, daily goal attainment, mobility, and caregiver burden.

Consultant

04/2027-03/2029

National Institute of Aging and National Institute for Child Health & Human Development (NIH/NIA/NICHHD)

Exploratory/Developmental Grant (R21)

Role: Consultant (PI: P. Adamczyk)

Title: Performance and Motor Learning in Goal-Directed Leg Movement in Stroke Survivors and Older Adults

Funding: \$415,175

Overall Aim: This exploratory R21 investigates how stroke and aging affect motor performance, adaptation, and reinforcement-based learning in discrete leg-reaching tasks.

PUBLICATIONS:

Single asterisk indicates direct student mentee; underline indicates senior author on publication; § denotes equal contributions.

Peer-Reviewed Journal Articles – Original Research

2026

1. Rossi C, **Leech K**, Roemmich R, Bastian AJ. (2026). Automatic learning mechanisms for flexible human locomotion. *Elife*, 13, RP101671. doi: 10.7554/eLife.101671. PMID: 41632641; PMCID: PMC12867481. (no IF due to publishing model)
2. Hernandez-Hernandez SB, **Leech KA**, Adamczyk PG. (2026). Motor learning of a novel dynamic coordination task in the lower-limb of young healthy adults. *Human Movement Science*, 105, 103433. doi: 10.1016/j.humov.2025.103433. Epub ahead of print. PMID: 41349245. (2025 IF: 1.9)
3. Sánchez N, Kuch A, Jeffcoat SN, Hooyman A, Haver-Hill A*, Bonilla Yanez M*, Holl CK*, **Leech KA**. (2026). The differential effects of fast walking speed on muscle coactivation in the paretic and non-paretic extremities post-stroke. *Neurorehabilitation and Neural Repair*, 40(2), 114-126. 15459683251387093. doi: 10.1177/15459683251387093. Epub ahead of print. PMID: 41342477. (2025 IF: 3.9)

2025

4. Kettlety SA*, Kibler G*, Hooyman A, Holl CK*, Schaefer SY, **Leech KA**. (2025). Twenty minutes of corsi block tapping task training does not improve mental rotation in adults with stroke. *Frontiers in Neurology*, 16, 1601454. <https://doi.org/10.3389/fneur.2025.1601454> (IF: 2.8)
5. Kettlety SA*, Finley JM, **Leech KA**. (2025). Within-session propulsion asymmetry changes have a limited effect on gait asymmetry post-stroke. *Journal of Neuroengineering and Rehabilitation*, 22(1), 9. doi: 10.1186/s12984-025-01553-8. PMID: 39844188; PMCID: PMC11756213. (IF: 5.2)

6. **Leech KA**, Kettlety SA*, Mack WJ, Kreder KJ, Schrepf A, Kutch JJ. (2025). Brain predicted age in chronic pelvic pain: A study by the Multidisciplinary Approach to the Study of Chronic Pelvic Pain Research Network. *Pain*, 166(5), 1060-1069.. doi: 10.1097/j.pain.0000000000003424. Epub ahead of print. PMID: 39432808. (IF: 5.5)

2024

7. Kettlety SA*, Finley JM, **Leech KA**. (2024). Visuospatial skills explain differences in the ability to use propulsion biofeedback post-stroke. *Journal of Neurologic Physical Therapy*, 48(4), 207-216. doi: 10.1097/NPT.0000000000000487. PMID: 38912856; PMCID: PMC11424264. (IF: 4.4)

2023

8. Bonilla Yanez M*, Kettlety SA*, Finley JM, Schweighofer N, **Leech KA**. (2023). Gait speed and individual characteristics are related to specific gait metrics in neurotypical adults. *Scientific Reports*, 13(1), 8069. doi: 10.1038/s41598-023-35317-y. PMID: 37202435; PMCID: PMC10195830. (IF:3.9)
9. Kettlety SA*, Finley JM, Reisman DS, Schweighofer N, **Leech KA**. (2023). Speed-dependent biomechanical changes vary across individual gait metrics post-stroke relative to neurotypical adults. *Journal of Neuroengineering and Rehabilitation*, 20(1), 14. doi: 10.1186/s12984-023-01139-2. PMID: 36703214; PMCID: PMC9881336. (IF: 5.2)

2021

10. Rossi C, Roemmich RT, Schweighofer N, Bastian AJ, **Leech KA**. (2021). Younger and late middle-aged adults exhibit different patterns of cognitive-motor interference during locomotor adaptation, with no disruption of savings. *Frontiers in Aging Neuroscience*, 13, 729284. <https://doi.org/10.3389/fnagi.2021.729284>. PMID: 34899267; PMCID: PMC8664558. (IF:4.4)
11. Reoli R, Cherry-Allen K, Therrien A, Keller J, **Leech K**, Whitt AL, **Bastian A**. (2021). Can the ARAT be used to measure arm function in people with cerebellar ataxia? *Physical Therapy*, 101(2), pzaa203. doi: 10.1093/ptj/pzaa203. PMID: 33336704; PMCID: PMC7899061. (IF:3.5)

2020

12. Song CN, Stenum J, **Leech KA**, Keller CK, **Roemmich RT**. (2020). Unilateral step training can drive faster learning of novel gait patterns. *Scientific Reports* 10(1), 18628. doi: 10.1038/s41598-020-75839-3. PMID: 33122783; PMCID: PMC7596053. (IF:3.9)
13. McHugh LV, Miller AA, **Leech KA**, Salorio C, **Martin RH**. (2020). Feasibility and utility of transcutaneous spinal cord stimulation combined with walking-based therapy for people with motor incomplete spinal cord injury. *Spinal Cord Series and Cases*, 6(1), 104. doi: 10.1038/s41394-020-00359-1. PMID: 33239606. (IF: 1)
14. Padmanabhan P, Rao KS, Gulhar S, Cherry-Allen KM, **Leech KA**, **Roemmich RT**. (2020) Persons post-stroke improve step length symmetry by walking asymmetrically. *Journal of Neuroengineering and Rehabilitation*, 17(1), 105. doi: 10.1186/s12984-020-00732-z. PMID: 32746886; PMCID: PMC7397591. (IF: 5.2)

2019

15. Rossi C, Chau CW, **Leech KA**, Statton MA, Bastian AJ. (2019). The capacity to learn new motor and perceptual calibrations develops concurrently in childhood. *Scientific Reports*, 9(1), 9322. <https://doi.org/10.1038/s41598-019-45074-6>. PMID: 31249379 (IF:3.9)
16. Roemmich RT, **Leech KA**, Gonzalez AJ, and Bastian AJ. (2019). Trading symmetry for energy cost during walking. *Neurorehabilitation and Neural Repair*, 33(8), 602-613. <https://doi.org/10.1177/1545968319855028>. PMID: 31208276 (IF: 3.9)

2018

17. **Leech KA**, Day KA, Roemmich RT, and Bastian AJ. (2018). Movement and perception recalibrate differently across multiple days of locomotor learning. *Journal of Neurophysiology*, 120(4), 2130-2137. <https://doi.org/10.1152/jn.00355.2018>. PMID: 30183471; PMC6230790 (IF: 2.1)
18. **Leech KA** and Roemmich RT. (2018). Independent voluntary correction and savings in locomotor learning. *Journal of Experimental Biology*, 221(15), jeb181826. <https://doi.org/10.1242/jeb.181826>. PMID: 29903840; PMCID: PMC6104817 (IF: 3.3)
19. Day KA, **Leech KA**, Roemmich RT, and Bastian AJ. (2018). Accelerating locomotor savings in learning: compressing four training days to one. *Journal of Neurophysiology*, 119(6), 2100-2113. <https://doi.org/10.1152/jn.00903.2017>. PMID: 29537915; PMCID: PMC6032118. (IF: 2.7)
20. **Leech KA**, Roemmich RT, and Bastian AJ. (2018). Creating flexible motor memories in human walking. *Scientific Reports*, 8(1), 94. <https://doi.org/10.1038/s41598-017-18538-w>. PMID: 29311681; PMCID: PMC5758566. (IF:3.9)

2016

21. **Leech KA** and Hornby TG. (2016). High-intensity locomotor exercise augments serum brain-derived neurotrophic factor in individuals with incomplete spinal cord injury. *Journal of Neurotrauma*, 34(6), 1240-1248. <https://doi.org/10.1089/neu.2016.4532>. PMID: 27526567; PMCID: PMC5359683 (IF: 3.9)
22. **Leech KA**, Holleran CL, Kahn J, Kinnaird CR, Hornby TG. (2016). Effects of locomotor exercise intensity on gait performance in individuals with incomplete spinal cord injury. *Physical Therapy*, 96(12), 1919-1929. <https://doi.org/10.2522/ptj.20150646>. PMID: 27313241; PMCID: PMC5131185. (IF: 3.5)
23. Leddy AL, Connolly M, Holleran CL, Hennessy PW, Woodward J, **Leech KA**, Arena RA, Roth EJ, Hornby TG. (2016). Alterations in aerobic exercise performance and gait economy following high-intensity dynamic stepping training in persons with wubacute wtroke. *Journal of Neurologic Physical Therapy*, 40(4), 239-48. doi: 10.1097/NPT.000000000000147. PMID: 27632078; PMCID: PMC5026397. (IF: 4.2)

2015

24. Holleran CL, Rodriguez KS, Echaz A, **Leech KA**, Hornby TG. (2015). Potential contributions of training intensity on locomotor performance in individuals with chronic stroke. *Journal of Neurologic Physical Therapy*, 39(2), 95-102. <https://doi.org/10.1097/NPT.0000000000000077>. PMID: 25784587. (IF: 4.4)
25. Hornby TG, Holleran CL, Leddy, AL, Hennessy PW, **Leech KA**, Connolly M, Straube DD, Lovell, L, Roth E. (2015). Feasibility of focused stepping practice during inpatient rehabilitation poststroke and potential contributions to mobility outcomes. *Neurorehabilitation and Neural Repair*, 29(10), 923-932. <https://doi.org/10.1177/1545968315572390>. PMID: 25721233 (IF: 3.9)

2014

26. **Leech KA**, Kinnaird CR, and Hornby TG. (2014). Effects of serotonergic medications on locomotor performance in humans with incomplete spinal cord injury. *Journal of Neurotrauma*, 31(15), 1334-1342. <https://doi.org/10.1089/neu.2013.3206>. PMID: 24742292; PMCID: PMC4121052. (IF: 3.9)

2013

27. Straube D, **Leech K**, Moore J, Hornby TG. (2013). Item analysis of the berg balance scale in individuals with subacute and chronic stroke. *Top Stroke Rehabilitation*, 20(3), 241-249. <https://doi.org/10.1310/tsr2003-241>. PMID: 23841972 (IF: 2.5)

2010

28. Saraf P, Rafferty MR, Kahn JH, Moore JL, Hendron K, **Leech K**, Hornby TG. (2010). Daily stepping in individuals with incomplete spinal cord injury. *Physical Therapy*, 90(2), 224-235. <https://doi.org/10.2522/ptj.20090064>. PMID: 20022997 (IF: 3.5)

Manuscripts Submitted for Publication (In Revision/Under Review)

29. Holl CK*, Bonilla Yanez M*, Finley JM, Hooyman A, **Leech KA**. Using visual biofeedback to reduce step length error at fast walking speeds is feasible after stroke. Preprint posted online June 16, 2026. <https://doi.org/10.64898/2026.06.08.26355006>. *In Revision*.
30. Lipior S*, Yu Y, Kelly ML*, Cain AR*, Schweighofer N, **Leech KA**. Better immediate declarative memory is associated with forgetting during locomotor adaptation in chronic stroke and in older adults. Preprint posted online June 26, 2026. doi:10.64898/2026.06.16.26355404. *Under Review*.
31. Kettlety SA*, Yanez MB*, Holl CK*, Stenum J, Roemmich RT, **Leech KA**. Effect of gait speed on post-stroke step length and anterior ground reaction force relative to individualized predicted values. *Research Square*, rs.3.rs-6506637. Preprint May 30, 2025. <https://doi.org/10.21203/rs.3.rs-6506637/v1>. PMID: 40502734; PMCID: PMC12154153. *Under Review*.
32. Hernandez S, **Leech KA**, Adamczyk PG. Reinforcement learning in a lower-limb reaching task with sensorimotor conflict. *Under Review*.

33. Heindel MD, Vila Diegues O, Mack W, **Leech KA**, Kutch JJ, Michener LA. Disability improvement after exercise in rotator cuff tendinopathy is associated with default mode network connectivity independent of ultrasound measures of tendon structure. *Under Review*.
34. Dhinagar NJ, Jagad C, Senthilkumar P, Thomopoulos SI, Khan M H, Liew S-L, the ENIGMA-Stroke Recovery Working Group, Banaj N, Boric MR, Boyd LA, Brodtmann A, Cassidy JM, Conforto AB, Cramer SC, Dula AN, Geranmayeh F, Gregory CM, Hordacre B, Jaywant A, Kautz SA, **Leech KA**, ... Thompson, P. M. (2026). *CALM-VLM: CALIBRATION AND SELECTIVE PREDICTION IN VISION-LANGUAGE MODELS FOR RELIABLE BRAIN MRI CLASSIFICATION*. *Neuroscience*. Preprint posted online April 14, 2026. <https://doi.org/10.64898/2026.04.10.717865> *Under Review*.

Peer-Reviewed Journal Articles – Refereed Review/Perspective

2026

1. Kelly, ML*[§], Lipior S*[§], Schaefer SY, Han SD, **Leech KA**. (2026). Standardizing the measurement and definition of post-stroke cognitive impairment: Implications for stroke recovery and rehabilitation. *Neurorehabilitation and Neural Repair*, 2026 Mar;40(3):246-257. doi: 10.1177/15459683251399133. Epub 2025 Dec 30. PMID: 41467585; PMCID: PMC12755724. (IF: 3.9)

2022

2. **Leech KA**, Roemmich RT, Gordon J, Reisman DS, and Cherry-Allen KM. (2022). Updates in motor learning: Implications for physical therapy practice and education. *Physical Therapy*, 102(1), pzab250. <https://doi.org/10.1093/ptj/pzab250>. PMID: 34718787. (IF: 3.5)

Peer-Reviewed Journal Articles – Invited Review

2017

1. **Leech KA**[§], Kim HE[§], and Hornby TG. (2017). Strategies to augment volitional and reflex function may improve locomotor capacity following incomplete spinal cord injury. *Journal of Neurophysiology*, 119(3), 894-903. <https://doi.org/10.1152/jn.00051.2017>. PMID: 29093168; PMCID: PMC5899302 (IF: 2.1)

Invited Commentaries in Peer-Reviewed Journal

2025

1. Cain AR*, **Leech KA**. (2025). From research to the clinic: Using technology to measure gait in neurorehabilitation. *Journal of Neurologic Physical Therapy*, 49(3), 171-174. <https://doi.org/10.1097/NPT.0000000000000523>. Epub 2025 May 9. PMID: 40343845. (IF: 4.4)

2022

2. **Leech KA**, Roemmich RT, Gordon J, Reisman DS, Cherry-Allen KM. (2022). Author response to Macpherson et al. *Physical Therapy*, 102(8), pzac084. <https://doi.org/10.1093/ptj/pzac084>. PMID: 35713528. (IF: 3.5)

2019

3. **Leech KA** and Holleran CL. (2019). Commentary on "practice structure and locomotor learning after stroke". *Journal of Neurologic Physical Therapy*, 43(2), 94-95.
<https://doi.org/10.1097/NPT.0000000000000263>. PubMed PMID: 30883496 (IF: 4.4)

Peer-reviewed Published Abstracts

2024

1. Kuch A, **Leech KA**, Schweighofer N, Winstein C, Sánchez N. (August 2024). The Impact of lower extremity motor impairment on post-stroke coactivation in gait. American Society of Biomechanics, ASB. Madison, WI. hal-05130132

2023

2. Haver-Hill A*, Kettlety SA*, Sanchez N, **Leech KA**. (August 2023). Comprehensive gait asymmetry metrics relate to gait speed and not motor impairment. American Society of Biomechanics.; Knoxville, TN. <https://asbweb.org/wp-content/uploads/2023-ASB-Abstract-Book.pdf>
3. Kettlety SA*, **Leech KA**. (August 2023). Visuospatial cognition predicts biofeedback-driven locomotor performance in individuals post-stroke. American Society of Biomechanics Annual Meeting.; Knoxville, TN. <https://asbweb.org/wp-content/uploads/2023-ASB-Abstract-Book.pdf>

2018

4. **Leech KA**, **Bastian AJ**. (April 2018). Dual-tasking during initial learning interferes with savings of a novel walking pattern. American Society for Neurorehabilitation. *Neurorehabilitation and Neural Repair*, 32(12), 1103.

2017

5. Roemmich RT, **Leech KA**, Gonzalez AJ, **Bastian AJ**. (April 2017). Leveraging energetics of walking to change gait symmetry. American Society for Neurorehabilitation. *Neurorehabilitation and Neural Repair*, 31(2), N18-19.

Peer-reviewed Abstracts

2026

1. Holl CK*, Schweighofer N, Finley JM, **Leech KA**. (March 2026). Combining visual biofeedback with fast walking in people with chronic stroke. American Society of Neurorehabilitation. Long Beach, CA.
2. Kelly ML*, Cain AR*, Lipior S*, Boyne P, Billinger S, Reisman DS, **Leech KA**. (February 2026). Motivation and walking speed reserve in chronic stroke survivors. Combined Sections Meeting for the APTA. Anaheim, CA.

3. Sanchez N, Kuch A, Jeffcoat S, Holl CK*, Bonilla Yanez M*, Hooyman A, **Leech KA**. (February 2026). The relationship between speed, heart rate, and coactivation during gait post-stroke. Combined Sections Meeting for the APTA. Anaheim, CA.

2025

4. Bonilla Yanez M*, Holl CH*, Stenum J, Roemmich RT, **Leech KA**. (February 2025). Actual versus predicted values of step length and peak anterior ground reaction force in people post-stroke across gait speeds. Combined Sections Meeting for the APTA. Houston, TX.

2024

5. Lipior S*, Kelly M*, Cain A*, **Leech KA**. (April 2024). Implicit locomotor learning and retention may not be related to cognition in post-stroke individuals. American Society of Neurorehabilitation Annual Meeting. San Antonio, TX.
6. Kibler G*, Holl C*, Kettlety SA*, Schaefer S, **Leech KA**. (April 2024). A single-session of corsi block tapping task training does not improve visuospatial skills in people with chronic stroke. American Society of Neurorehabilitation Annual Meeting. San Antonio, TX.
7. Cain A*, Kettlety SA*, Sánchez N, Finley JM, **Leech KA**. (April 2024). Overall gait asymmetry is associated with the metabolic cost of walking in individuals with chronic stroke. American Society of Neurorehabilitation Annual Meeting. San Antonio, TX.
8. Kettlety SA*, Finley JM, **Leech KA**. (April 2024). Within-session changes in propulsion asymmetry have minimal effect on gait quality in individuals post-stroke. American Society of Neurorehabilitation Annual Meeting. San Antonio, TX.

2023

9. Bonilla Yanez M*, Stenum J, Roemmich RT, **Leech KA**. (March 2023). Actual versus predicted values of step length and peak anterior ground reaction force in people post-stroke walking at different gait speeds. American Society of Neurorehabilitation. Charleston SC.
10. Kettlety SA*, Kelly ML*, Bonilla Yanez M*, Finley JM, **Leech KA**. (November 2023). Reducing step length and propulsion asymmetry reduced overall gait asymmetry post-stroke. Society of Neuroscience. San Diego, CA.
11. **Leech KA**, Kettlety SA*, Fan SX, Gasmin E, **Kutch JJ**. (November 2023). Chronic pelvic pain is not associated with accelerated brain aging: a 3-year longitudinal study from the MAPP Research Network. Society of Neuroscience. San Diego, CA.

2022

12. Bonilla Yanez M*, Kettlety S*, Schweighofer N, **Leech KA**. (February 2022). Informing goal setting for gait biofeedback with neurotypical gait behavior. Combined Sections Meeting of the APTA. San Antonio, TX.

2021

13. Bonilla Yanez M*, Kettlety S*, Schweighofer N, **Leech KA**. (November 2021). Informing goal setting for gait biofeedback with neurotypical gait behavior. Annual Biomedical Conference for Minority Students. Teleconference.
14. Kettlety SA*, Broderick CG*, Finley JM, Reisman DS, **Leech KA**. (February 2021). Investigating speed-dependent changes in gait kinematics: A comparison between age-matched and post-stroke gait. American Physical Therapy Association Combined Sections Meeting; Teleconference.

2019

15. **Leech KA** and Bastian AJ. (November 2019). A walk to remember: People can learn and store new locomotor memories despite increased cognitive loading. Annual Meeting of the Society for Neuroscience. Chicago, IL.
16. McHugh LV, Miller AA, **Leech KA**, Martin RH. (April 2019). Feasibility and potential efficacy of TSCS on lower extremity recovery and walking function in patients with iSCI. American Spinal Injury Association Annual Scientific Meeting. Waikiki, HI.

2018

17. Rossi C, **Leech KA**, Bastian AJ. (April 2018). Dissecting changes in perception following locomotor adaptation. Society for the Neural Control of Movement Annual Meeting. Santa Fe, NM.
18. Rossi C, **Leech KA**, Bastian AJ. (July 2018). Dissecting changes in perception following locomotor adaptation. Progress in Clinical Motor Control Annual Meeting. State College, PA.

2017

19. **Leech KA**, Day KA, Bastian AJ. (November 2017). Savings of motor and perceptual components of learning over multiple days of walking training. Annual Meeting of the Society for Neuroscience. Washington, D.C.
20. Day KA, **Leech KA**, Roemmich RT, Bastian AJ. (November 2017). Accumulation of savings over multiple days of walking training. Annual Meeting of the Society for Neuroscience. Washington, D.C.
21. **Leech KA**, Day KA, Bastian AJ. (April 2017). Motor and perceptual learning during multiday walking training. Annual Meeting for the Neural Control of Movement. Dublin, Ireland.
22. Day KA, **Leech KA**, Bastian AJ. (April 2017). Multiday timescale of saving novel walking patterns. Annual Meeting for the Neural Control of Movement. Dublin, Ireland.

2016

23. Roemmich RT, **Leech KA**, Gonzalez AJ, and Bastian AJ. (November 2016). Leveraging energetics of walking to change gait symmetry. Annual Meeting for the Society for Neuroscience. San Diego, CA.

2015

24. **Leech KA**, Kinnaird CR, Holleran CL, Kahn J, and **Hornby TG**. (February 2015). Modulation of gait performance with progressive increases in exercise intensity and after repeated exposure to high-intensity locomotor exercise in individuals with incomplete spinal cord injury. Combined Sections Meeting, American Physical Therapy Association. Indianapolis, IN.

2014

25. **Leech KA**, **Hornby TG**. (June 2014). Short- and long-term effects of locomotor exercise intensity on gait kinematics. Annual Conference of the Gait and Clinical Movement Analysis Society. Newark, DE.
26. **Leech KA**, **Hornby TG**. (February 2014). Effect of acute high-intensity locomotor exercise on serum brain-derived neurotrophic factor in humans with incomplete SCI. Combined Sections Meeting of the American Physical Therapy Association, Las Vegas, NV.

2013

27. **Leech KA**, **Hornby TG**. (November 2013). Effect of acute high-intensity locomotor exercise on serum brain-derived neurotrophic factor in humans with incomplete SCI. Neuroscience Meeting of the Society for Neuroscience. San Diego, CA.
28. **Leech KA**, Thompson CK, Kinnaird CR, **Hornby TG**. (February 2013). Effects of serotonergic agents on locomotor performance in individuals with motor incomplete spinal cord injury. Combined Sections Meeting of the American Physical Therapy Association. San Diego, CA.
29. Leddy AL, **Leech KA**, Matsubara J, Pasquinnell K, Holleran C, **Hornby TG**. (February 2013). Changes in cardiopulmonary efficiency and gait economy following 8-weeks of high intensity locomotor speed and skill training in individuals post-stroke. Combined Sections Meeting of the American Physical Therapy Association. San Diego, CA.

2012

30. **Leech KA**, Thompson CK, Kinnaird CR, **Hornby TG**. (September 2012). Effects of serotonergic agents on locomotor performance in individuals with motor incomplete spinal cord injury. Movement and Rehabilitation Sciences Training Day, Northwestern University. Chicago, IL.

Dissertations and Theses

- 2015 **Leech, KA**. Behavioral and Molecular Responses to High-intensity Exercise and Manipulation of Serotonin Signaling in Individuals with Incomplete Spinal Cord Injury. PhD Dissertation. Northwestern University.

News Releases

- 2025** “Decoding how apathy works in the body and the brain” in Motion Monthly – September 2025, Available as of 08/21/2025: <https://pt.usc.edu/news/decoding-how-apathy-works-in-the-body-and-brain/>
- 2022** “Rehabilitating Billy” USC Biokinesiology and Physical Therapy News, Available as of 09/06/2022: <https://pt.usc.edu/news/rehabilitating-billy/>
- 2021** “SC CTSI-Supported USC Scientist to Study Physical Gait Rehabilitation and Brain Health in New NIA K Grant Award” SC CTSI News, Available as of 11/01/2021: <https://sc-ctsi.org/news/sc-ctsi-supported-usc-scientist-to-study-physical-gait-rehabilitation-and-brain-health-in-new-nia-k-grant-award>
- 2021** “Combining two walking therapies to help stroke survivors,” USC News, Available as of 01/19/2021: <https://pt.usc.edu/2021/01/12/combining-two-walking-therapies/>
- 2021** “Combining Two Walking Therapies For Stroke Recovery” Science Blog, Available as of 01/20/2021: <https://scienceblog.com/520604/combining-two-walking-therapies-for-stroke-recovery/>

MAJOR PUBLIC PRESENTATIONS:

Invited, International

2022

1. **Leech KA.** (February 2022). Updates in Motor Learning: Implications for Physical Therapy Practice. Clinical Meeting. Cereneo Center for Neurology and Rehabilitation. Weggis, Switzerland.
2. **Leech KA.** (December 2022). Speed- and biofeedback-dependent changes in gait biomechanics post-stroke. Lake Lucerne University Institute. Virtual Presentation in Vitznau, Switzerland.

Invited, National

2024

3. **Leech KA.** (November 2024). Launching your research career through mentoring and community. Kennedy Krieger Institute. Baltimore, MD.
4. **Leech KA.** (June 2024). Updates in motor learning: Implications for rehabilitation. University of Pennsylvania. Philadelphia, PA.

2023

5. **Leech KA.** (October 2023). Speed- and biofeedback-dependent changes in walking after stroke. Medical University of South Carolina. Charleston, SC.

6. **Leech KA.** (April 2023). Speed- and biofeedback-dependent changes in gait biomechanics post-stroke. Arizona State University. Phoenix, AZ.

2022

7. **Leech KA.** (November 2022). Speed- and biofeedback-dependent changes in gait biomechanics post-stroke. Emory University. Atlanta, GA.

2021

8. **Leech KA.** (March 2021). Learning during walking through sensorimotor adaptation. Rehabilitation Science Seminar Series. Creighton University. Teleconference.
9. **Leech KA.** (March 2021). Learning during walking through sensorimotor adaptation. Kinesiology Graduate Student Seminar. University of Wisconsin-Madison. Teleconference.

2020

10. **Leech KA.** (October 2020). Creating flexible motor memories during human walking. Kinesiology Journal Club. University of Wisconsin-Madison. Teleconference.

2018

11. **Leech KA.** (February 2018). Creating flexible motor memories during human walking. Neurorehabilitation Seminar. University of Southern California. Los Angeles, CA.

2016

12. **Leech KA.** (April 2016). Functional training panelist in “progress in research from the SCI Model Systems (SCIMS): An interactive discussion on future directions” American Spinal Injury Association 2016 Annual Scientific Meeting, Pre-Conference meeting. Philadelphia, PA.
13. **Leech KA.** (April 2016). Need for speed?: Physiological rationale for higher intensity exercise in motor incomplete SCI. American Spinal Injury Association 2016 Annual Meeting. Philadelphia, PA.

Invited, State/Regional/Local

2023

14. **Leech KA.** (April 2023). Updates in motor learning: Implications for the future of neurorehabilitation. Neurorehabilitation: Creating a vision for the future. University of Southern California. Los Angeles, CA.

2018

15. **Leech KA.** (May 2018). Creating flexible motor memories during human walking. Rehabilitation Science Research Seminar. University of Maryland. Baltimore, MD.

2016

16. **Leech KA.** (October 2016). Recovery of walking after SCI. Resident Physician Didactic Module: Spine, Department of Physical Medicine and Rehabilitation, Johns Hopkins University. Baltimore, MD.

2015

17. **Leech KA.** (August 2015). Blood, spit, and tears: Evaluating the behavioral and molecular effects of high intensity exercise in people with incomplete spinal cord injury. International Center for Spinal Cord Injury Clinical Seminar, Kennedy Krieger Institute. Baltimore, MD.
18. **Leech KA.** (October 2015). High-intensity locomotor exercise augments serum BDNF expression in individuals with incomplete spinal cord injury. NUIN Small Talks, Northwestern University. Chicago, IL.

2014

19. **Leech KA.** (April 2014). Augmentation of serum brain-derived neurotrophic factor with high-intensity locomotor exercise in humans with incomplete SCI. Movement and Rehabilitation Science 2014 Training Day, Northwestern University, Chicago, IL.

2013

20. **Leech KA.** (August 2013). Blood, spit, and tears: The search for biomarkers of neuroplasticity. NUIN Annual Retreat, Northwestern University, St. Charles, IL.
21. **Leech, KA.** (September 2013). Behavioral and molecular responses to high-intensity exercise in humans with incomplete spinal cord injury. Chicago Biomedical Consortium Scholars Exchange. Chicago, IL.

Refereed, International

2022

1. Kettlety SA*, Kelly ML*, Bonilla Yanez M*, **Leech KA.** (August 2022). Comparing biofeedback paradigms to reduce kinematic impairment post-stroke: Preliminary data. North American Congress on Biomechanics. Ottawa, Canada.

2013

2. **Leech KA** and Hornby TG. (November 2013). Blood, spit, and tears: The search for biomarkers of neuroplasticity. Neurohike, University of Calgary, Calgary, AB, Canada.

Refereed, National

2026

1. Smith AC, Weber K, **Leech KA.** (February 2026). The ins and outs of neurorehabilitation: Afferent and efferent insights and strategies for neurorecovery. Combined Sections Meeting of the American Physical Therapy Association. Anaheim, CA

2. **Leech KA**, Schaefer SY, Fritz NE, Monaghan P. (February 2026). Two flints make a fire: Evidence-based utility of integrating cognition into physical therapy practice. Combined Sections Meeting of the American Physical Therapy Association. Anaheim, CA

2025

3. **Kantak S**, Weissman D, Bhatt T, Pradhan S, **Leech KA**. (February 2025). To err is divine: Harnessing the therapeutic role of error in neurologic physical therapy. Combined Sections Meeting of the American Physical Therapy Association. Houston, TX.

2024

4. **French MA**, Butera K, Pozzi F, **Leech KA**, Schaefer SY. (February 2024). Trainee to faculty: Navigating life as a junior faculty member in a research-intensive institution. Combined Sections Meeting of the American Physical Therapy Association. Boston, MA.

2023

5. **Hornby TG**, Reisman DS, **Leech KA**, Holleran CL. (February 2023). Combining motor-learning principles with high-intensity training to enhance locomotion post-stroke: Identifying the skill of gait-training. Combined Sections Meeting of the American Physical Therapy Association. San Diego, CA.
6. Kettlety SA*, **Leech KA**. (August 2023). Visuospatial cognition predicts biofeedback-driven locomotor performance in individuals post-stroke. American Society of Biomechanics Annual Meeting. Knoxville, TN.

2022

7. **Mikkelsen P**, Rowley KM, Havens K, Krause L, **Leech KA**. (February 2022). Leaning into discomfort: A tiered approach to engaging faculty and staff who identify as white and non-black people of color in exploring anti-racism, equity, diversity, and inclusion. Combined Sections Meeting of the APTA. San Antonio, TX.

2020

8. **Leech KA**, Reisman DS, Cherry-Allen KM, Roemmich RT. (February 2020). What we've learned about motor learning: Updates in motor learning and clinical applications. Combined Sections Meeting of the American Physical Therapy Association. Denver, CO.

2016

9. **Leech KA** Roemmich RT, and **Bastian AJ**. (April 2016). Creating flexible motor memories during human walking. Annual Meeting for the American Society for Neurorehabilitation. San Diego, CA.

2014

10. **Leech KA**, Kinnaird CR, Holleran CL, Kahn J, **Hornby TG**. (November 2014). Immediate and sustained effects of high-intensity locomotor practice on gait performance in individuals with

incomplete spinal cord injury. Society for Neuroscience Nanosymposium Presentation, Washington, DC.

Refereed, State/Regional/Local

11. Kettlety SA*, Kelly ML*, Bonilla Yanez M*, **Leech KA**. (March 2022). Comparing biofeedback paradigms to reduce kinematic impairment post-stroke: Preliminary data. Herman Ostrow School of Dentistry Research Day. Los Angeles, CA.
12. **Rowley KM**, Havens K, Krause L, Mikkelsen P, **Leech KA**. (March 2021). Leaning into Discomfort: A tiered approach to engaging faculty and staff who identify as white and non-black people of color in exploring anti-racism, equity, diversity, and inclusion. USC Diversity Equity and Inclusion Week. Teleconference.
13. Kettlety SA*, Finley JM, Reisman DS, **Leech KA**. (March 2021). Investigating speed-dependent changes in gait kinematics: A comparison between age-matched and post-stroke gait. Herman Ostrow School of Dentistry Research Day. Los Angeles, CA. Teleconference.
14. **Leech KA**, Joseph S, Hankard J, and Ginoza L. (October 2021). Updates in motor learning: Implications for physical therapy practice and education. Annual Meeting of the California Physical Therapy Association. Teleconference.
15. **Leech KA**[§] and Cherry-Allen K[§]. (March 2017). Mechanisms of motor learning and translation into clinical practice. APTA of Maryland Mini Combined Sections Meeting. Westminster, MD.

HONORS, AWARDS, FELLOWSHIPS:

2026	Award , Eugene Michels New Investigator Award from the American Physical Therapy Association
2024	Award , Rehabilitation Research Experience for Medical Students Program Award, Association of Academic Physiatrists
2024	Honor , Commendation for Excellence in Research, Division of Biokinesiology and Physical Therapy at USC
2023	Award , Rehabilitation Research Experience for Medical Students Program Award, Association of Academic Physiatrists
2022 – 2023	Award , NIH Loan Repayment Program Award Competitive Renewal, Clinical Research, NICHD
2020 – 2022	Award , NIH Loan Repayment Program Award Competitive Renewal, Clinical Research, NICHD
2020	Award , ASNR Award to attend Training in Grantsmanship for Rehabilitation Research Workshop
2020	Mentee , Training in Grantsmanship for Rehabilitation Research Workshop
2018 – 2020	Award , NIH Loan Repayment Program Award, Clinical Research, NICHD

2014 – 2015	Award , Promotion of Doctoral Studies Scholarship II, Foundation for Physical Therapy Research
2014	Award , NUIN Student Travel Award
2014	Award , Gait and Clinical Movement Analysis Society Best Poster Award
2014	Award , Gait and Clinical Movement Analysis Society Student Travel Award
2013 – 2014	Award , Promotion of Doctoral Studies Scholarship II, Foundation for Physical Therapy Research
2012 – 2014	Award , Chicago Biomedical Consortium Scholar
2013 – 2013	Award , Promotion of Doctoral Studies Scholarship I, Foundation for Physical Therapy
2012	Award , Barnes-Leahy Award, Foundation for Physical Therapy
2010 – 2011	Award , Florence P Kendall Scholarship, Foundation for Physical Therapy
2010	Award , College of Applied Health Sciences Achievement Award, University of Illinois at Chicago
2009	Award , Donna K Roach Award, University of Illinois at Chicago

III. TEACHING ACTIVITIES

COURSES PRESENTED OR DEVELOPED:

University Courses Developed:

Spring 2020 –	PT569: Fundamentals of Neuroscience (4 units)
Roles:	2020 Hybrid lead; Live Session instructor 2021 Co-director; Live Session instructor 2022 Co-director 2023- Director
Summary:	Neuroscience, taught from a basic science perspective, for second-year Doctor of Physical Therapy students in the USC DPT program. As Hybrid Lead for 2019-2020 academic year, I developed and delivered the live session curriculum for the hybrid format of this course. I incorporated principles of active learning for adult learners and worked closely with live session instructors to prepare them to deliver the content to the students in the Hybrid Pathway (44 students). In the 2020-2022 academic years, I became co-director for the course. I developed an Instructor Guide for the course and lead a team of 5 live session instructors and 2 teaching assistants to deliver the material to students in both the Residential and Hybrid Pathways of our DPT program (144 students). In addition, I developed course content related to the neuroscience of implicit bias and the regulation of implicit bias through conscious awareness to support the

Division-wide initiatives related to Equity, Diversity, and Inclusion. In the 2022-2023 academic year, I became the sole course director for PT569. In this role, I will deliver 40 hours of live, in-person material to the residential pathway and oversee the delivery of the curriculum in the hybrid pathway. I have also developed a 2-year plan to significantly revise the curriculum for both pathways to 1) include both rigorous basic science concepts and their relevant applications to the field of physical therapy and 2) promote health justice, equity, diversity, and inclusion.

University Courses Presented:

2021 – present	BKN 550: Neurobehavioral Basis of Movement (4 units) Roles: Guest lecturer Summary: I have contributed to this course with an annual lecture titled: “Prefrontal Cortex and Cognition in Motor Learning”
Fall 2020, 2025	PT534: Neuroanatomy (4 units) Role: Clinical Skills Lab Faculty Summary: I have contributed to this course for students in the DPT program by reviewing, mentoring, and assessing neurologic testing skills.
Fall 2023	BKN559: Readings in Biokinesiology Role: Faculty Advisor for Matt Heindel Summary: Independent study focused on the review, critical analysis, and synthesis of current scientific literature pertinent to clinical trial study design and behavioral experimentation.
Summer 2023	BKN559: Readings in Biokinesiology Role: Faculty Advisor for Isaiah Lachica Summary: Independent study focused on the review, critical analysis, and synthesis of current scientific literature pertinent to the neural control of locomotion.
Spring 2021	BKN559: Readings in Biokinesiology Role: Faculty Advisor for Kaylie Zapanta Summary: Independent study focused on the review, critical analysis, and synthesis of current scientific literature pertinent to the interaction between cognitive and motor impairments in Parkinson’s Disease.

Continuing Education Courses Developed:

- 2024 **Leech KA.** Updates in motor learning: Implications for Stroke Rehabilitation. Los Angeles Stroke Rehabilitation Network. University of Southern California. November 2024. Los Angeles, California.
- 2024 Holleran CL, **Leech KA.** Integration of motor learning principles into high-intensity grain training. Institute for Knowledge Translation. Teleconference. April 2024.

2015 **Leech KA** and Hornby TG. Increasing biomarkers of neuroplasticity with high-intensity exercise in individuals with incomplete SCI. Annual interdisciplinary Spinal Cord Injury Course, Rehabilitation Institute of Chicago Academy. Chicago, IL.

MENTORING ACTIVITIES:

Postdoctoral Fellows Mentored:

2026 – present **Yiran Jiao, PhD**
Research Interests: Post-stroke walking rehabilitation, biomechanical analyses

Graduate Students Mentored:

PhD Students, Primary Mentor:

2026 – present **Maryana Bonilla Yanez, PT, DPT**
Current Position: PhD Student in Biokinesiology and Physical Therapy
Research Interests: Motor learning after stroke

2024 – present **Sylwia Lipior, MS**
Current Position: PhD Student in Biokinesiology and Physical Therapy
Research Interests: Cognitive load of motor learning in older adults

2023 – present **Amelia Cain, DPT, PT, NCS**
Awards: 2024 BKN&PT Division Research Grant
2025 Promotion of Doctoral Studies-I Scholarship: Foundation for Physical Therapy Research
2026 National Institutes of Health Loan Repayment Program Award
Current Position: PhD Candidate in Biokinesiology and Physical Therapy
Research Interests: Quantifying community mobility of people with stroke

2023 – present **Christina Holl, DPT, PT, NCS**
Awards: 2024 Promotion of Doctoral Studies-I Scholarship: Foundation for Physical Therapy Research
2025 Promotion of Doctoral Studies-I Scholarship: Foundation for Physical Therapy Research
2026 Best Pre-Candidacy Poster Award, Research Day for Ostrow School of Dentistry, USC
2026 Promotion of Doctoral Studies-II Scholarship: Foundation for Physical Therapy
Current Position: PhD Student in Biokinesiology and Physical Therapy
Research Interests: Feedforward motor control post-stroke

2021 – present **Morgan Kelly, DPT, PT**
Awards: 2021-2022 Graduate Student Provost Fellowship
2022 Promotion of Doctoral Studies-I Scholarship: Foundation for Physical Therapy Research
2023 Promotion of Doctoral Studies-I Scholarship: Foundation for Physical Therapy Research
2026 Best Post-Candidacy Poster Award, Research Day for Ostrow School of Dentistry, USC

Current Position: PhD Candidate in Biokinesiology and Physical Therapy
Research Interests: Quantifying post-stroke apathy and its association with motor behavior

2019 – 2024 **Sarah Kettlely, Ph.D.**
Awards: 2021 Ostrow School of Dentistry Research Day Top Poster Award
Current Position: Postdoctoral Fellow at Johns Hopkins University
Dissertation: The effects of fast walking, biofeedback, and cognitive impairment on post-stroke gait.

PhD Students, Committee Member/Chair:

2023 – present **Mahir Kahn, PhD Candidate at USC** (Committee Chair)
Research Interests: Post-stroke neuroimaging metrics of brain age

2022 – 2025 **Matt Heindel, PhD Candidate at USC**
PhD in Biokinesiology and Physical Therapy, Received from USC, Dec 2025
Dissertation: Dual Dysfunction: Central and Peripheral Mechanisms of Symptom Severity and Recovery in Rotator Cuff Tendinopathy
Current Position: Postdoctoral Fellow, Duke University, PI: Katherine Martucci, PhD

2023 – 2025 **Stephanie Hernandez Hernandez, PhD**
PhD in Engineering, Received from University of Wisconsin, July 2025
Dissertation: Understanding motor learning principles in the lower limbs using a haptic robot

2023 – 2025 **Tara Cornwell, PhD**
PhD in Biomedical Medical Engineering, Received from USC, March 2025
Dissertation: Proactive and reactive control of dynamic balance during walking in people with and without stroke.
Current position: Research Scientist at Exponent

2022 – 2025 **Isaiah Lachica, PhD**
PhD in Biokinesiology and Physical Therapy, Received from USC, April 2025
Dissertation: Investigating the influence of aging and reinforcement on the speed-accuracy trade-off during precision walking
Current Position: Postdoctoral Fellow, Emory University, PI: Lena Ting, PhD

2022 – 2025 **Angelo Bartsch, PhD**
PhD in Biokinesiology and Physical Therapy, Received from USC, April 2025
Dissertation: Vestibular contributions to voluntary reaching movements and post-stroke motor impairment
Current Position: Faculty, Universidad de Valparaiso

2021 – 2023 **Octavio Marin Pardo, PhD**
PhD in Biomedical Medical Engineering, Received from USC, February 2023
Dissertation: Development and implementation of a modular muscle computer interface for personalized motor rehabilitation after stroke
Current Position: Research Scientist, USC

2021 – 2023 **Kayle Zapanta, PhD**
PhD in Biokinesiology and Physical Therapy, Received from USC, June 2023

Dissertation: Exploring the gut-brain axis in Parkinson's Disease and the influence of physical fitness to restore gut health

Current Position: Postdoctoral Fellow, Zymo Research.

- 2021 – 2023 **Pouria Nozari, PhD**
PhD in Biomedical Medical Engineering, Received from USC, June 2023
Dissertation: Model-based approaches to objective inference during steady-state and adaptive locomotor control
Current Position: Vice President Risk Strats and Data Science, Goldman Sachs
- 2020 – 2025 **Ryan Notovny, PhD**
PhD in Neuroscience, Received from USC, April 2025
Dissertation: Re-evaluating neuromotor control strategies through task-based analysis of motor modules
- 2019 – 2022 **Julia Juliano, PhD**
PhD in Neuroscience, Received from USC, March 2022
Dissertation: Motor learning in virtual reality in healthy individuals and after stroke
Current Position: UX Researcher, HARMAN International.
- 2019 – 2021 **Chang Liu, PhD**
PhD in Biokinesiology and Physical Therapy, Received from USC, April 2021
Dissertation: Understanding the contributions to impaired reactive balance control during walking for people post-stroke
Current Position: Tenure-track faculty at the University of Illinois at Chicago

Doctor of Physical Therapy Students, Faculty Mentor:

- 2026 – 2029 **Clark Hill, Miyeko Taskey**
DPT Faculty Mentorship Program
- 2025 – 2027 **John Schroeder, Rochelle Kohanteb**
DPT Faculty Mentorship Program
- 2024 – 2026 **Maryana Bonilla Yanez**
DPT Faculty Mentorship Program, Research Assistant Student Worker
- 2023 – 2025 **Sophy Zhao**
DPT Faculty Mentorship Program
- 2022 – 2024 **Caitlin Fu, Venelia Margoosian, Ebonee Stephens**
DPT Faculty Mentorship Program
- 2021 – 2023 **Leanna Mossesian**
Research Assistant Student Worker
- 2020 – 2022 **Elisa Vong, Caitlin McCurley**
DPT Faculty Mentorship Program

Medical Students, Research Rotation Mentorship:

- 2024 **Yeager George**, Rehabilitation Research Experience for Medical Students, USC
- 2023 **John MacAulay**, Rehabilitation Research Experience for Medical Students, LSU

Master's Students, Advising and Research Mentorship:

2024 – 2025	Aria Haver-Hill , Biomedical Engineering, USC
2022 – 2024	Sylwia Lipior , Biokinesiology and Physical Therapy, USC <i>Awards:</i> USC Division of Biokinesiology and Physical Therapy MS Outstanding Research Award

Undergraduate Students:

Summer 2026	Julien Schweighofer , Computer Science, University of California, Berkeley
Summer 2026	Lucas Schweighofer , Mechanical Engineering, UCLA
2025 – 2026	Veronica Rosado Silva , Biomedical Engineering, USC <i>Awards:</i> CURVE Scholar, USC
2022 – 2024	Caitlin Sheets , Biomedical Engineering, USC <i>Awards:</i> CURVE Scholar, USC
2022 – 2024	Aria Haver-Hill , Biomedical Engineering, USC <i>Awards:</i> WiSE Student Travel Grant
2021 – 2023	Maryana Bonilla Yanez , Human Biology and Data Science, USC <i>Awards:</i> 2021 Annual Biomedical Research Conference for Minority Students Best Poster Award
2021	Sydney Williams , USC JumpStart Summer Rotation
2019 – 2020	Sarah Sternbach , Undergraduate Neuroscience Program, USC <i>Awards:</i> Summer 2019 Provost Fellowship Fall 2019 Provost Fellowship Spring 2020 Provost Fellowship

High school Students Mentored:

2022	Lincoln Jarvis Sneha Argawal
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IV. ADMINISTRATIVE AND SERVICE ACTIVITIES

UNIVERSITY SERVICE:

Division of Biokinesiology and Physical Therapy

2026 – present	Member , Tenure-track faculty search committee
2026 – present	Member , Biokinesiology MS Program Admissions Committee
2025 – present	Member , Awards Committee
2023	Co-organizer , Biokinesiology PhD Program Interviews and Campus Visit
2022 – 2023	Member , Planning Committee for the Neurorehabilitation: Creating a Vision for the Future Annual Conference

2021 – 2022	Director , Summer Research Seminar Series for Undergraduate Research Assistants in the USC JumpStart Summer Rotation Program
2020 – 2022	Member , Faculty Support Subcommittee of the Community Engagement Council
2020 – 2022	Facilitator , Building Community Discussion Series
2020	Member , Health and Safety Task Force (COVID-19)
2019 – present	Member , Biokinesiology PhD Program Admissions Committee
2019 – present	Reviewer , Doctor of Physical Therapy program applications
2019 – present	Co-Director , Computational Motor Control and Learning Journal Club

University of Southern California

Spring 2021	Research Career Panelist , USC Pre-Physical Therapy Conference. Los Angeles, CA.
Fall 2020	Physical Therapy Panelist , Comparing Physical and Occupational Therapy Meeting. Pre-Physical and Occupational Therapy Clubs at USC and UCLA. Los Angeles, CA.

EDITORIAL AND NATIONAL GRANT REVIEW ACTIVITIES:

Editorial Board

2024 – present	<i>Journal of Neurologic Physical Therapy</i>
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Scientific Review for Journals

2022 – present	<i>Neuroscience</i>
2022 – present	<i>Frontiers in Human Neuroscience</i>
2021 – present	<i>Brain Sciences</i>
2020 – present	<i>Transactions on Neural Systems and Rehabilitation Engineering</i>
2020 – present	<i>Neurorehabilitation and Neural Repair</i>
2019 – present	<i>Gait & Posture</i>
2018 – present	<i>Journal of Neurophysiology</i>
2017 – present	<i>Journal of Neurologic Physical Therapy</i>
2016 – present	<i>Physical Therapy Journal</i>

National Grant Review

2026	National Institutes of Health (NIH) Center for Scientific Review Motor Function, Speech, and Rehabilitation Study Section
2025	National Institutes of Health (NIH) Loan Repayment Program Review Panel

2023 National Institutes of Health (NIH)
 Center for Scientific Review
 Musculoskeletal Rehabilitation Sciences Study Section

2022 National Institutes of Health (NIH)
 Center for Scientific Review
 Acute Neural Injury and Epilepsy Study Section

OTHER SERVICE TO PROFESSIONAL ORGANIZATIONS:

2019 – present **Conference abstract reviewer**, Academy of Neurologic Physical Therapy
2025 **Conference abstract reviewer**, Advances in Motor Learning and Motor Control

V. PROFESSIONAL LICENSURE

Physical Therapist, State of California, Physical Therapy Board of California
Active License: 296626

Physical Therapist, State of Maryland, Maryland Dept. of Health and Mental Hygiene
Inactive License: 25570

Physical Therapist, State of Illinois, IDFPR, Division of Professional Regulation
Inactive License: 070017896