Curriculum Vitae - Daniel S. Peterson, PhD

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My work aims to improve our understanding of why people fall, and ways to reduce fall frequency. To this end, our lab 1) characterizes balance deficits, 2) assesses neural control of balance, & 3) develops & assesses fall-prevention interventions. We engage an interdisciplinary team to ensure our work is guided by a theoretical framework and is translatable to the clinical community. Our goals of reducing falls and improving quality of life support the mission of the College of Health Solutions to “make meaningful contributions to the health and well-being of society".

EMPLOYMENT & EDUCATION

Employment

Current positions

Associate Professor: Arizona State University — 2022 – Present
College of Health Solutions
Director: Gait and Balance Disorders Laboratory

Affiliate Faculty: Arizona State University — 2016 – Present
School of Biological and Health Systems Engineering

Associate Faculty: Arizona State University — 2022 – Present
Biodesign Institute and the ASU-Banner Neurodegenerative Research Center

Research Affiliate: Karolinska Institute — 2024 – Present
Department of Neurobiology, Health Sciences and Society

Research Associate: Jonkoping University — 2024 – Present
Institute of Gerontology, School of Health and Welfare

Adjunct Instructor: University of Utah — 2015 – Present
Program in Physical Therapy

Previous positions

Assistant Professor: Arizona State University — 2016 – 2022
College of Health Solutions

Health Science Specialist; Phoenix VA Health Care System — 2018 – 2023
Research Division

Postdoctoral Researcher: Oregon Health & Science University — 2013 – 2016
Department of Neurology

Health Science Specialist: Salt Lake City & Portland VA Medical Centers — 2014 – 2016
Research Division

Research Fellow: Steadman Philipon Research Foundation — 2008 – 2009
Biomechanics Laboratory

Education

Doctor of Philosophy – Movement Science — 2009 – 2013
Washington University in St. Louis

Master of Science – Clinical Investigation — 2011 – 2013
Washington University in St. Louis

Master of Science – Kinesiology (Biomechanics) — 2006 – 2008
Pennsylvania State University

Bachelor of Science – Exercise and Sport Sciences — 2002 – 2006
University of Florida

FUNDING

Current Funding (Total= 5; as PI or Co-PI= 3)

1) **Funding Source / Grant #:** National Institutes of Health / R01AG086533
   Mechanism: R01
   Role: PI
   Total Cost: $3,362,930
   Title: Identifying Targets for Fall-prevention Rehabilitation in People with Parkinson's Disease
   Purpose: Establish the clinically targetable aspects of balance that predict falls in people with PD
   Dates of Award: 2024-2029

2) **Funding Source / Grant #:** Michael J Fox Foundation MJFF - 026609
   Mechanism: Investigator Initiated Award
   Role: Co-PI (Co-PIs- Longhurst- St. Louis University; Franzen- Karolinska Institute)
   Total Cost: $304,483
   Sub Award to ASU: $44,493
   Title: Leveraging alignment of postural control perception and ability to understand real-world gait in Parkinson's disease
   Purpose: Relate daily life mobility to misalignment between actual and perceived mobility.
   Dates of Award: 2025-2027

3) **Funding Source / Grant #:** Michael J Fox Foundation MJFF- 024692
   Mechanism: Investigator Initiated Award
   Role: Co-I (PI- Mancini; Oregon Health & Science University)
   Total Cost: $1,136,851
   Sub Award to ASU: $365,577
   Title: TURN-IT:A novel intervention program to improve turning in people with PD and freezing of gait
   Purpose: To assess the effectiveness of turning rehabilitation on freezing in people with PD
   Dates of Award: 2024-2027

4) **Funding Source / Grant #**: ASU-Mayo Seed Grant / N/A
   Mechanism: Investigator Initiated Award
   Role: PI (Co-PI: Mehta)
   Total Cost: $100,000
   Title: Quantitative Gait Analysis as a novel diagnostic tool and clinical biomarker for Atypical Parkinsonian Syndromes
   Purpose: Utilize machine learning to identify gait biomarkers for typical and atypical Parkinson's disease
   Dates of Award: 2023-2025

5) **Funding Source / Grant #**: National Institutes of Health / P50
   Mechanism: P50
   Role: Scientific Consultant (PI- Liew)
   Title: Data Science and Analytics for Precision Rehabilitation (DAPR) Center
   Purpose: Utilize machine learning to identify gait biomarkers for typical and atypical Parkinson's disease
   Dates of Award: 2026-2030

Completed Funding (Total=14; as PI or Co-PI= 10)

1) **Funding Source / Grant #**: National Institutes of Health / N/A
   Mechanism: a2collective Pilot Award
   Role: Co-PI (Co-PI-Denney; Tufts University)
   Total Subaward (ASU) Cost: $73,777
   Title: Novel pressure-sensing insoles to better predict and treat falls in home and clinical settings
   Purpose: Serves to validate novel insoles for identifying metrics for balance and fall prevention
   Dates of Award: 2022-2023

2) **Funding Source / Grant #**: ASU Center for Innovation in Healthy and Resilient Aging / N/A

Mechanism: Investigator Initiated Award
Role: Co-PI (Co-PI: Lee)
Total Cost: $45,000
Title: Assessment and Rehabilitation of Upright Standing Balance to Avoid Falls in people with PD
Purpose: Assess the relationship between balance outcomes and prospectively-collected falls in PD
Dates of Award: 2022-2023

3) **Funding Source / Grant #:** U.S. Dept. of Veterans Affairs / RX002341
Mechanism: Career Development Award (CDA-2)
Role: PI
Total Direct Cost: $721,117
Title: "Protective Step Training in People with Multiple Sclerosis"
Purpose: Understand whether long-term protective step training can improve protective stepping in people with MS; identify predictors of responsiveness to perturbation training.
Dates of Award: 10/2018 – 10/2024

4) **Funding Source**: Michael J Fox Foundation
Role: PI
Total Cost: $409,013
Title: Protective Step Training in People with PD and Postural Disturbances
Purpose: Understand the impact of perturbation training on people with PD who are at risk for falls.
Dates of Award: 2019 – 2021

5) **Funding Source / Grant #**: Northern Arizona University / N/A
Mechanism: Seed Grant Program
Role: Co-PI (Co-PI: Denney, Northern Arizona University)
Total Cost: $2,000
Title: Assessing the use of laser shoes for freezing of gait in people with Parkinson's disease
Purpose: Characterize the impact of a new technology to improve walking in people with PD
Dates of Award: 2019-2021

6) **Funding Source / Grant #**: College of Health Solutions, ASU / N/A
Mechanism: Jumpstart Seed Grant
Role: PI
Total Cost: $18,000*
Title: The Impact of Dopamine on Attention in Parkinson's Disease
Purpose: Characterize how attentional control varies across dopaminergic states in people with PD
Dates of Award: 2019-2022

7) **Funding Source / Grant #:** National Multiple Sclerosis Society / N/A
Mechanism: Investigator-Initiated Pilot Award
Role: Co-PI (PI of ASU subcontract; Co-PI: Fling; Colorado State University)
Total Cost: $40,000
Subaward Cost to ASU / DSP: $13,607 / $13,607
Title: Interhemispheric communication in people with MS: Implications for balance and mobility
Purpose: Investigate how interhemispheric communication is altered in people with MS, and how this may impact motor performance and learning.
Dates of Award: 2018 – 2019

8) **Funding Source / Grant #:** National Multiple Sclerosis Society (NMSS) / RG-1701-26763
Mechanism: Investigator Initiated Research Grant
Role: Co-I (PI of ASU subcontract; Project PI: Dibble; University of Utah)
Total Cost: $458,000
Subaward Cost to ASU / DSP: $32,880 / $32,880
Title: Gaze and postural stability in persons with MS at risk for falls: Characterizing deficits and response to treatment.
Purpose: The purpose of this RCT is to characterize the impact of task specific gaze and postural stability training on balance, dizziness, and vestibular function in people with MS.
Dates of Award: 2017-2020

9) **Funding Source / Grant #**: Lundbeck LLtC / N/A

Mechanism: Investigator Initiated Award
Role: Co-I (PI: Lieberman; Barrow Neurological Institute, AZ)
Total Cost: $350,000
Subaward Cost to ASU / DSP: $65,000 / $16,250
Title: Effect of L-DOPS on falls among Parkinson's disease patients with orthostatic hypotension
Purpose: Understand the effect of anti-hypotension medication on balance in people with PD
Dates of Award: 2018-2020

10) **Funding Source / Grant #:** Center for Innovation in Healthy & Resilient Aging
Mechanism: Seed Grant
Role: Co-I (PI: Krishnamurthi; ASU [CONHI] faculty)
Total Direct Cost: $50,000*
Title: Developing a real-time fall risk assessment in Parkinson's disease by continuous monitoring of free-living activities
Purpose: To evaluate the predictive capacity of real-time, free-living activities for fall prediction in people with Parkinson's disease.
Dates of Award: 2019 – 2021

11) **Funding Source / Grant #**: Arizona State University & Mayo Medical Center / N/A
Mechanism: Pilot Seed Grant
Role: PI
Total Cost: $50,000
Title: Dual-task Perturbation Training: A novel intervention for fall prevention in people with PD
Purpose: Determine whether people with Parkinson's disease can improve protective stepping over 1-day of practice while attention is divided (i.e. under dual tasking scenario).
Dates of Award: 2018 – 2019

12) **Funding Source / Grant #:** National Multiple Sclerosis Society / PP-1512-07101
Mechanism: Investigator Initiated Pilot Grant
Role: Co-I (PI of ASU subcontract; PI: Foreman; University of Utah)
Total Cost: $39,640
Subaward Cost to ASU / DSP: $16,200 / $16,200
Title: Compensatory Stepping in People with Multiple Sclerosis
Purpose: The purpose of this study is to determine the degree to which people with multiple sclerosis **c**an improve protective stepping over a short-term (1-day) practice period.
Dates of Award: 2016 – 2018

13) **Funding Source / Grant #**: U.S. Dept. of Veterans Affairs / I01BX007080
Mechanism: Career Development Award (CDA-1)
Role: PI
Total Cost: $160,983
Title: Effect of levodopa on postural motor learning in Parkinson disease
Purpose: Understand whether people with Parkinson's disease improve protective stepping responses after repeated postural perturbations (i.e. simulated trips), and the effect of levodopa on improvements.
Dates of Award: 2014-2016

14) **Funding Source / Grant #:** Medical Research Foundation of Oregon / N/A
Mechanism: Early Clinical Investigator Award
Role: PI
Total Cost: $19,971
Title: Postural motor learning in Parkinson's disease
Purpose: Characterize the performance and improvement of protective stepping between healthy young, healthy old, individuals with Parkinson's disease.
Dates of Award: 2014-2015

RESEARCH DISSEMINATION & AWARDS

Peer Reviewed Publications

Source	H-index	Citations	i-10 index
Google Scholar	33	3279	62
Scopus	28	2194	--

Updated Oct. 2025

Full Bibliography:

- Pubmed: https://www.ncbi.nlm.nih.gov/myncbi/daniel.peterson.6/bibliography/public/
- Google Scholar: https://scholar.google.com/citations?user=zSjM_PEAAAAJ&hl=en
- Scopus: https://www.scopus.com/authid/detail.uri?authorId=16307615200
- ORCID: https://orcid.org/0000-0002-4639-6544

Shaded = student or mentee under full or partial supervision of DSP
[C] = DSP corresponding author

2025 (total= 11; DSP as first, last, or corresponding= 5)

1. 93. **Peterson DS**[c], Nayak S, Lee H, Huisinga J, Hooyman A. Understanding the relationship between cutaneous sensation, balance, and falls in people with MS. Accepted. Journal of Neurologic Physical Therapy (JNPT).
2. 92. Larsson K, Johansson H, **Peterson DS**, Sedhed J, Leavy B. Relating movement behaviours and non-motor characteristics in people with Parkinsons disease: a compositional data analysis approach. *Journal of Parkinson's Disease.* In Press
3. 91. Schaefer SY, **Peterson DS**, Ernsth Bravel M, Finkel D. Predicting the onset of dementia with longitudinal performance-based measures of physical function. *J Gerontol B Psychol Sci Soc Sci*. 2025 Sep 20:gbaf176. doi: 10.1093/geronb/gbaf176. Online ahead of print.
4. 90. **Peterson DS**[C], Johansson L, Westerlind B, Lope De Oliveira T, Finkel D. Characterizing the time of day and year of falls in people with probable Parkinson's disease. *Scientific Reports.* In Press.
5. 89. Delgado F, Yu F, **Peterson DS**, Ofori E, MacKinnon DP, Beldon C, Adler CH, Beach TG, Der Ananian C. Apolipoprotein E, Executive Function, and Falls Across Cognitive Status: A Cross-Sectional Study. *Dement Geriatr Cogn Disord. 2025 Aug 21:1-16. doi: 10.1159/000548084. Online ahead of print.*
6. 88. **Peterson, DS**, Hooyman A, Takla TN, Monaghan PG, Huisinga J, Robers MV, Fritz NE. Fall history moderates the relationship between concern about falling and reactive stepping performance in people with multiple sclerosis. *Neuroscience.*, 2025 Sep 13:583:171-178. doi: 10.1016/j.neuroscience.2025.08.005. Epub 2025 Aug 6.
7. 87. Mostafavi SM, Soumma SB, **Peterson DS**, Mehta SH, Ghasemzadeh H. Detection and Severity Assessment of Parkinson's Disease by Analysis of Wearable Sensors Data Using Gramian Angular Fields and Deep Convolutional Neural Networks. *Sensors.* **2025**, 25(11), 3421; doi.org/10.3390/s25113421
8. 86. Longhurst J, Hooyman A, Albrecht F, Franzen E., **Peterson DS**. Discordance between balance ability and perception and its relation to falls in Parkinson's disease: A replication analysis. *Neurorehabil Neural Repair*. 2025 May 6. doi: 10.1177/15459683251335316. Online ahead of print. PMID: 40326378 DOI: 10.1177/15459683251335316
9. 85. **Peterson DS**[c], Monaghan, AS, Hooyman A, Trevino J, Kratz K. Feasibility and Preliminary Effectiveness of a 2-week in-place reactive balance training program in people with multiple sclerosis. *Mult Scler Relat Disord*. 2025 Mar:95:106346. doi: 10.1016/j.msard.2025.106346. Epub 2025 Feb 18. PMID: 39999592 DOI: 10.1016/j.msard.2025.106346.
10. 84. Zanotto T, Pradeep Kumar D, Golan D, Wilken J, Doniger GM, Zarif M, Bumstead B, Buhse M, Weller J, Morrow SA, Penner IK, Hancock L, Covey TJ, Ofori E, **Peterson DS**, Motl RW, Bogaardt H, Barrera M, Bove R, Karpatkin H, Sosnoff JJ, Gudesblatt M. Does cognitive performance explain the gap between physiological and perceived fall-risk in people with multiple sclerosis? *Mult Scler Relat Disord*. 2025 Feb 5:95:106322. doi: 10.1016/j.msard.2025.106322. Online ahead of print.

11. 83. Johansson H, **Peterson DS**, Sedhed J, Leavy B. Dual-task performance during the Timed Up and Go test in Parkinson's disease – evaluating impact of freezing and cognition. *Gait & Posture*. 2025 Jan:115:14-20. doi: 10.1016/j.gaitpost.2024.10.016. Epub 2024 Oct 18.

2024 (total= 5; DSP as first, last, or corresponding= 3)

12. 82. Takla TN, Monaghan PG, **Peterson DS**, Fritz NE. The Relation Among Reactive Stepping and Fall-Related Psychological Factors in Multiple Sclerosis. *Brain Sci. 2024 Nov 28;14(12):1197. doi: 10.3390/brainsci14121197.*

13. 81. Longhurst JK, Hooyman A, Landers MR, Mancini M, Franzen E, Leavy B, Johansson H, **Peterson DS**. Discordance between balance ability and perception is associated with falls in Parkinson's disease: a coordinated analysis. *Neurorehabilitation and Neural Repair*. Nov 27:15459683241300456. doi: 10.1177/15459683241300456. Online ahead of print. PMID: 39601421

14. 80. Kim JK, Rider JV, Zinselmeier A, Chiu YF, **Peterson DS**, Longhurst JK. Dual task gait has prognostic value for cognitive decline in Parkinson's disease. *Journal of Clinical Neuroscience*. Aug;126:101-107. doi: 10.1016/j.jocn.2024.06.006. Epub 2024 Jun 11. PubMed PMID: 38865942.

15. 79. Monaghan, AS, Ofori E, Fling B, **Peterson DS**[C]. Associating White Matter Microstructural Integrity and Improvements in Reactive Stepping in People with Parkinson's Disease. *Brain Imaging & Behavior*. Aug;18(4):852-862. doi: 10.1007/s11682-024-00867-w. Epub 2024 Mar 26.

16. 78. Monaghan, AS, Hooyman A, Dibble LE, Mehta S, **Peterson DS**[c] Generalization of In-Place Balance Perturbation Training in People with Parkinson Disease. *Journal of Neurologic Physical Therapy.* Jul 1;48(3):165-173. doi: 10.1097/NPT.0000000000000471. Epub 2024 Mar 14.

2023 (total= 9; DSP as first, last, or corresponding= 7)

17. 77. Monaghan, AS, Hooyman A, Dibble LE, Mehta S, **Peterson DS**[c] Cognitive Predictors of Responsiveness to Reactive Step Training in People With Parkinson's Disease at Fall Risk. *Neuroscience Letters.* 2023 Nov 20:817:137517. doi: 10.1016/j.neulet.2023.137517. Epub 2023 Oct 11.PMID: 37832815

18. 76. Lockhart T, Frames C, Olson M, Moon SH, **Peterson DS**, Lieberman A. Effects of Protective Step Training on Proactive and Reactive Motor Adaptations in Parkinson's' Disease Patients. *Front Neurol. 2023 Oct 24:14:1211441. doi: 10.3389/fneur.2023.1211441.* eCollection 2023. PMID: 37965161. PMCID: PMC10642212

19. 75. Monaghan AS, Ragothaman A, Harker GR, Carlson-Kuhta P, Horak FB[c], **Peterson DS**[c]. Freezing of Gait in Parkinson's Disease: Implications for Dual-Task Walking. *Journal of Parkinson's Disease.* PMID: 37574744 DOI: 10.3233/JPD-230063.

20. 74. Rafie F, Shibani V, Shahbazi M, Pourranjbar M, Nekouei AH, Rajizadeh MA, **Peterson DS**. Effects of voluntary and forced exercises on neurotrophic factors and cognitive function in animal models of Parkinson's disease. *Neuropeptides*. Neuropeptides 101,102357

21. 73. Mancini M, Hasegawa N, **Peterson DS**, Horak FB, Nutt John G. Digital Measures of Freezing of Gait across the spectrum of normal, non-freezers, possible freezers and definite freezers. *Journal of Neurology*. 2023 May 19. doi: 10.1007/s00415-023-11773-4. PMID: 37208526.

22. 72. Monaghan, AS, Hooyman A, Dibble LE, Mehta S, **Peterson DS**[c]. Stability Changes in Fall-Prone Individuals with Parkinson's Disease Following Reactive Step Training. *Journal of Neurologic Physical Therapy.* 2023 Jun 1. doi: 10.1097/NPT.0000000000000442. PMID: 37259190

23. 71. Monaghan, P, Monaghan, AS, Hooyman A, Fling BW, Huisinga JM, **Peterson DS**[c], Utilizing the ISway to Identify and Compare Balance Domain Deficits in People with Multiple Sclerosis. *Archives of Physical Medicine & Rehabilitation*. 2023 Apr 8;S0003-9993(23)00153-3. doi: 10.1016/j.apmr.2023.02.018. PMID: 37037293

24. 70. Monaghan, AS, Gordon, E, Graham L, Hughes, E, **Peterson, DS**[c], Morris, R. Cognition and Freezing of Gait in Parkinson's Disease: A Systematic Review and Meta-Analysis. *Neuroscience and Biobehavioral Reviews*. 2023 Apr;147:105068. doi: 10.1016/j.neubiorev.2023.105068. PMID: 36738813.

25. 69. Van Liew C, Gudesblatt M, Covey TJ, Wilken J, Golan D, Zarif M, Bumstead B, Buhse MJB, Ofori E, **Peterson DS**. The moderating roles of self-efficacy and depression in dual-task walking in multiple sclerosis: A test of self-awareness theory. *J Int Neuropsychol Soc.* 2023 Mar;29(3):274-282. doi: 10.1017/S1355617722000200. Epub 2022 Apr 25. PubMed PMID: 35465869.

2022 (total= 7; DSP as first, last, or corresponding= 4)

26. 68. Phan Vu, **Peterson DS**, Lee H[C]. Directional Virtual Time-to-Contact: A New Measure for Investigating Temporal, Spatial, and Control Aspects of Postural Balance Control. *Journal of Biomechanics*. 2023 Jan;146:111428. doi: 10.1016/j.jbiomech.2022.111428. PMID: 36610387

27. 67. Loyd BJ, Agnew L, Dibble L, Fangman A, **Peterson DS**, Schubert M, Gappmaier E, Thackeray A. Rehabilitation to Improve Gaze and Postural Stability in People with Multiple Sclerosis: A Randomized Clinical Trial. *Neurorehabilitation & Neural Repair*. 022 Nov;36(10-11):678-688. doi: 10.1177/15459683221124126. Epub 2022 Sep 13. PMID: 36113117.

28. 66. **Peterson DS[C]**. Effects of Gender on Dual-Tasking and Prioritization in Older Adults. *Gait & Posture.* 2022 Sep;97:104-108. doi: 10.1016/j.gaitpost.2022.07.247. Epub 2022 Jul 22. PMID: 35917700.

29. 65. Monaghan A, Mansfield A, Huisinga J, **Peterson DS[C].** Examining the Relationship Between Reactive Stepping Outcomes and Falls in People With Multiple Sclerosis. *Physical Therapy Journal (PTJ).* 2022 Jun 3;102(6):pzac041. doi: 10.1093/ptj/pzac041. PMID: 35403692

30. 64. Monaghan A, Johansson H, Torres A, Brewer G, **Peterson DS[C].** The impact of divided attention on automatic postural responses: A systematic review and meta-analysis. *Experimental Gerontology.* 2022 Jun 1;162:111759. doi: 10.1016/j.exger.2022.111759. Epub 2022 Mar 1. PMID: 35245641

31. 63. Richmond SB, **Peterson DS,** Fling BW. Bridging the Gap- Bilateral lower limb coordination and Callosal Integrity in people with Multiple Sclerosis. Accepted and in press: *Brain imaging and Behavior.* 2022 Jan 28. doi: 10.1007/s11682-021-00612-7. PMID: 35088352.

32. 62. Van Liew C, Huisinga, **Peterson DS[C]**. Evaluating the contribution of reactive balance to prediction of fall rates cross-sectionally and longitudinally in persons with multiple sclerosis. *Gait and Posture*. 2022 Feb;92:30-35. doi: 10.1016/j.gaitpost.2021.11.008. PMID: 34808516.

2021 (total= 13; DSP as first, last, or corresponding= 8)

33. 61. Monaghan A, Huisinga J, **Peterson DS[C]**. The relationship between plantar sensation and muscle onset during automatic postural responses in people with multiple sclerosis and healthy controls. *Multiple Sclerosis & Related Disorders*. Oct 5;56:103313. doi: 10.1016/j.msard.2021.103313. PMID: 34644600

34. 60. Monaghan A, Finley J, Mehta SH, **Peterson DS[C]**. Assessing the impact of dual-task reactive step practice in people with Parkinson's disease: A feasibility study. *Human Movement Science.* Sep 14;80:102876. doi: 10.1016/j.humov.2021.102876. PMID: 34534945

35. 59. Van Liew C, Monaghan A, Foreman B, Dibble LE, **Peterson DS[C]** Perturbation Practice in Multiple Sclerosis: Assessing Generalization from Surface Support Translations to Tether-Release Tasks. *Multiple Sclerosis and Related Disorders. Aug 16;56:103218. doi: 10.1016/j.msard.2021.103218.* PMID: 34454306

36. 58. Van Liew C, Dibble L, Foreman B, **Peterson DS[C]**. Change in "First Trial" Performance After Protective Step Practice in People with Multiple Sclerosis. *Clinical Biomechanics.* Aug 13;88:105448. doi: 10.1016/j.clinbiomech.2021.105448. PMID: 34418821.

37. 57. Loyd BJ, Agnew L, Fangman A, Thackeray A, **Peterson D**, Schubert M, Dibble L. Characterizing Gaze and Postural Stability Deficits in People with Multiple Sclerosis. *Multiple Sclerosis and Related Disorders*. Aug 14;55:103205. doi: 10.1016/j.msard.2021.103205. PMID: 34438218

38. 56. **Peterson DS[c]**, Phan V, Richmond S, Lee H, Effects of dual-tasking on time-to-boundary during stance in people with PD: A Preliminary Study. *Clinical Biomechanics.* Jun 26;88:105420. doi: 10.1016/j.clinbiomech.2021.105420. PMID: 34216987

39. 55. Monaghan A, Huisinga J, **Peterson DS[C].** The Application of Principal Component Analysis to Characterize Gait and its Association with Falls in Multiple Sclerosis. *Sci Rep.* 2021 Jun 17;11(1):12811. doi: 10.1038/s41598-021-92353-2. PMID: 34140612,

40. 54. Richmond SB, Lee H, Fling BW, **Peterson DS[c]**. The assessment of center of mass and center of pressure during quiet stance: Current applications and future directions. *Journal of Biomechanics*. 2021 Jun 23;123:110485. doi: 10.1016/j.jbiomech.2021.110485, PMID: 34004395

41. 53. Roman G, **Peterson DS**, Ofori E, Vidt M. Upper extremity biomechanics in native and non-native signers *Accepted and In Press, WORK.*

42. 52. Monaghan A, **Peterson DS[C]**. Torque responses to in-place-perturbations in people with multiple sclerosis. *Gait & Posture.* Feb;84:346-351. doi: 10.1016/j.gaitpost.2021.01.003. Epub 2021 Jan 10. PMID: 33454502

43. 51. Johansson H, Ekman, U, Rennie L, **Peterson DS**, Leavy B, Franzen E. Dual-Task Effects During a Motor-Cognitive Task in Parkinson's Disease: Patterns of Prioritization and the Influence of Cognitive Status. *Neurorehabilitation and Neural Repair.* 2021, March 10. DOI: 10.1177/1545968321999053, PMID: 33719728

44. 50. **Peterson DS[C],** Moore A, Ofori E. Performance fatiguability during walking in people with Charcot-Marie-Tooth disease. *Gait & Posture*. Feb 11;85:232-237. doi: 10.1016/j.gaitpost.2021.02.002. PMID: 33618167.

45. 49. Richmond SB. Swanson CW. **Peterson DS**. Fling BW. Advanced characterization of Static Postural Control Dysfunction in Persons with Multiple Sclerosis and Associated Neural Mechanisms. *Gait & Posture*. Jan;83:114-120. doi: 10.1016/j.gaitpost.2020.10.015. PMID: 33129171.

2020 (total= 12; DSP as first, last, or corresponding= 4)

46. 48. **Peterson DS[C]**, Van Liew, Stuart S, Horak FB, Mancini M. Relating Parkinson freezing and balance domains: A structural equation modeling approach. *Parkinsonism Relat Disord*. 2020 Aug 25;79:73-78. doi: 10.1016/j.parkreldis.2020.08.027. PMID: 32889503

47. 47. **Peterson DS[C],** Barajas J, Denney L, Mehta S. Backward Protective Stepping During Dual-Task Scenarios in People With Parkinson's Disease: A Pilot Study. *Neurorehabilitation & Neural Repair*. Aug;34(8):702-710. doi: 10.1177/1545968320935814. Epub 2020 Jul 7. PMID: 32633614

48. 46. **Peterson DS[C],** Mancini M, Fino P, Horak FB, Smulders KS. Speeding up Parkinson's Disease. *J Parkinsons Dis*. 2020;10(1):245-253. doi: 10.3233/JPD-191682. PMID: 31561384 PMCID: PMC7304052.

49. 45. **Peterson DS[c]**, Smulders K, Mancini M, Nutt JG, Horak FB, Fling B. Relating response inhibition, brain connectivity, and freezing of gait in people with Parkinson's disease. *Journal of the International Neuropsychological Society (JINS),* Dec 9;1-11. doi: 10.1017/S135561772000123X. PMID: 33292899;

50. 44. Ehgoetz Martens KA, **Peterson DS**, Almeida QJ, Lewis SJG, Hausdorff JM, Nieuwboer A. Behavioural Manifestations and Associated Non-Motor Features of Freezing of Gait. *Neurosci Biobehav Rev.* 2020 Sep;116:350-364. doi: 10.1016/j.neubiorev.2020.06.026. Epub 2020 Jun 27. PMID: 32603716,

51. 43. Roman G, **Peterson DS**, Ofori E, Vidt M. The modified Strain Index: A Composite Measure if Injury-Risk for Signers. *Journal of Motor Behavior*. 2020 Aug 17;1-10. doi: 10.1080/00222895.2020.1806778. PMID: 32799767,

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N, Harker G, Morris R, Nutt JG, Horak FB. Effects of the Agility Boot Camp with Cognitive Challenge (ABC-C) Exercise Program on Balance in Parkinson's Disease. *nPJ Parkinson's Disease*, 2020 Nov 2;6(1):31. doi: 10.1038/s41531-020-00132-z. PMID: 33298934

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2019 (total= 4; DSP as first, last, or corresponding= 1)

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2018 (total= 6; DSP as first, last, or corresponding= 5)

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2016 (total= 7; DSP as first, last, or corresponding= 7)

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2014 (total= 2; DSP as first, last, or corresponding= 2)

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2011 (total= 3; DSP as first, last, or corresponding= 0)

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91. 3. Myers CA, Torry MR, **Peterson DS**, Shelburne KB, Giphart JE, Krong J, Woo SLY, & Steadman JR. (2011) Measurements of Tibiofemoral Kinematics During Soft and Stiff Drop Landings Using Biplane Fluoroscopy. *American Journal of Sports Medicine* Aug;39(8):1714-22. PMID: 21602566,

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2010 (total= 1; DSP as first, last, or corresponding= 1)

93. 1. **Peterson DS**, Martin PE (2010) Effects of Age and Walking Speed on Coactivation and Cost of Walking in Healthy Adults. *Gait and Posture*. Mar; 31(3):355-9. PMID: 20106666

Letters to the Editor

2021

1. Richmond, SB., Fling BW., Lee H., **Peterson DS**. Letter to the editor in response to "The assessment of center of mass and center of pressure during quiet stance: Current applications and future directions". Journal of Biomechanics 128,110730

Selected Conference Abstracts and Proceedings

Trainee presenter or co-author under Dr. Peterson's mentorship

Conference Proceedings

Vaibhav Polisetti Venkata S, Sabat S, Deshpande CA, Arefeen A, Peterson DS, Zadeh H. On-Device Machine Learning for Diagnosis of Parkinson's Disease from Hand Drawn Artifacts. *BHI-BSN 2022 - IEEE-EMBS International Conference on Biomedical and Health Informatics and IEEE-EMBS International Conference on Wearable and Implantable Body Sensor Networks – Proceedings.*

Selected Podium presentations

Peterson, DS, Ghasemzadeh H. Using Machine Learning and AI to Understand Mobility. 2025 Digital Health Symposium. Arizona State University.

Peterson, DS, Monaghan AS, Hooyman A, Trevino J, Wooliscroft L, Kratz, K. The effects of a 2-week in-place reactive balance training program in people with multiple sclerosis. The 13th International Symposium on Gait and Balance in MS. Virtual, Oct. 2024

Monaghan A, Gordon E, Graham L, Hughes E, **Peterson DS**, Morris R. Cognition and Freezing of Gait in Parkinson's Disease: A systematic Review and Meta-Analysis. World Parkinson's Congress. Barcelona SP, 2023.

Dirks L, Plesher K, Rupiper P, Moskowitz S, Ivy C, Denney L, **Peterson D**, Shill H. Impact of Laser Shoes On Activities of Daily Living in People with Parkinson's and Freezing of Gait. World Parkinson's Congress. Barcelona SP, 2023.

Monaghan A, Trevino J, Barajas J, Ofori E, Fling B, **Peterson DS**. Examining the Relationship Between White Matter Integrity and Reactive Stepping. International Symposium on Gait and Balance in Multiple Sclerosis. Denver, CO. 2023

Monaghan A, Trevino J, Barajas J, Ofori E, Fling B, **Peterson DS**. The Effectiveness of Reactive Step Training in People with Multiple Sclerosis. International Symposium on Gait and Balance in Multiple Sclerosis. Denver, CO. 2023

Monaghan P, Monaghan A, Hooyman A, Fling B, Huisinga J, **Peterson DS**. Modeling Balance in People with Multiple Sclerosis: An Exploratory Factor Analysis Approach. International Symposium on Gait and Balance in Multiple Sclerosis. Denver, CO. 2023

Phan, V, **Peterson DS**, Lee H, Adverse impacts of Parkinson's disease and dual-tasking on the temporal and control aspects of balance interpreted by directional virtual time to contact. American Society of Biomechanics. 2023

Monaghan A, Trevino JL, Barajas, JS, Dibble LE, Mehta SH, **Peterson DS**. Cognitive Predictors of Reactive Step Training in Parkinson's Disease. *American Society of NeuroRehabilitation.* St. Louis, MO. April, 2022

Oxpring M, **Peterson DS**. Improvement in muscle activation latency through reactive step training in people with Parkinson's Disease. American Academy of Physical Medicine and Rehabilitation. 2023

Delgado F, Der Ananian C, Schaefer S, Bosch P, **Peterson DS**. Balance and Reactive Steps in Older Adults With and Without Self-Reported Musculoskeletal Conditions. *Gerontological Society of America*, November 4-7, 2020

Peterson DS, Dijkstra BW, & Horak FB. Effects of Levodopa on Postural Motor Learning in Parkinson's Disease. *International Society of Posture and Gait Research*, June, 2015.

Peterson DS, Dijkstra BW, & Horak FB. Effects of Parkinson's Disease on Adaptation of Compensatory Stepping. *Gait and Clinical Movement Analysis Society* Annual Meeting, March, 2015.

Peterson DS, Pickett KA, & Earhart GM. Supra-spinal Control of Locomotion in Freezers and Non-freezers with Parkinson Disease. *International Society of Posture and Gait Research*, Akita, Japan, June 2013

Peterson DS, Pickett KA, & Earhart GE. "Cortical and subcortical brain activity during imagined gait tasks across age" *International Society of Posture and Gait Research*, Trondheim Norway, June 2012.

Peterson DS, Pickett KA, & Earhart GE. "Comparing Supra-spinal Locomotor Regions in Parkinson's

Disease and Controls. *Clinical Research Training Center National Meeting*, Rochester MN, May 2012.

Peterson DS, & Martin PE. "Effects of Age and Walking Speed on Coactivation during Gait" *American Society of Biomechanics*. State College, PA. August 26-69, 2009.

Peterson DS, Krong J, Giphart JE, Shelburne K, Steadman JR & Torry M. "Comparison of Tibial Translations during Soft and Stiff Landings in Healthy Adults: A Biplane Fluoroscopy Study" *American Society of Biomechanics*. State College, PA. August 26-69, 2009.

Selected Poster Presentations

Peterson DS, Shah VV, Carlson-Kuhta P, Silva-Batista C, Ragothaman A, Nutt JG, Horak FB, Mancini M. People with PD who freeze have altered quality, but not quantity of daily-life walking. International Consortium of Freezing of Gait Conference. Atlanta, GA. 2025

Peterson DS. Hooyman A, Takla TN, Monaghan PG, Huisinga J, Robers MV, Fritz NE. Fall history moderates the relationship between fear of falling and reactive stepping performance in people with multiple sclerosis. International Symposium on Gait and Balance in Multiple Sclerosis. Denver, CO. 2025.

Nayak S, **Peterson DS**, Huisinga J, Lee H. Comparative Assessment of Postural Balance Control in Multiple Sclerosis Patients Using Virtual Time-to-Contact and Traditional Balance Metrics. American Society of Biomechanics, Madison Wisconsin, **2024**.

Peterson DS., Johannson L, Westerlind B, Lopes de Oliviera T, Finkel D. Relating Specific Medications to Record of Falls in a Large Cohort of Older Swedish Adults. Geriatric Society of America. Seattle, WA. **2024**

Velez M, Ofori E, Rodi A, Valdez M, Grabeel K, Sabri A, Smith-Plata J, **Peterson DS**, Beversdorf D, Braden B. Identifying Links Between Parkinsonism Symptoms, Restricted and Repetitive Behaviors and Interests, and Caudate Volume in Autistic Adults Across the Lifespan. *International Society for Autism Research **2024**.*

Soumma SB, **Peterson DS**, Ghasemzadeh H, Mehta S. AI-Powered Detection of Freezing of Gait Using Wearable Sensor Data in Patients with Parkinson's Disease. *Movement Disorders Society **2024**.* Philadelphia PA

Kim J, Rider JV, Zinselmeier A, Chiu Yi-Fang, **Peterson DS**, Longhurst JK. Interlimb arm swing asymmetry during dual-task gait has diagnostic values for cognitive decline in Parkinson's disease. *APTA Combined Sections Meeting*. Boston, MA, **2024**.

Barajas JS, Monaghan A, Trevino T, Dibble L, Mehta S, Peterson DS Effects of In-Place Perturbation Training on Falls in People with Parkinson's disease and Postural Dysfunction *International Society of Posture and Gait Research.* Montreal, CA, July, 2022

Monaghan A, Trevino J, Barajas J, Dibble L, Mehta S, Peterson DS. The Effectiveness of Reactive Step Perturbation Training in People with Parkinson's Disease and Posture Disturbances. *International Society of Posture and Gait Research.* Montreal, CA, July, 2022.

Mancini M, Hasegawa N, Peterson DS, Horak FB, Nutt JG. Freezing of Gait across the spectrum of normal, non-freezers, possible freezers, and definite freezers. *International Society of Posture and Gait Research.* Montreal, CA, July, 2022

Phan Vu, Peterson DS, Lee H. Directional Virtual Time-To-Contact: A Case Study on Assessing Impacts of Disease and Dual-Tasking. North American Society of Biomechanics (NACOB) Ottowa, CA, August, 2022.

Monaghan A, Mansfield A, Huisinga J, Peterson DS. Delayed Step Latencies During Backward Reactive Stepping Increases the Odds of Having a Fall History. *American Society of NeuroRehabilitation*. St. Louis, MO, April. 2022.

Van Liew C, Gudesblatt M., Covey T., Wilken J., Golan D, Zarif M, Peterson D. The moderating roles of self-efficacy and depression in dual task walking in multiple sclerosis: A test of self-awareness theory. *International Symposium on Gait and Balance in Multiple Sclerosis*. Virtual. September, 2021

Van Liew, C., Gudesblatt M, Srinivassan J, Kaczamarek O, Golan D, Doinger G, Peterson D. Cognitive Domains and Dual Task Walking in Persons with Multiple Sclerosis. *International Symposium on Gait and Balance in Multiple Sclerosis*. Virtual. September, 2021.

Monaghan, A, Huisinga, J, & Peterson D. Modeling Gait in People with Multiple Sclerosis: A Principal Component Analysis Approach. *International Symposium On Gait and Balance in Multiple Sclerosis.* Virtual. September, 2021

Phan, Vu, Peterson, DS, Lee, H: Intermittent Switching Rate as a Measure to Assess Impacts of Parkinson's Disease and a Secondary Cognitive Task on Postural Balance. *North American Congress on Biomechanics*, Virtual. August, 2021.

Scavarda M, Nagel K, **Peterson DS**, Plesher K, Moskowitz S, Ivy C, Denney L. The Impact of Visual Cueing on Gait Velocity in those with Parkinson's Disease with Freezing of Gait International *Parkinson and Movement Disorder Society Virtual Congress.* Virtual. September 17-22, 2021.

Barajas J, Denney L, Mehta SH, Peterson DS[c]. Characterizing the Impact of Baseline Cognitive Status on Dual Task Performance While Backward Reactive Stepping *American Society of Neurorehabilitation*. Virtual. April 5-9, 2021

Monaghan AS, Finley J, Mehta SH, Peterson DS[c]. Adaptation of dual-task performance with reactive steps in people with PD. *American Society of Neurorehabilitation.* Virtual. April 5-9, 2021

Phan V, **Peterson DS**, Richmond S, Lee, H. Effects of Parkinson's Disease and a Secondary Cognitive Task on Standing Postural Stability. International Conference on Neural Rehabilitation (ICNR) 2020

Monaghan AS, **Peterson DS**. Torque Responses to In-Place Perturbations in People with Mild Multiple Sclerosis. *10th International Symposium on Gait & Balance in Multiple Sclerosis*. Virtual. October, 2020

Van Liew C, Gudesblatt M, Srinivasan J, Kaczmarek O, Golan D, Doniger G, Wilken J, Ofori E, **Peterson DS**. Cognitive Domains and Dual Task-Walking in Persons with Multiple Sclerosis. *10th International Symposium On Gait & Balance in Multiple Sclerosis.* Virtual. October, 2020

Van Liew C, Dibble LE, Foreman KB, & **Peterson DS**. Change in 'First-Trial' Performance After Protective Step Practice in People with Multiple Sclerosis. *2020 Consortium for Multiple Sclerosis Centers.* August 3rd, 2020

Monaghan A, Van Liew C, Dibble LE, Schaefer SY, Hunt GR, Foreman KB, **Peterson DS**. Understanding Generalization after Perturbation Practice in Multiple Sclerosis. *9th International Symposium On Gait & Balance in Multiple Sclerosis.* Denver, CO, 2019

Barajas J, Nadkarni A, Denney L, Mehta S, **Peterson DS.** Protective Postural Control with Divided Attention: Effects of Parkinson's Disease. *International Society of Posture and Gait Research.* Edinburgh, Scotland, June 30-July 4; 2019.

Roman G, **Peterson DS**, Vidt ME. Quantification of ballistic signing: Does native and non-native status matter? *Combined Sections Meeting of the American Physical Therapy Association*, Feb. 2019.

Peterson DS, Lohse KR, Mancini M. Anticipatory postural responses prior to protective steps are not different in people with PD who do and do not freeze. *International Freezing of Gait Society*, Leuven, Belgium, 2018

Peterson DS, Lohse KR, Mancini M. How anticipatory postural adjustments affect protective steps: A step-by-step multi-level analysis *American Society of Neurorehabilitation,* San Diego, CA. 2018

Muthukrishnan N, **Peterson DS**, Choice of stepping limb after postural perturbations in people with PD, does disease severity or limb dominance matter? *American Society of Neurorehabilitation*, San Diego, CA. 2018

Roman G, **Peterson DS**, Vidt ME. Work Envelope in Native and Non-Native Signers. *American Society of Biomechanics*, 2018

Barajas J, Mehta S, **Peterson DS.** First trial protective step performance before and after short-term perturbation practice in people with Parkinson's disease. *American Society of Neurorehabilitation.* Baltimore, MD, 2017

Peterson DS, Kratz K, Foreman BK, Dibble L. Protective stepping in people with MS: effects of a single bout of practice. *International Society of Posture and Gait Research.* Ft Lauderdale, FL. 2017

Symposia and Invited Conference Presentations

** Indicates international conference or symposium

**Symposium Speaker, International Society of Posture and Gait Research 2025
"Fear in motion: Exploring psychological factors behind falling in older adults and Neurodegeneration"

**Roundtable lead / speaker, World Parkinson's Congress 2023
"The role of the physical therapist in addressing non-motor symptoms"

Invited Speaker: MDS- PAS 8th Annual Movement Disorders School for Neurology Residents 2023

**Symposium Speaker, International Society of Posture & Gait Research 2023
"Subcortical contributions to reactive balance"

**Invited Speaker: International Symposium of Gait and Balance in MS 2023
"Neural control of reactive balance in people with MS"

Symposium Speaker, Combined Sections Meeting (CSM) 2023
Neuroimaging of Reactive Balance Control: Identifying Therapeutic Targets to Inform Fall Prevention

**Invited Speaker: INSIGHT, Living Brave with PD: PD Warrior Conference 2022
"Freezing of Gait and Cognition: Opportunities for Rehabilitation"

**Invited Speaker: Movement Disorders Society- European Section: Multidisciplinary Teamwork in PD, Atypical PD & Dystonia: Innovations & Challenges. 2022
"Impacts of FOG on Cognition: Current Knowledge and Clinical Application"

Symposium Speaker, Combined Sections Meeting (CSM) 2019
"Fake News: Understanding limitations and pitfalls of scientific literature"

**Invited Speaker: International Symposium of Gait and Balance in MS 2019
"Compensatory Stepping in people with Multiple Sclerosis"

**Invited Speaker: International Freezing of Gait Conference (Leuven, Belgium) 2018
Posture and Gait Control in People with PD who Freeze

Symposium Speaker, 2017 Combined Sections Meeting (CSM) 2017
"Cognitive impairment in PD: Understanding and unlocking freezing of gait

Invited Speaker, 2017 Washington State Traumatic Brain Injury Conference 2017
"Linking Mobility and Cognition: Implications for Rehabilitation"

**Symposium Speaker, 2014 International Society of Posture and Gait Research 2014
"Supraspinal Control of Locomotion in PD- Implications for Rehabilitation"

Invited Speaker, OHSU Parkinson Center: Managing & Treating PD 2014
"Integrating cognitive tasks into physical therapy

Invited Academic Research Presentations

** Indicates international presentation

**Drug-related falls in older adults: Utilization of the SENIOR ALERT Swedish Registry 2024
University of Jonkoping

**Assessing deficits and possible treatments of reactive balance in neurological groups 2024
University of Bologna

**Neural mechanisms of reactive balance in people with PD and MS 2024
Karolinska Institute

Reactive balance in People with Parkinson's disease 2024
Oregon Health & Science University, (Neurology Grand Rounds)

Characterization and treatment of reactive balance in neurological populations 2023
Pennsylvania State University (Action Club)

**Protective postural control in people with PD: Deficits & potential for rehabilitation 2021
Tel Aviv University & Sheba Medical Center, Israel

Parkinson's, Motor Disorders & the Community 2021
ASU TRiP Talk

Dual Task Postural Control People with PD 2020
Oregon Health & Science University

Protective Step Training in PD: Potential for Rehabilitative Application 2020
University of Southern California

One Step Backward and Two Steps Forward: Protective Posture in Clinical Populations 2019
Arizona State University; Speech & Hearing Science

Protective Step Dysfunction and Training in Clinical Populations 2018
University of Utah

Protective postural control in clinical populations: Potential for clinical intervention? 2017
Colorado State University

Understanding and treating mobility dysfunction in clinical populations 2016
Arizona State University, Biomedical Engineering Seminar Series

Compensatory Stepping in Parkinson's disease and Multiple Sclerosis 2015
University of Utah

Postural Motor Learning in Parkinson's Disease: Implications for Rehabilitation 2014
Utah State University

Biomechanical and Neural Factors Associated with Freezing in PD 2013
Utah State University

Biomechanical and Neural Factors Associated with Freezing of Gait in PD 2012
Oregon Health Sciences University

Freezing of Gait in Parkinson Disease 2012
Illinois State University

Metabolic Cost of Walking in Older Adults and Mechanisms of ACL Injury in Young 2009
University of Illinois in Chicago

Effects of age on Coactivation, Variability, and Joint Kinetics During Walking 2008
Mayo Clinic, Rochester, MN

Honors & Awards

Attendee/Learner: NIH-Sponsored Course in Reproducible Rehabilitation (ReproRehab) 2024

Outstanding Faculty Mentor Award Nominee- Arizona State University Graduate College 2021

Outstanding Teaching Award Nominee- 5th Annual CHS Staff and Faculty Awards 2020

Outstanding Faculty Mentor Award Nominee- Arizona State University Graduate College 2020

Attendee: NIH-Sponsored "Training in Grantsmanship for Rehabilitation Research" workshop 2017

Manuscript selected as "Editor's Choice" (Archives of Physical Medicine & Rehabilitation) 2016

Travel Grant Recipient- 2016 World Parkinson Congress 2016

Attendee, NIH-sponsored "Training Course in fMRI" (Univ. of Michigan) 2012

2nd Place- Graduate Research Symposium; (Washington University in St. Louis) 2011

Selected as a Funded Pre-Doctoral Trainee on an NIH CTSA (T32 HD007434; PI: Mueller); Washington University School of Medicine; Program in Physical Therapy 2009

B.K. & Betty Stevens Undergraduate Scholarship (University of Florida) 2006

Anderson Scholar for Academic Achievements (University of Florida) 2005

Mentee awards (while under supervision of Dr. Peterson)

College of Health Solutions Christine Wells Outstanding Research Award (Monaghan) 2023

College of Health Solutions Christine Wells Outstanding Research Award (Van Liew) 2021

Graduate & Professional Student Association Outstanding Research Award (Monaghan) 2020

School of Biological and Health Systems Engineering Merit Award Stipend (Muthukrishnan) 2018

Northern Arizona University Annual 3-minute Research Presentation (3rd place; Peters) 2017

SERVICE

Service for Arizona State University

University:

Faculty Sponsor: Recreational Climbing Club 2025 – Present

Faculty Sponsor: Dance Club 2025 – Present

College:

Member: CHS Faculty Mentoring Committee 2025 – Present

Member: CHS Lab and Clinic Safety Committee 2025 – Present

Member: CHS Research Council 2018 – Present

Member: CHS Grant Review Committee 2020 – Present

Member: Jumpstart Grant Review Committee 2019 – 2024

Co-Chair: CHS Lab and Clinic Safety Committee 2021 – 2025

Co-Chair: Faculty Mentoring Committee 2022 – 2024

Chair: Search committee for Research Faculty in “Rehabilitation” 2024

Chair: Search committee for Tenure Track Faculty in “Rehabilitation” 2022

Member: Search committee for Tenure Track Faculty in “Human Neuroscience” 2021

Member: Search committee Center Director of “Human Performance” 2021

Member: CHS Personnel Committee 2021

Member: Faculty success hub (CHS Visioning Committee) 2018

Member: Faculty success hub (Research subcommittee) 2018

Program:

Member: Exercise & Nutrition Science PhD Program Executive Committee 2025 – Present

Member: MS in EXW Curriculum Committee 2019 – 2025

Member: MS in Biomechanics Curriculum Committee 2016 – 2018

Member: Search Committee for Tenure Track Faculty in “Biomechanics” 2017 – 2018

HPEN Health Equity Course (assisted with course development) 2022

Professional Service

Grant Review Service (national & international)

NIH Grant Review Activities:

Ad-Hoc Member: Musculoskeletal Rehabilitation Service (MRS) study section	2025
Ad-Hoc Member: NINDS G64 (NSDK) Clinical Trials study section	2024
Ad-Hoc Member: Musculoskeletal Rehabilitation Service (MRS) study section	2023
Ad-Hoc Member: NINDS ZNS1 G38 Special Emphasis Panel	2021
Ad-Hoc Member: NINDS NSD-K (Clinical Trials) Study Section	2018
Ad-Hoc Member: Special Emphasis Panel/SRG ZRG1 ETTN-C (10) B: Small Business panel: Clinical Neurophys, Devices, Neuroprosthetics, & Biosensors	2017

Dept. of Veterans Affairs Grant Review Activities

Standing Member- Rehabilitation R&D Scientific Group Review (RRD6-Chronic Medical Conditions and Aging)	2020 – 2022
Ad-Hoc Member: Rehabilitation R&D Scientific Group Review (RRD6-Chronic Medical Conditions and Aging)	2018 – 2019
SPiRE Grant reviewer (RRDS R); Rehabilitation Research and Development	2017 – 2024

NSF Study Section Grant Review Activities

Ad-Hoc Member: Program in Perception, Action, and Cognition	2018

Congressionally Directed Medical Research Program (CDMRP)

Ad-Hoc Member: MSRP-CT-RR Panel	2022

National Multiple Sclerosis Society

Recovering Functional Activity Grant Review Committee	2023

International Funding Agency Review Activities:

Ad-Hoc Member: Mitacs “Accelerate” Proposal Stream (Canada)	2025
Ad-Hoc Reviewer: ParkinsonNL (Netherlands)	2025
Ad-Hoc Reviewer: MS Australia	2025
Standing grant reviewer (College of Experts): Parkinson’s UK	2020 – Present
Ad-Hoc Reviewer: ZonMw Reviewer (Netherlands)	2024
Ad-Hoc Member: Israeli Ministry of Innovation, Science & Technology Grant Review	2022
Ad-Hoc Member: Mitacs “Accelerate” Proposal Stream (Canada)	2022
Ad-Hoc Member: Dunhill Medical Trust (UK)	2021
Ad-Hoc Member: Health Research Board, national funding agency for Ireland	2019
Ad-Hoc Member: Research Foundation Flanders (Belgium)	2017 & 2018
Ad-Hoc Member: Israeli Science Foundation	2017

Other, National Grant Review Activities

Univ. of Maryland Claude D. Pepper Older Americans Independence Center	2020

Service to Societies

2026 World Parkinson’s Congress Local Organizing Committee	2024 – Present
2026 World Parkinson’s Congress Comprehensive Care Program Subcommittee	2024 – Present
2023 World Parkinson’s Congress Comprehensive Care Program Subcommittee	2022-2023

International Society of Posture and Gait Research (ISPGR) World Congress 2019
Session Co-Chair & Scientific Review Committee

Service to Journals

Associate Editor- Neurorehabilitation and Neural Repair	2025 – Present
Editorial Board- Neuroscience Letters	2024 – Present
Editorial Board- Journal of Neurologic Physical Therapy	2016 – Present
Review Editor- Frontiers in Movement Disorders	2020 – Present
Special Issue Editor (Journal of Neurologic Physical Therapy) "Physical Therapy for Parkinson's Disease – Mechanisms and Interventions"	2017 – 2018

Ad Hoc Reviewer (***approximately 25-35 per year***) for numerous journals, including:

Anatomical Record
Arch Phys Med & Rehab
Behavioural Brain Research
Brain Imaging and Behavior
Cerebral Cortex
Clinical Biomechanics
Clinical Neurophysiology
Disability & Rehabilitation
Experimental Aging Research;
European J. of Neuroscience
Gait & Posture
Human Brain Mapping
Human Movement Science
J. of Biomechanics
J. of Gerontology: Med. Sci.
J. of Neurology, Neurosurgery, & Psychiatry
J. of NeuroEng. & Rehab.
J. of Motor Learning & Devel.
J. of Sci & Medicine in Sport
J. of Applied Biomechanics;
J. of Parkinson's Disease
J of Neural Transmission
J. of Neurologic PT
J. of Neurology
JOVE
Lancet Neurology
Peer J
Parkinson Disease J.
Parkinson's Dis. & Rel. Dis.
Pilot & Feasibility Studies
Physiotherapy Theory & Practice;
PLoS One
Physical Therapy Journal
Psychological Research
Medical Engineering & Physics
Medicine & Sci in Sports & Ex.
Motor Control
Movement Disorders
Mechanisms of Aging & Devel.
Multiple Sclerosis & Rel. Dis.
Neurobiology of Aging
Neuroimage
Neuroscience Letters
Neurorehab. & Neural Repair
Neuroscience and Biobehav. Rev
Sensors
Scientific Reports
Transactions on Neural Systems & Rehab Eng

Professional Memberships

Society for Neuroscience
International Society for Posture and Gait Research
American Society of Neurorehabilitation
International Consortium of Freezing of Gait (ICFOG)

Other

Data Safety Monitoring Board for R01 funded to PI: Sommer Amundsen-Huffmaster 2025

Community service

Community Research / Educational Presentations

"Reactive Balance in People with Neurological Conditions" 2025
Academy of Neurologic Physical Therapy Degenerative Diseases Special Interest group (ANPT, DD-SIG)

"Parkinson's Podcast with Sheryl Lowenhar" 2025
Gait and Balance Explained
https://17branches.org/113-gait-and-balance-explained/

"What goes wrong with Balance in Parkinson's Disease & Can we change it" 2023
American PD Association "Let's Keep Moving with APDA" seminar series
https://www.apdaparkinson.org/videos/lets-keep-moving-with-apda-what-goes-wrong-with-balance-in-parkinsons-disease-can-we-change-it/

"Falls, Balance & MS- causes and possible treatments" 2022
MS support groups (Phoenix)

"Falls, Balance, and Parkinson's Disease" 2022
PD support groups (Phoenix)

"Balancing activity, safety, and quality of life" 2020 / 2021
Braille Institute Quarterly Fall Prevention Seminar

"PT and PD: Balance and physical therapy in people with Parkinson's disease" 2019
Arizona Rehab PT Clinic

"Balance and posture in Parkinson's disease" 2018
Scottsdale Parkinson's disease support group

"Parkinson's Disease: Symptoms and Signs" 2016
Cache Valley Senior Center, Logan UT

"Walking & Balance in Parkinson's Disease: Latest Research" 2013
Logan, UT Parkinson's Disease Support Group

"Imagine That! Imagined walking to gain insights into locomotor control in PD" 2013
Young Onset PD Support Group, St. Louis, MO

Community Engagement

"New Adventures in Learning" (NAIL) Continued adult education program 2017- 2020
Instructor / Presenter

Hereditary Neuropathy Foundation- "Movement is Medicine" Summit (Phoenix, AZ) 2018
Co-presenter / researcher

Hereditary Neuropathy Foundation Center for Excellence for CMT (ASU & BNI) 2021 – present
contributor

TEACHING & MENTORING

Teaching (ASU)

Instructor of Record

"Introduction to Kinesiology" (KIN 101) 2024 – Present
Undergraduate, in-person delivery

"Motor Behavior" (KIN345) 2021 – Present
Undergraduate, in-person delivery

"Neural Aspects of Movement and Rehabilitation" (KIN 424 / 598) 2016 – Present
Undergraduate, in-person delivery

Teaching (Other Institutions)

Instructor of Record

"Neural Aspects of Rehabilitation"; MS in Exercise Science Curriculum 2016
Utah State University

Guest Lecturer

"Motor Control"; Doctorate in Physical Therapy Curriculum 2015 – Present
University of Utah

"Biocontrol"; Movement Science PhD Curriculum 2012
Washington University in St. Louis

"Development, Control, and Analysis of Human Movement"; Post Professional DPT 2012
Washington University in St. Louis

"Neuroscience" Doctorate in Physical Therapy Curriculum 2011 – 2012
Washington University in St. Louis

Mentoring - ASU

Faculty Mentoring

Arizona State University
Joseph Roberts (Faculty Mentee; College of Health Solutions) 2023 – Present

Postdoctoral Mentoring

Arizona State University
Emily Tobin, PhD (DSP-primary mentor) 2025 – Present
Wendy Ahn, PhD (DSP-primary mentor) 2025 – Present

University of Utah
Brian Loyd, PhD (Co-mentored with Lee Dibble) 2018 – 2021
Currently Faculty Member at University of Montana

Student Mentoring

Committee Chair

Graduate: PhD

Chaerin Hong, MS (Mechanical Engineering) 2025 – Current
Title: TBD
Committee Co-Chair: Hyunglae Lee

Alexander Belnavis, MS (Exercise & Nutrition Science; CHS) 2025 – Current
Title: TBD
Committee Co-Chair: Edward Ofori

Andrew Monaghan (Exercise & Nutrition Science; CHS) 2019 – 2023
Title: Neural Control of Protective Stepping in Neurological Populations;
Successfully defended thesis: May 2023
Received the CHS 2021 Christine Wells Outstanding Research Award
Fall 2024- Faculty (tenure track) at Queens University Belfast, Ireland

Charles Van Liew (Exercise & Nutrition Science; CHS) 2018 – 2021
Title: Dual-Task Walking in MS: Correlates, Moderators, and Consequences
Successfully defended thesis: April 2021
Received the CHS 2021 Christine Wells Outstanding Research Award
Faculty, Glendale Community College

Graduate: MS

Alexander Belnavis (MS; Speech & Hearing Science) 2021 – 2023
Title: Relating speech and gait outcomes in people with PD
Committee co-chair: (co-chair: Daliri)

Jordan Barajas (MS: Exercise, Nutrition, & Wellness; CHS) 2017 – 2020
Title: Effects of Dual Tasking on protective stepping in people with PD
Thesis successfully defended 11/2020
Currently working in industry

Marvin Vergara (MS: Applied Project; Fulton Schools of Engineering) 2019
Title: Characterizing electromyographic activity in people with PD
Project successfully defended 5/2019
Currently working in industry

Matthew Gerveler (MS Applied Project; Fulton Schools of Engineering) 2017 – 2018
Title: Characterizing protective stepping in healthy young adults via TMM
Project successfully defended, 05/2018
Currently working in industry

Undergraduate Honors Theses

Skyla Cochrane (Barrett Honors Senior Thesis) 2024 – 2025
Title: Strength as a predictor of training responsiveness in people with PD

Sean Bowman (Barrett Honors Senior Thesis) 2023 – 2024
Title: Anticipatory vs. expected reactive stepping in people with PD

Devin Nikjou (Barrett Honors Senior Thesis) 2023 – 2024
Title: EMG responses in reactive balance in people with PD

Ayden Salek (Barret Honors Senior Thesis) 2023 – 2024
Title: EMG responses to reactive balance training in neurological populations

Sam Webster (Barrett Honors Senior Thesis) 2022 – 2023
Title: Parkinsonian Symptoms in Patients with REM Sleep Behavior Disorder

Tea McCormick (Barrett Honors Senior Thesis, BME) 2021 – 2023
Title: assessing cognitive tests across domains in people with PD & FOG

Cal Bosard (Barrett Honors Senior Thesis, CHS) 2021 – 2022
Title: Characterizing reactive lateral stepping in people with PD

Jelena Mitrovic (Barrett Honors Senior Thesis, CHS) 2021 – 2022
Title**:** Effects of Ballet on Balance in Individuals with Down Syndrome

Becca Sturm (Barrett Honors Senior Thesis, CHS) 2021 – 2022
Title: Dual tasking in people with and without PD

Finn Larsen (Barrett Honors Senior Thesis, College of Nursing) 2019 – 2020
Title: Transfer of skills across hockey & Golf

Randall Arroyo (Barrett Honors Thesis, Kinesiology) 2018 – 2019
Title: Generalization of protective stepping across lateral stepping directions

Rachael Nowak (Barrett Honors Thesis, Kinesiology) 2017 – 2018
Title: Generalization of protective stepping: forward and backward steps

Rachael Preshler (Barrett Honors Senior Thesis, Kinesiology) 2017 – 2018
Title: Relating reactive stepping to falls in community dwelling older adults.

Committee Member

Graduate: PhD

Soubhagya Nakak (PhD in Mechanical Engineering) 2023 – Present
Title: TBD
Committee Chair: Hyunglae Lee

Jordan Barajas (PhD in Exercise & Nutrition Science; CHS) 2023 – Present
Title: TBD
Committee Chair: Ed Ofori

Ferdinand Delgado (PhD in Exercise & Nutrition Science; CHS) 2018 – 2023
Title: Investigating the Interplay between Executive Function, Apolipoprotein E4, and Falls in Older Adults with Normal Cognition, Mild Cognitive Impairment, and Alzheimer's Dementia
Committee Chair: Cheryl Der Ananian
Thesis Defense: May 2023

Josh Beaumont (PhD in Exercise & Nutrition Science, CHS) 2017 – 2023
Title: Energy expenditure of walking in adults: influence of body mass index, age, height, and sex
Committee Chair: Glenn Gaesser
Thesis Defense: Nov. 2023

Seong Moon (PhD in Biomedical Engineering; Fulton Schools of Engineering) 2017 – 2023
Title: Understanding the Effect of Epidural Steroid Injection in Lower Back Pain using Inertial Measurement Unit Wearable Device
Committee Chair: Thurmon Lockhart
Thesis Defense: May 2023

Kaycee Glattke (PhD in Biomedical Engineering, Fulton Schools of Engineering) 2017 – 2022
Title: Low-Intensity Blood Flow Restriction Training as a Pre-Operative Rehabilitative Modality to Improve Post-Operative Outcomes for ACL Reconstruction
Committee Chair: Thurmon Lockhart
Thesis successfully defended, May 2022

Victoria Smith (PhD in Biomedical Engineering; Fulton Schools of Engineering) 2015 – 2019
Title: Understanding the application and limitations of lyapunov exponents for fall risk assessments
Committee Chair: Thurmon Lockhart
Thesis Defense: 10/2019
Currently working in industry

Gretchen Roman (PhD in Exercise & Nutrition Science; College of Health Solutions) 2015 – 2019
Title: 'Upper extremity biomechanics in native and non-native sign language
Committee Chair: Swan
Thesis Defense: 11/2018
Currently in a postdoctoral position- University of Rochester

<u>Graduate: MS</u>

Lexi Kasofsky (MS in Exercise & Wellness; CHS) 2022 – 2023
Title: Blood flow restriction in Stroke Survivors
Committee Chair: Siegler

Kalyani Datta (Speech Language Pathology) 2022 – 2022
Title: Effects of Levodopa on Cognitive Control in Parkinson's Disease
Committee Chair: Brewer

Madeline Hooten (Speech Language Pathology) 2022 – 2022
Title: Effects of Gender on Cannabis consumption in people with PD
Committee Chair: Ofori

Kwanghee Jo (MS in Biomedical Engineering) 2022 – 2022
Title: The Use of a Vibrotactile Feedback for Improving Standing Posture Stability
Committee chair: Lee

Xun Yu (MS in Biomedical Engineering) 2022 – 2022
Title: Dynamic stability assessment of walking while wearing passive back support Exo-suit
Committee chair: Lockhart

Arianna Marquez (MS in Biomedical Engineering; Applied Project) 2022 – 2022
Title: Gait Symmetric Adaptation and Retention to Short-Term Visual Distortion and Split-Belt Treadmill Walking
Committee chair: Lee

Theophilus Annan (MS Applied Project; Fulton Schools of Engineering) 2020 – 2021
Title: Backward reactive stepping in stroke survivors
Committee Chair: Honeycutt

Niveditha Muthukrishnan (MS in Biomedical Engineering) 2016 – 2018
Title: Evaluation of a Soft Robotic Knee Exosuit for Assistance in Stair Ascent
Committee Chair: Polygerinos
Currently completing an PhD at ASU

Chloe Houlihan (MS Applied Project) 2017 – 2018
Title: Testing the Relationship Between Dexterity and Cognitive Ability in Healthy Older Adults
Committee Chair: Schaefer
Currently working in industry

Troy Ramos (MS Applied Project; Fulton Schools of Engineering) 2017 – 2018
Title: Quantifying Local Dynamic Stability in Healthy and Fall Prone Adults
Committee Chair: Lockhart
Currently working in industry

Undergraduate Honors Theses

Lauren Berrett (Barrett Honors Senior Thesis, Engineering) 2020 – 2021
Title: gait in people with multiple sclerosis
Committee Chair: Lee

Danielle Keim (Barrett Honors Senior Thesis, CHS) 2019 – 2020
Title: Postural control after varying interventions in children with Autism
Committee Chair, Ringenbach

Cheng Chang (Barrett Honors Senior Thesis, CHS) 2019 – 2020
Title: App Development for facilitating PT at-home exercise prescription
Committee Chair, Holzapfel

Jonathan Talos (Barrett Honors Senior Thesis, Fulton Schools of Engineering) 2019
Title: Gait monitoring for transtibial amputees
Committee Chair: Schaefer

Sydney Connor (Barrett Honors Senior Thesis, Fulton Schools of Engineering) 2016 – 2017
Title: Utilizing Motor Practice to Prime Motor Performance
Committee Chair: Schaefer
PhD Candidate, Johns Hopkins University

Other

Isabel Rosas (SCENE High-school Scholar; Bioscience High School) 2022 – 2023
Topic: Motor Learning and Cognition in people with PD

Achintya Sai (SCENE High-school Scholar; Bioscience High School) 2022 – 2023
Topic: CVLT performance in people with MS
2nd place in Behavioral & Social Science Devision, 1st place award from American Psychological Association, 2023 Arizona Science & Engineering Fair

Katherine Shi (Basis High-school Scholar) 2022 – 2023
Topic: Reactive balance and proprioception in people with PD

Hanna Johannsson, PhD (Visiting PhD student; Karolinska Institute) 2020
Topic: Cognition and motor learning in people with PD
Currently on faculty at Karolinska Institute

Anandita Nadkarni (Summer Intern; Milburn High school) 2017
Topic: Protective postural control in people with PD

Other Research Mentoring at ASU

I provide for-credit research experiences and mentorship to undergraduate (UG) & Graduate (Grad) students each semester

Mentoring Outside of ASU

Committee Chair / co-chair

Graduate: MD

University of Arizona, School of Medicine

Orlando Acuna 2022 – 2024
Project: Dual tasking in Parkinson's disease- clinical samples

Milan Oxspring 2021 – 2024
Project: Changes in EMG across reactive stepping training in those with PD

Andrew Acosta ("Pathway Scholar") 2020 – 2024
Project: Relating Cognition and Depression to learning in people with PD

Graduate: Doctorate in Physical Therapy

Northern Arizona University (NAU), Program in Physical Therapy

Alyssa Martin 2020 – 2021
Thesis: Impacts of "laser shoes" on freezing episodes in people with PD
* Joint project with Rachael Nowak
DSP Co-Chair; Linda Denney (NAU)

Rachael Nowak 2020 – 2021
Thesis: Impacts of "laser shoes" on freezing episodes in people with PD
* Joint project with Alyssa Martin
DSP Co-Chair; Linda Denney (NAU)

Madison Scavarda 2020 – 2021
Thesis: Impacts of "laser shoes" on freezing episodes in people with PD
* Joint project with Kenneth Nagel
DSP Co-Chair; Linda Denney (NAU)

Kenneth Nagel 2020 – 2021
Thesis: Impacts of "laser shoes" on freezing episodes in people with PD
* Joint project with Madison Scavarda
DSP Co-Chair; Linda Denney (NAU)

Sidney Gutierrez 2019 – 2020
Thesis: Dual tasking and postural control in community dwelling older adults
DSP Co-Chair; Linda Denney (NAU)

Wendy Peters 2017 – 2018
Thesis: Understanding Stroke: A Physical Therapy Perspective
DSP Co-Chair; Pamela Bosch (NAU)
**Won 3rd place at Annual NAU 3-minute Research Symposium*

Lisa Britton 2017 – 2018
Thesis: Prioritization of a Cognitive Task and an Increased Risk of Falls in Community Dwelling Older Adults; *Joint project with Alexa Zienka
DSP Co-Chair; Pamela Bosch, (NAU)

Alexa Zienka 2017 – 2018
Thesis: Prioritization of a Cognitive Task and an Increased Risk of Falls in Community Dwelling Older Adults; *Joint project with Lisa Britton
DSP Co-Chair; Pamela Bosch (NAU)

Jenna Martinez 2016 – 2017
Thesis: Dual Task Performance in people with Parkinson's Disease
DSP Co-Chair; Linda Denney (NAU)

Graduate: MS

Oregon Health & Science University

Bauke Dijkstra (MS, Kinesiology) 2013 – 2014
Thesis: Older Adults Improve Postural Control Through Perturbation Training
Visiting Scholar from the University of Groningen, The Netherlands
DSP Committee member; Chair: Yvo Kamsma

Committee Member / Dissertation reader

Graduate: PhD

Colorado State University

Sutton Richmond (PhD, Human Bioenergetics) 2018 – 2020
Thesis: Bridging the Callosal Gap in Gait: A mechanistic Evaluation of White Matter's Role in Bilateral Coordination
Committee Member; Chair: Brett Fling

Ben Gurion University, Be'er Sheva, Israel

Uri Rosenblum Belzer (PhD) 2021
Thesis: Mechanisms of Balance Recovery During Walking in Complex Environments in Healthy Young and Older Adults
Role: External thesis reviewer; Chair: Drs. Melzer & Plotnik

University of New South Wales

Steven Phu (PhD)
Thesis: Understanding the Neuromuscular Mechanisms of Perturbation-Based Balance Training in Older People 2025
Role: External Reader