

## Sydney Y. Schaefer, PhD

Associate Professor  
Director, Motor Rehabilitation and Learning Laboratory  
School of Biological and Health Systems Engineering  
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### PROFESSIONAL PREPARATION

2010-2012 Postdoctoral Associate, Program in Physical Therapy, Washington University in St. Louis School of Medicine  
2008-2009 Postdoctoral Fellow, Department of Biomedical Engineering, Washington University in St. Louis  
2004-2008 PhD, Department of Kinesiology, Pennsylvania State University  
2002-2004 MS, Department of Kinesiology, Pennsylvania State University  
1998-2002 BS, Sports Medicine, Pepperdine University

### ACADEMIC/PROFESSIONAL APPOINTMENTS

2023- Associate Professor (with tenure), Biomedical Engineering, School of Biological and Health Systems Engineering, Arizona State University  
2022- Graduate Program Chair, Biomedical Engineering, School of Biological and Health Systems Engineering, Arizona State University  
2021- Research Affiliate, Mayo Clinic Scottsdale  
2016- Assistant Professor, Biomedical Engineering, School of Biological and Health Systems Engineering, Arizona State University  
2016- Director, Motor Rehabilitation and Learning Laboratory, School of Biological and Health Systems Engineering, Arizona State University  
2012- Adjunct Assistant Professor, Department of Physical Therapy and Athletic Training, University of Utah  
2012-2016 Assistant Professor, Human Movement Science. Department of Kinesiology and Health Science, Utah State University  
2012-2016 Director, Motor Rehabilitation and Learning Laboratory, Department of Health, Physical Education and Recreation, Utah State University

### AWARDS AND HONORS

2023-2025 Fellow, Arizona Alzheimer's Disease Research Center (ADRC) Research Education Component  
2023-2024 Fulbright U.S. Scholars Fellowship (Jönköping University, Sweden)  
2023 Fellow, Engineering for One Planet (EOP), Arizona State University  
2022 Butler-Williams Scholar, National Institute on Aging  
2022 Metin Akay Graduate Service Award, School of Biological and Health Systems Engineering, Arizona State University  
2021 FWA Award for Outstanding Faculty Mentor, Arizona State University Faculty Women's Association  
2021 Eric Gilbeau Outstanding Teaching Award, School of Biological and Health Systems Engineering, Arizona State University  
2020 Inclusive Pedagogy Grant Awardee, ASU Howard Hughes Medical Institute Inclusive Excellence Program  
2020 Outstanding Assistant Professor, School of Biological and Health Systems Engineering, Arizona State University  
2019 Selected attendee, Training in Grantsmanship for Rehabilitation Research (TIGRR) Workshop

2018 Ira A. Fulton Schools of Engineering Top 5% Teaching Award, Arizona State University

2016 Researcher of the Year, Department of Health, Physical Education and Recreation, Utah State University

2014 Recipient, Recognition of Excellence in Mentoring Undergraduate Research, National Council on Undergraduate Research (CUR)

2013 Center for Persons with Disabilities Faculty Fellow Program

2013 Featured Article in the Neurology Section of the American Physical Therapy Association

2012 Exceptional (10+) F1000 Article Factor: F1000.com/13788956#eval15217056

2004 Department of Kinesiology Graduate Research Award, Pennsylvania State University

2002 Summa cum laude, Pepperdine University

2002 Sports Medicine Student of the Year, Pepperdine University

## RESEARCH SUPPORT

### Current Support

07/24-06/25 Principal Investigator. Alzheimer's Association (ARCOM-24-1251824)  
Total cost: \$249,825  
Title: "Towards an equitable alternative for early Alzheimer's disease screening"

10/23-09/24 Co-Investigator. (PI: Love). National Institute on Aging Small Business Innovation Research Grant (R43 AG082604-01A1)  
Total cost: \$369,939  
Title: "Neuroassessments: Developing a quick, objective motor test to prompt cognitive testing in primary care."

09/23-08/25 Principal Investigator. National Institutes of Health Exploratory/Developmental Research Grant Program (R21 AT012088-01-A1)  
Total cost: \$436,303  
Title: "Measuring Expectancy Effects of Transcranial Direct Current Stimulation on Motor Learning"

07/23-06/24 Sub-PI (PI: Coon). Arizona Alzheimer's Consortium.  
Total cost: \$58,000  
Title: "Comparing older adult stress levels associated with cognitive and motor testing to advance earlier dementia screening"

07/23-06/24 Principal Investigator. Edson Initiative for Dementia Care and Solutions, Biodesign Institute, Arizona State University.  
Total cost: \$124,740  
Title: "Comparing state anxiety between cognitive and motor testing among older adults to advance earlier dementia screening"

08/22-07/25 Co-Investigator and Site PI (PI: Schweighofer). National Science Foundation Science of Learning and Augmented Intelligence (SL) Program.  
Subcontract total cost to ASU: \$199,893 (Total award: \$707,000)  
Title: "Personalizing motor learning"

01/22-12/24 Primary Sponsor (Postdoctoral Associate PI: Hooyman). National Institutes of Health Ruth L. Kirschstein Postdoctoral Individual National Research Service Award (F32 AG071110-01A1).  
Total cost: \$211,182

Title: "Using an Online Video Game to Predict Functional and Cognitive Decline within the MindCrowd Electronic Cohort"

09/21-12/24 Principal Investigator. Private donor.  
Total cost: \$65,414  
Title: "Developing equitable and inclusive biomarkers of Alzheimer's disease for minorities"

Previous Support

01/22-12/23 Principal Investigator. Global Sport Institute Seed Grant, Arizona State University  
Total cost: \$20,000  
Title: "Exploring the effects of tDCS user expectations on motor performance enhancement: Harnessing the power of placebo effects within neuro-technology"

07/22-06/23 Sub-PI (PI: Coon). Arizona Alzheimer's Consortium.  
Total cost: \$35,417  
Title: "Establishing feasibility and dose-response of an online visuospatial training program for older adults"

07/21-06/22 Sub-PI (PI: Coon). Arizona Alzheimer's Consortium.  
Total cost: \$35,000  
Title: "Mobile phone accessibility of a motor-cognitive game within MindCrowd to increase participation among underrepresented minorities"

01/21-12/21 Principal Investigator. Global Sport Institute Sex, Gender, and Sexuality in Sport Seed Grant, Arizona State University  
Total cost: \$20,000  
Title: "Gender differences in expectancy effects of transcranial direct current stimulation on motor performance"

12/18-11/21 Primary Sponsor (Graduate student PI: Lingo VanGilder). National Institutes of Health Ruth L. Kirschstein Predoctoral Individual National Research Service Award (F31 AG062057).  
Total cost: \$125,485  
Title: "Using diffusion tensor imaging to identify the structural neural correlates of visuospatial and motor skill learning processes"

2018-2021 Principal Investigator. National Institutes of Health Small Grant Program (R03 AG056822)  
Total cost: \$156,729  
Title: "Using standardized visuospatial tests to predict motor training responsiveness in older adults"

2021 Sub-PI (PI: Coon). Arizona Alzheimer's Consortium.  
Total cost: \$16,000  
Title: "Relating Online Motor-Cognitive Game Performance with AD Risk Factors using the MindCrowd Electronic Cohort"

2015-2020 Principal Investigator. National Institute on Aging Mentored Research Scientist Development Award (K01 AG047926)  
Total cost: \$543,178  
Title: "Generalization of functional task-specific motor training in older adults"

2014-2015 Principal Investigator. Marriner S. Eccles Foundation  
Total cost: \$5,000  
Title: "Training and Rehab for Motor Function"

- 2010-2012 Principal Investigator. American Heart Association Postdoctoral Fellowship, Midwest Affiliate (AHA 10POST4140091)  
Total cost: \$90,772  
Title: "Movement context and its influence on function following stroke"
- 2008-2009 Postdoctoral Trainee (PI: Mueller). National Institute of Child Health and Human Development (T32 HD007434 to the Program in Physical Therapy), Washington University  
Title: "Training program in Movement Science"
- 2005-2008 Predoctoral Trainee (PI: Zarit, Willis). National Institute on Aging (T32 AG00048 to the Gerontology Center), Pennsylvania State University  
Title: "Interdisciplinary training in Gerontology"

Pending Support

- 12/24-11/29 Principal Investigator. National Institutes of Health Research Project Grant Program (R01AG091339-01)  
Total cost: \$2,598,804  
Title: "Developing a performance-based measure of daily function as an equitable approach to screening Hispanic/Latino older adults for Alzheimer's disease risk"

**PEER-REVIEWED PUBLICATIONS**

1. Koppelmans V, Ruitenbergh MFL, **Schaefer SY**, King JB, Jacobo JM, Silvester BP, Mejia AF, van der Geest J, Hoffman JM, Tasdizen T, Duff K. (accepted) Classification of Mild Cognitive Impairment and Alzheimer's Disease Using Manual Motor Measures. *Neurodegenerative Diseases*.
2. Reed AM, Duff K, Dibble LE, Paul SS, Hooyman A, **Schaefer SY**. (2024) Examining the diagnostic accuracy of a novel performance-based test for Alzheimer's disease screening. *Journal of Prevention of Alzheimer's Disease*. In press.
3. Hooyman A, Haikalis NK, Wang P, Schambra HM, Lohse KR, **Schaefer SY**. (2024) Evidence and sources of placebo effects in transcranial direct current stimulation during visuospatial working memory training. *Scientific Reports*. 14:9094. doi: 10.1038/s41598-024-59927-2.
4. Bergamino M, Keeling E, **Schaefer SY**, Burke A, Prigatano G, Stokes AM. (2024) White Matter Microstructure Analysis in Subjective Memory Complaints and Cognitive Impairment: Insights from Diffusion Kurtosis Imaging and Free-Water DTI. *Journal of Alzheimer's Disease*. 98(3):863-884. doi: 10.3233/JAD-230952.
5. Haikalis NK, Hooyman A, Wang P, Daliri A, **Schaefer SY**. (2023) Placebo effects of transcranial direct current stimulation on motor skill acquisition. *Neuroscience Letters*. 814:137442. doi: 10.1016/j.neulet.2023.137442.
6. Koppelmans V, Ruitenbergh MFL, **Schaefer SY**, King JB, Hoffman JM, Mejia AF, Tasdizen T, Duff K. (2023) Delayed and More Variable Unimanual and Bimanual Finger Tapping in Alzheimer's Disease: Associations with Biomarkers and Applications for Classification. *Journal of Alzheimer's Disease*. 95(3):1233-1252. doi: 10.3233/JAD-221297.
7. Hooyman A, **Schaefer SY**. (2023) Age and sex effects on SuperG performance consistent across internet devices. *International Journal of Serious Games*. 10(2):25-36. doi: 10.17083/ijsg.v10i2.598.
8. Malek-Ahmadi M, Duff K, Chen K, Su Y, King JB, **Schaefer SY**. (2023) Volumetric MRI and Neuropsychological Predictors of Motor Task Variability in Cognitively Unimpaired, Mild Cognitive Impairment, and Alzheimer's Disease Older Adults. *Experimental Gerontology*. 173:112087.
9. Hooyman A, Huentelman MJ, DeBoth MD, Ryan L, **Schaefer SY**. (2023) Establishing the validity and reliability of an online motor learning game: Applications for Alzheimer's disease research within MindCrowd. *Games for Health*. 12(2):132-139. doi: 10.1089/g4h.2022.0042.

10. Hooyman A, Lingo VanGilder JL, **Schaefer SY**. (2023) Mediation analysis of the effect of visuospatial memory on motor skill learning in older adults. *Journal of Motor Behavior*. 55(1):68-77. doi: 10.1080/00222895.2022.2105793
11. **Schaefer SY**, Hooyman A, Haikalis NK, Essikpe R, Lohse KR, Duff K, Wang P. (2022) Efficacy of Corsi Block Tapping Task training for improving visuospatial skills: A nonrandomized two-group study. *Experimental Brain Research*. 240(11):3023-3032. doi: 10.1007/s00221-022-06478-5
12. Wang P, Lingo VanGilder JL, Schweighofer N, **Schaefer SY**. (2022) Rey-Osterrieth Complex Figure Recall scores and motor skill learning in older adults: A non-linear mixed effect model-based analysis. *Human Movement Science*, 86:103004. doi: 10.1016/j.humov.2022.103004
13. Lingo VanGilder JL, Bergamino M, Hooyman A, Fitzhugh MC, Rogalsky C, Stewart JC, Beeman SC, **Schaefer SY**. (2022) Using whole-brain diffusion tensor analysis to evaluate white matter structural correlates of delayed visuospatial memory and one-week motor skill retention in nondemented older adults: A preliminary study. *PLoS One*. 17(9):e0274955. doi: 10.1371/journal.pone.0274955
14. Olivier GN, Dibble LE, Paul SS, Lohse KR, Walter CS, Marker RJ, Hayes HA, Foreman KB, Duff K, **Schaefer SY**. (2022) Effects of personalized practice dosages on learning in older adults: A randomized controlled trial. *Frontiers in Rehabilitation Science*. 3:897997. doi: 10.3389/freesc.2022.897997
15. Wang P, Pathania A, Euler MJ, Duff K, **Schaefer SY**. (2022) Investigating the relationship between resting-state EEG frontoparietal coherence, visuospatial ability, and motor skill acquisition – a retrospective analysis. *NeuroRegulation*. 9(2): 82-90. doi: 10.15540/nr.9.2.82
16. **Schaefer SY**, Malek-Ahmadi M, Hooyman A, King JB, Duff K. (2022) Association between motor task acquisition and hippocampal atrophy across cognitively unimpaired, amnesic Mild Cognitive Impairment, and Alzheimer's disease individuals. *Journal of Alzheimer's Disease*. 85(4):1411-1417. doi: 10.3233/JAD-210665.
17. Rangarajan V, Schreiber JJ, Barragan B, **Schaefer SY**, Honeycutt CF. (2022) Sensorimotor and Autonomic Contributions of the Brainstem in Physiological and Pathophysiological Conditions. *Frontiers in Neural Circuits*. 15:681706. doi: 10.3389/fncir.2021.681706.
18. **Schaefer SY**, Duff K, Hooyman A, Hoffman JM. (2022) Improving the prediction of amyloid deposition in Mild Cognitive Impairment with a timed motor task. *American Journal of Alzheimer's Disease and Other Dementias*. 37:15333175211048262. doi: 10.1177/15333175211048262.
19. Lingo VanGilder JL, Lopez-Lennon C, Paul SS, Dibble LE, Duff K, **Schaefer SY**. (2021) Relating global cognition and upper-extremity motor skill retention in individuals with mild-to-moderate Parkinson disease. *Frontiers in Rehabilitation Sciences*, 2:754118. doi: 10.3389/freesc.2021.754118.
20. Hooyman A, Talboom JS, DeBoth MD, Ryan L, Huentelman M, **Schaefer SY**. (2021) Remote, unsupervised functional motor task evaluation across the United States using the MindCrowd electronic cohort. *Developmental Neuropsychology*. 46(6):435-446. doi: 10.1080/87565641.2021.1979005.
21. Olivier GN, Walter CS, Paul SS, Dibble LE, **Schaefer SY**. (2021) How Common is the Exponential Decay Pattern of Motor Skill Acquisition? A Brief Investigation. *Motor Control*, 25(3): 451-461. doi: 10.1123/mc.2020-0043.
22. Lingo VanGilder J, Hooyman A, Bosch PR, **Schaefer SY**. (2021) Generalizing the predictive relationship between 1-month motor skill retention and Rey-Osterrieth Delayed Recall scores from nondemented older adults to individuals with chronic stroke: a short report. *Journal of NeuroEngineering and Rehabilitation*, 18(1): 94. doi: 10.1186/s12984-021-00886-4.
23. Wang P, Hooyman A, Schambra HM, Lohse KR, **Schaefer SY**. (2021) Expectations from the general public about the efficacy of transcranial direct current stimulation for improving motor performance. *Brain Stimulation*, 14(3): 500-502. doi: 10.1016/j.brs.2021.03.005.

24. Hooyman A, Wang P, **Schaefer SY**. (2021) Age-related differences in functional tool-use are due to changes in movement quality and not simply motor slowing. *Experimental Brain Research*, 239(5):1617-1626. doi: 10.1007/s00221-021-06084-x.
25. Olivier GN, Paul SS, Walter CS, Hayes HA, Foreman KB, Duff K, **Schaefer SY**, Dibble LE. (2021) The feasibility and efficacy of a serial reaction time task that measures motor learning of anticipatory stepping. *Gait & Posture*, 86: 346-353. doi: 10.1016/j.gaitpost.2021.04.002.
26. Lingo VanGilder J, Lohse KR, Duff K, Wang P, **Schaefer SY**. (2021) Evidence for associations between Rey-Osterrieth Complex Figure test and motor skill learning in older adults. *Acta Psychologica*, 214:103261. doi: 10.1016/j.actpsy.2021.103261.
27. Stewart JC, Saba A, Baird J, Kolar M, O'Donnell M, **Schaefer SY**. (2021) Effect of Standing on a Standardized Measure of Upper Extremity Function. *OTJR: Occupation, Participation and Health*, 41(1): 32-39. doi: 10.1177/1539449220937058.
28. Regan E, Fridriksson J, **Schaefer SY**, Rorden C, Bonilha L, Lingo VanGilder J, Stewart JC. (2021) Neural correlates of within-session practice effects in mild motor impairment after stroke: a preliminary investigation. *Experimental Brain Research*. 239(1):151-160. doi: 10.1007/s00221-020-05964-y.
29. Hooyman A, Malek-Ahmadi M, Fauth EB, **Schaefer SY**. (2021) Challenging the relationship of grip strength with cognitive status in older adults. *International Journal of Geriatric Psychiatry*, 36(3):433-442. doi: 10.1002/gps.5441.
30. Fitzhugh MC, **Schaefer SY**, Baxter LC, Rogalsky C. (2020) Cognitive and neural predictors of speech comprehension in noisy backgrounds in older adults. *Language, Cognition, and Neuroscience*, 36(3):269-287. doi: 10.1080/23273798.2020.1828946.
31. **Schaefer SY**, Hooyman A, Duff K. (2020) Using a timed motor task to predict one-year functional decline in amnesic Mild Cognitive Impairment. *Journal of Alzheimer's Disease*, 77(1):53-58. doi: 10.3233/JAD-200518.
32. Lingo VanGilder JL, Hooyman A, Peterson DS, **Schaefer SY**. (2020) Post-stroke cognitive impairments and responsiveness to motor rehabilitation: A review. *Current Physical Medicine and Rehabilitation Reports*, 8:461–468. doi: 10.1007/s40141-020-00283-3.
33. Wang P, Infurna FJ, **Schaefer SY**. (2020). Predicting motor skill learning with the Visuospatial/Executive subtest of the Montreal Cognitive Assessment. *Journal of Motor Learning and Development*, 8(1): 38-51. doi: 10.1123/jmld.2018-0017.
34. Paul SS, Dibble LE, Walter CS, Olivier GN, Duff K, **Schaefer SY**. (2020) Dopamine replacement improves motor learning of an upper extremity task in people with Parkinson disease. *Behavioural Brain Research*. 377:112213. doi: 10.1016/j.bbr.2019.112213.
35. Lingo VanGilder JL, Walter CS, Hengge CR, **Schaefer SY**. (2020) Exploring the relationship between visuospatial function and age-related deficits in motor skill transfer. *Aging Clinical and Experimental Research*, 32(8):1451-1458. doi: 10.1007/s40520-019-01345-w.
36. **Schaefer SY**, Sullivan JM, Peterson DS, Fauth EB. (2020). Cognitive function at admission predicts amount of gait speed change in geriatric physical rehabilitation. *Annals of Physical and Rehabilitation Medicine*, 63(4):359-361. doi: 10.1016/j.rehab.2019.08.004.
37. Fitzhugh MC, Hemesath A, **Schaefer SY**, Baxter LC, Rogalsky C. (2019) Changes in functional connectivity of Heschl's gyrus due to age-related hearing loss: a resting-state fMRI study. *Frontiers in Psychology*, 10:2485. doi: 10.3389/fpsyg.2019.02485.
38. Zhou J, **Schaefer SY**, Smith BA. (2019). Quantifying caregiver movement when measuring infant movement across a full day: A case report. *Sensors*, 19(13), 2886. doi: 10.3390/s19132886.
39. Olivier GN, Paul SS, Lohse KR, Walter CS, **Schaefer SY**, Dibble LE. (2019). Predicting Motor Sequence Learning in People with Parkinson Disease. *Journal of Neurologic Physical Therapy*, 43(1):33-41. doi: 10.1097/NPT.0000000000000251.
40. Walter CS, Hengge CR, Lindauer BE, **Schaefer SY**. (2019). Declines in motor transfer following task-specific training in older adults. *Experimental Gerontology*, 116:14-19. doi: 10.1016/j.exger.2018.12.012.

41. Paul SS, **Schaefer SY**, Olivier GN, Walter CS, Lohse KR, Dibble LE. (2018). Dopamine replacement medication does not influence implicit learning of a stepping task in people with Parkinson's disease. *Neurorehabilitation and Neural Repair*, 32(12):1031-1042. doi: 10.1177/1545968318809922.
42. **Schaefer SY**, Saba A, Baird J, Kolar MB, Duff K, Stewart JC. (2018). Within-session practice effects in the Jebsen Hand Function Test: Good or bad? *American Journal of Occupational Therapy*, 72(6): 7206345010p1-7206345010p5. doi:10.5014/ajot.2018.024745.
43. Kirkpatrick NJ, Ravichandran VJ, Perrault EJ, **Schaefer SY**, Honeycutt CF. (2018). Evidence for startle as a measurable behavioral indicator of motor learning. *PLoS One*, 13(5):e0195689. doi: 10.1371/journal.pone.0195689.
44. Raikes AC, **Schaefer SY**, Studenka BE. (2018) Concussion history is negatively associated with visual-motor force complexity: evidence for persistent effects on visual-motor integration. *Brain Injury*, 32(6):747-754. doi: 10.1080/02699052.2018.1444204.
45. Lingo VanGilder JL, Hengge CR, Duff K, **Schaefer SY**. (2018) Visuospatial function predicts one-week motor skill retention in cognitively intact older adults. *Neuroscience Letters*, 664:139-143. doi: 10.1016/j.neulet.2017.11.032.
46. Mohabbati-Kalejahi N, Yazdi MAA, Fadel M, **Schaefer SY**, Boyd LA, Lang CE, Lohse KR. (2017) Streamlining science with structured data archives: Insights from stroke rehabilitation. *Scientometrics*, 113(2): 969–983. doi: 10.1007/s11192-017-2482-z.
47. Duff K, Atkinson T, Suhrie K, Dalley B, **Schaefer SY**, Hammers DB. (2017). Short-term practice effects in Mild Cognitive Impairment: Evaluating different methods of change. *Journal of Clinical and Experimental Neuropsychology*, 39(4): 396-407. doi: 10.1080/13803395.2016.1230596.
48. **Schaefer SY**, Duff K. (2017). Within-session and one-week practice effects on a motor task in amnesic Mild Cognitive Impairment. *Journal of Clinical and Experimental Neuropsychology*, 39(5):473-484. doi: 10.1080/13803395.2016.1236905.
49. Fauth EB, **Schaefer SY**, Zarit SH, Ernsth-Bravell M, Johansson B. (2017) Beyond grip strength: Associations between fine motor performance in activities of daily living and cognitive ability in a non-demented sample of older adults. *Journal of Aging and Health*, 29(7): 1144-1159. doi: 10.1177/0898264316654674.
50. Raikes AC, **Schaefer SY**. (2016). Sleep quantity and quality during acute concussion: A pilot study. *Sleep*, 39(12):2141-2147. doi: 10.5665/sleep.6314.
51. Lohse KR, **Schaefer SY**, Raikes AC, Boyd LA, Lang CE. (2016). Asking new questions with old data: The Centralized Open-Access Rehabilitation database for Stroke. *Frontiers in Neurology*, 7:153. doi: 10.3389/fneur.2016.00153.
52. Raikes AC, **Schaefer SY**. (2016). Phasic electrodermal activity during the standardized assessment of concussion. *Journal of Athletic Training*, 51(7): 533-9. doi: 10.4085/1062-6050-51.8.09.
53. Sainburg RL, **Schaefer SY**, Yadav V. (2016). Lateralized motor control processes determine asymmetry of interlimb transfer. *Neuroscience*, 334:26-38. doi: 10.1016/j.neuroscience.2016.07.043.
54. **Schaefer SY**, Hengge CR. (2016) Testing the concurrent validity of a naturalistic upper extremity reaching task. *Experimental Brain Research*, 234(1): 229-240. doi: 10.1007/s00221-015-4454-y.
55. **Schaefer SY**, Louder T, Foster S, Kohler B, Bressel E. (2016) Effect of water immersion on dual task performance: Implications for aquatic therapy. *Physiotherapy Research International*, 21(3): 147–154. doi: 10.1002/pri.1628.
56. **Schaefer SY**, Duff K. (2015) Rapid responsiveness to practice predicts longer-term retention of upper extremity motor skill in non-demented older adults. *Frontiers in Aging Neuroscience*, 7:214. doi: 10.3389/fnagi.2015.00214.
57. Hayes HA, Hunsaker N, **Schaefer SY**, Shultz B, Schenkenberg T, Boyd LA, White A, Foreman B, Dyer P, Maletsky R, Dibble LE. (2015) Does dopamine replacement medication affect

- postural sequence learning in Parkinson Disease? *Motor Control*, 19(4):325-40. doi: 10.1123/mc.2014-0039.
58. **Schaefer SY**. (2015) Preserved motor asymmetry in late adulthood: Is measuring chronological age enough? *Neuroscience*, 294:51-9. doi: 10.1016/j.neuroscience.2015.03.013.
  59. **Schaefer SY**, Dibble LE, Duff K. (2015) Efficacy and feasibility of functional upper extremity task-specific training for older adults with and without cognitive impairment. *Neurorehabilitation and Neural Repair*, 29(7):636-644. doi: 10.1177/1545968314558604.
  60. Norton MC, Clark CJ, Tschanz JT, Hartin P, Fauth EB, Gast J, Dorsch TE, Wengreen H, Nugent C, Robinson D, Lefevre M, McClean S, Cleland I, **Schaefer SY**, Aguilar S. (2015) The design and progress of a multi-domain lifestyle intervention to improve brain health in middle-aged persons to reduce later Alzheimer's disease risk: The Gray Matters randomized trial. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 1(1):53-62. doi: 10.1016/j.trci.2015.05.001.
  61. **Schaefer SY**, Patterson CB, Lang CE. (2013) Transfer of training between distinct motor tasks after stroke: Implications for task-specific approaches to upper extremity neurorehabilitation. *Neurorehabilitation and Neural Repair*, 27(7):602-612. doi: 10.1177/1545968313481279.
  62. Lang CE, Bland MD, Bailey RR, **Schaefer SY**, Birkenmeier RL. (2013) Assessment of upper extremity impairment, function, and activity following stroke: Foundations for clinical decision making. *Journal of Hand Therapy*, 26(2):104-14. doi: 10.1016/j.jht.2012.06.005.
  63. **Schaefer SY**, Lang CE. (2012) Using dual tasks to test immediate transfer of training between naturalistic movements in a single session: A proof-of-principle study. *Journal of Motor Behavior*, 44(5):313-27. doi: 10.1080/00222895.2012.708367.
  64. **Schaefer SY**, DeJong SL, Cherry KM, Lang CE. (2012) Grip type and task goal modify reach-to-grasp performance in post-stroke hemiparesis. *Motor Control*, 16(2):245-64. doi: 10.1123/mcj.16.2.245.
  65. DeJong SL, **Schaefer SY**, Lang CE. (2012) The need for speed: Better movement quality during faster task performance after stroke. *Neurorehabilitation and Neural Repair*, 26:362-73. doi: 10.1177/1545968311425926.
  66. **Schaefer SY**, Shelly IL, Thoroughman KA. (2012) Beside the point: Motor adaptation without feedback-based error correction in task-irrelevant conditions. *Journal of Neurophysiology*, 107:1247-56. doi: 10.1177/1539449220937058.
  67. **Schaefer SY**, Mutha PK, Haaland KY, Sainburg RL. (2012) Hemispheric specialization for movement control produces dissociable differences in online corrections after stroke. *Cerebral Cortex*, 22:1407-19. doi: 10.1093/cercor/bhr237.
  68. **Schaefer SY**, Haaland KY, Sainburg RL. (2009) Dissociation of initial trajectory and final position errors during visuomotor adaptation following unilateral stroke. *Brain Research*, 1298:78-91. doi: 10.1016/j.brainres.2009.08.063.
  69. **Schaefer SY**, Haaland KY, Sainburg RL. (2009) Hemispheric specialization and functional impact of ipsilesional deficits in movement coordination and accuracy. *Neuropsychologia*, 47:2953-66. doi: 10.1016/j.neuropsychologia.2009.06.025.
  70. Haaland KY, **Schaefer SY**, Knight RT, Adair J, Magalhaes A, Sadek J, Sainburg RL. (2009) Ipsilesional trajectory control is related to contralesional arm paralysis after left hemisphere damage. *Experimental Brain Research*, 196: 195-204. doi: 10.1007/s00221-009-1836-z.
  71. **Schaefer SY**, Sainburg RL. (2008) Sequential processes for controlling distance in multijoint movements. *Journal of Motor Behavior*, 40:325-336. doi: 10.3200/JMBR.40.4.325-336.
  72. **Schaefer SY**, Haaland KY, Sainburg RL. (2007) Ipsilesional motor impairments following stroke reflect lateralization of movement control. *Brain*, 130:2146-2158. doi: 10.1093/brain/awm145.
  73. Sainburg RL, **Schaefer SY**. (2004) Interlimb differences in control of movement extent. *Journal of Neurophysiology*, 92:1374-1383. doi: 10.1152/jn.00181.2004.

### Editorials



1. **Schaefer SY**, McCulloch KL, Lang CE. (2022) Pondering the Cognitive-Motor Interface in Neurologic Physical Therapy. *Journal of Neurologic Physical Therapy*, 46(1):1-2. doi: 10.1097/NPT.0000000000000381.

Under Review

1. Reed AM, Hooyman A, Lee NM, Fauth EB, Love JW, **Schaefer SY**. Examining the decision to take a dementia risk test: Considerations for screening under-represented populations. *Gerontology*.
2. Koppelmans V, Duff K, **Schaefer SY**. Using a Functional Upper Limb Motor Task to Predict Cognitive and Functional Decline in Mild Cognitive Impairment and Alzheimer’s Disease. *Neurorehabilitation and Neural Repair*.

**PATENTS AND START-UP COMPANIES**

1. Schaefer SY. Systems and Methods for Diagnosis and Prognosis of Cognitive Impairment. Provisional US patent application number 63/284,580. Filed 11/30/2021.
2. Neuroassessments LLC (Founder and Managing Member).

**SUMMARY OF PRESENTATIONS (detailed list available upon request)**

Invited Presentations: 30

Peer-reviewed Conference Symposia: 2

Peer-reviewed Conference Presentations, including students: 80+

**SUMMARY OF PROFESSIONAL ACTIVITIES AND SERVICE (detailed list available upon request)**

Journal Editorial Service)

1. Associate Editor, *Journal of the International Neuropsychological Society*
2. Associate Guest Editor, *Journal of Neurologic Physical Therapy* Special Issue on Interactions of Cognition with Movement and Rehabilitation (2020-2021)

International/National Conferences Symposia

1. “Antecedents and Outcomes of Disability Across the Adult Lifespan” (Session 3265), 2017 IAGG World Congress of Gerontology and Geriatrics, San Francisco, CA (2017)
2. “Out of the Clinic and Into the Home: How Remote Assessment and Intervention can Enhance Neurorehabilitation and Neuroscience” symposium. (2023). American Society of Neurorehabilitation Annual Meeting, Charleston, SC.

Peer-Reviewed Journal Referee

Physical & Occupational Therapy in Geriatrics	Neuroscience Letters
Clinical Interventions in Aging	Topics in Stroke Rehabilitation
Brain	Experimental Brain Research
Human Movement Science	Journal of Neurophysiology
Frontiers in Aging Neuroscience	Alzheimer’s & Dementia
Journal of Alzheimer’s Disease	IEEE Transactions on Neural Systems and Rehabilitation Engineering
Developmental Neuropsychology	PLOS one
Journal of NeuroEngineering and Rehabilitation	Frontiers in Neurology (Frontiers in Stroke Special Issue)
Journal of Motor Behavior	IEEE Transactions on Industrial Electronics
American Journal of Occupational Therapy	Journal of Aging and Physical Activity

Journal of Clinical and Experimental  
Neuropsychology  
Neurorehabilitation and Neural Repair  
Research Quarterly for Exercise and Sport  
Muscle and Nerve  
Cerebral Cortex  
Journal of Cognitive Neuroscience  
Motor Control

Disability and Rehabilitation Neuroscience  
Journal of Neurologic Physical Therapy  
Annals of Biomedical Engineering  
Archives of Physical Medicine and  
Rehabilitation  
Cortex  
Journal of Physical Education and Sport  
Management

Grant Proposal Review Panel, Standing Study Section Member

1. Study Section Chair (2024-present), Department of Veterans Affairs, RRD9 - Career Development Program
2. Standing Study Section Member, Department of Veterans Affairs, RRD9 - Career Development Program (2020-2024)
3. Study Section Member, American Heart Association, Fellowship Bioengineering & Technology (2019-2023)