
CURRICULUM VITAE
Michael VanNostrand, Phd

Wayne State University
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EDUCATION

Ph.D. Human Functioning and Rehabilitation Science University of Vermont, Burlington, VT	October 2023
M.S. Exercise Science – Clinical Liberty University, Lynchburg, VA	August 2017
B.S. Biology SUNY at Albany, Albany, NY	May 2016

ACADEMIC POSITIONS AND EXPERIENCE

Postdoctoral Fellow Department of Physical Therapy Wayne State University	2023 - present
Adjunct Professor Department of Rehabilitation and Movement Science University of Vermont, Burlington, VT	2022 - 2023
Graduate Research Assistant Department of Rehabilitation and Movement Science University of Vermont, Burlington, VT	2019 - 2021
Adjunct Professor Department of Physical Therapy SUNY Upstate Medical University, Syracuse, NY	2019
Clinical Research Coordinator Motion Analysis Lab SUNY Upstate Medical University, Syracuse, NY	2017 - 2019
Clinical Exercise Physiologist SUNY Upstate Medical University, Syracuse, NY	2017

PUBLICATIONS

Published Papers (reverse chronological)

- VanNostrand M**, Monaghan PG, Fritz NE. Examination of proprioceptive reliance during backward walking in individuals with multiple sclerosis. *Journal of Neurologic Physical Therapy*. Accepted*
- Bae M, Khodabandeloo S, **VanNostrand M**, Gell NM, Kasser SL. Reliability and validity of the ratings of perceived stability scale as a measure of balance exercise intensity in persons with multiple sclerosis. *Disability and Rehabilitation*. 2024;1-7.
- Bae M, **VanNostrand M**, Burt KB, Kasser SL. Contribution of dual-tasking to social participation in persons with multiple sclerosis: A structural equation modeling approach. *Multiple Sclerosis and Related Disorders*. 2024;90:105835.
- VanNostrand M**, Monaghan PG, Daugherty AM, Fritz NE. Study protocol of a randomized controlled trial comparing backward walking to forward walking training on balance in multiple sclerosis: The TRAIN-MS trial. *Contemporary Clinical Trials*. 2024;144:107621.
- VanNostrand M**, Bae M, Ramsdell JC, Kasser SL. Information processing speed and disease severity predict real-world ambulation in persons with multiple sclerosis. *Gait & Posture*. 2024;111:99-104.
- Bae M, Ku B, **VanNostrand M**, Kasser SL. Home-based Balance Training on Balance and Mobility in Persons with Multiple Sclerosis: A Systematic Review and Meta-analysis. *Archives of Physical Medicine and Rehabilitation*. 2024.
- VanNostrand M**, Monaghan PG, Fritz NE. Backwards walking speed reserve in persons with multiple sclerosis. *Multiple Sclerosis and Related Disorders*. 2024;85:105556.
- VanNostrand M**, Emberley K, Cairns E, Shanahan K, Kasser SL. Mobility and Dual Tasking in the Everyday Lives of Adults with Multiple Sclerosis: A Qualitative Exploration. *Adapt Phys Activ Q*. 2023:1-16.
- Giroux C, Sogoloff B, Bergmans L, Bae M, **VanNostrand M**, Kasser SL. An Exploratory Study of Community Mobility in Adults With Multiple Sclerosis Across Different Ambulation Levels. *Int J MS Care*. 2023;25(4):145-151.
- VanNostrand M**, Sogoloff B, Giroux C, Bergmans L, Kasser SL. Predicting falls in adults with multiple sclerosis using patient-reported measures: Are perceptions of dual-tasking missing? *Mult Scler Relat Disord*. 2022;68:104115.
- VanNostrand M**, Belanger B, Purin G, Kasser SL, Cannizzaro M. Cognitive-Motor Interference and Cortical Activation While Walking in Individuals With Multiple Sclerosis. *Motor Control*. 2022;26(4):677-693.

VanNostrand M, Rieger B, Baracks J, Neville C. Development and initial validation of a digital divided-attention neurocognitive test for use in concussion assessment. *Brain Inj.* 2019;33(7):941-951.

Articles in Review

Bae M, **VanNostrand M**. Cognition and real-world derived measures of physical activity and gait quality in individuals with multiple sclerosis: A systematic review. *Neurorehabilitation and Neural Repair*.

Bae M, Khodabandeloo S, **VanNostrand M**, Gell NM, Kasser SL. Identifying a method for balance exercise intensity in persons with multiple sclerosis: rating of perceived stability versus task complexity. *Disability and Rehabilitation*.

Abbawi MM, **VanNostrand M**, Monaghan PG, Takla TN, Yu B, Daugherty AM, Stanley J, Fritz NE. Structural and Functional Changes with 8 Weeks of Backward Walking Training in Multiple Sclerosis: A Case Series. *Journal of Neurologic Physical Therapy*.

VanNostrand M, Bae M, Kasser SL. Attentional dynamics and gait stability in persons with multiple sclerosis. *International journal of MS care*.

VanNostrand M, Bae M, Lloyd N, Kasser SL. The bridge to real-world ambulation: Examining the ecological validity of the timed up and go and novel dual task clinical assessments. *Clinical Biomechanics*

VanNostrand M, Bae M, Khodabandeloo S, Kasser SL. Beyond the timed up and go: A Preliminary Examination of Novel Dual Task Fall Risk Assessments in Persons with Multiple Sclerosis. *Archives of Physical Medicine and Rehabilitation*.

GRANTS/FUNDING SUPPORT

Pending

Title: Sensory Reweighting During Walking in Individuals with Multiple Sclerosis: The Bridge to Real-World Ambulation

Role: Co-PI

Agency: Consortium of Multiple Sclerosis Centers

Type: Pilot Research Fund

Award: \$40,000

Date: **Submitted August 2024**

Title: Impact of Modifiable Psychosocial Factors on **Community Participation and Engagement** in Multiple Sclerosis: (COPE:MS)

Role: PI

Agency: National Multiple Sclerosis Society

Type: Postdoctoral Research Fellowship Award

Award: \$202,000

Date: **Submitted August 2024**

Submitted

Title: Sensory Reweighting During Walking in Individuals with Multiple Sclerosis: The Bridge to Real-World Ambulation

Role: Co-PI

Agency: Wayne State University Departments of Neurology, Psychiatry, and Behavior Sciences

Type: Albert and Goldye J. Nelson Research Fund

Award: \$100,000

Date: **Submitted March 2024, Not funded**

CONFERENCE PROCEEDINGS AND PRESENTATIONS

Meeting Abstracts and Presentations

Note: Presentations marked * indicate refereed.

- *Monaghan PG, **VanNostrand M**, Abbawi MM, Fritz NE. Backward if the Way Forward: Preliminary Effectiveness of a Backward Walking Intervention in People with Multiple Sclerosis. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- ***VanNostrand M**, Monaghan PG, Fritz NE. Examination of proprioceptive reliance during backward walking in individuals with multiple sclerosis. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- *Bae M, Khodabandeloo S, Minnerly S, **VanNostrand M**, Gell N, Kasser SL. Balance Training in Persons with Multiple Sclerosis: Validating a Clinical Measure of Balance Exercise Intensity. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- *Lloyd N, Kasser SL, **VanNostrand M**. The Effects of Axial Loading on Real-World Ambulation in Persons with Multiple Sclerosis: A Pilot Study. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- *Takla TN, Monaghan PM, Abbawi MM, **VanNostrand M**, Fritz NE. Predictors of Falls and Concern about Falling in Persons with Relapsing-Remitting MS. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- *Abbawi MM, Stanley J, **VanNostrand M**, Monaghan PG, Yu B, Myers, Fritz NE. Backward Walking Training can Improve Motor Function and Brain Structure in Patients with Multiple Sclerosis: A Case Series. 2024 Consortium of Multiple Sclerosis Centers, Nashville, TN.
- ***VanNostrand M**, Bae M, Kasser SL. Attention, walking speed, and automaticity during gait in adults with and without multiple sclerosis. 2023 Consortium of Multiple Sclerosis Centers, Aurora, CO.
- ***VanNostrand M**, Bae M, Kasser SL. Appraising fall risk in adults with multiple sclerosis using novel, ecologically valid mobility assessments: The bridge to understanding real-world ambulation. 2023 Consortium of Multiple Sclerosis Centers, Aurora, CO.

***VanNostrand M**, Bae M, Kasser SL. Effects of attentional focus on self-paced walking in individuals with multiple sclerosis. North American Federation of Adapted Physical Activity 2022, St. Catharines, ON, CA.

*Bae M, **VanNostrand M**, and Kasser SL. Effects of attentional focus on gait stability, turning, and cortical activation in adults with multiple sclerosis. North American Federation of Adapted Physical Activity 2022, St. Catharines, ON, CA.

Giroux C, Sogoloff B, Bergmans L, Bae M, **VanNostrand M**, Kasser SL. Predicting falls in adults with multiple sclerosis using patient-reported measures: Are perceptions of dual-tasking missing? 2022 Zeigler Research Forum, Burlington, VT.

VanNostrand M, Emberley K, Shanahan K, Cairns E, Sogoloff B, Giroux C, Bergmans L, Kasser SL (May 2021). Mobility and multitasking in individuals with multiple sclerosis. 2022 Zeigler Research Forum, Burlington, VT.

***VanNostrand M**, Belanger B, Kasser SL, Cannizzaro M. Cognitive motor interference and cortical activation while walking in individuals with multiple sclerosis. MSVirtual2020, joint ACTRIMS-ECTRIMS meeting.

***VanNostrand M**, Levitskiy D, Brindle A, Neville C. Objective mobility measures strengthen current assessments for identifying fall risk in older adults. 2019 American Physical Therapy Association: Combined Sections Meeting, Washington DC.

***VanNostrand M**, Brindle A, Levitskiy D, Neville, C. Measurement of motion during the timed-up-and-go test can help identify concussion injury. 2019 American Physical Therapy Association: Combined Sections Meeting, Washington DC.

*Levitskiy D, **VanNostrand M**, Brindle A, Neville C. Use of a decision tree analysis for classifying mobility decline in older adults. 2019 American Physical Therapy Association: Combined Sections Meeting, Washington DC.

***VanNostrand M**, Neville C, Rieger B, Baracks J. Test retest, reliability, and sensitivity of a novel digital dual-task neurocognitive test. 2018 4th Federal Interagency Conference on Traumatic Brain Injury, Washington DC.

Invited Seminars and Oral Presentations

Note: Presentations marked * indicate refereed.

***VanNostrand M**, Monaghan PG, Fritz N. Backward is the way forward: Backward walking as a mobility assessment and exercise intervention for individuals with neurologic disorders. 2025 American Physical Therapy Association Combined Sections Meeting.

***VanNostrand M**, Monaghan PG, Fritz N. Backward is the way forward: Backward walking as a mobility assessment and exercise intervention for individuals with neurologic disorders. 2024 American Physical Therapy Association Michigan Fall Conference.

VanNostrand M. Enhancing Community Participation for Persons with Multiple Sclerosis: The Role of Modifiable Social Determinants of Health. 2024 Wayne State Neurology Grand Rounds.

***VanNostrand M,** Fritz NE. Exploring Perceptions of Physical Activity in Individuals Newly Diagnosed with Multiple Sclerosis. 2023 Wayne State Graduate Research Symposium.

***VanNostrand M,** Monaghan PG, Fritz NE. Examination of proprioceptive reliance during backward walking in individuals with multiple sclerosis. 2024 13th International Symposium on Gait and Balance in Multiple Sclerosis. **Best abstract by a trainee award**

VanNostrand M. Cognitive motor interference and cortical activation while walking in Individuals with multiple sclerosis. 2012 Zeigler Research Forum. University of Vermont

***VanNostrand M,** Neville C, Rieger B, Baracks J. Test retest, reliability, and sensitivity of a novel digital dual-task neurocognitive test. 2018 4th Federal Interagency Conference on Traumatic Brain Injury, Washington DC.

Rieger B, Neville C, **VanNostrand M.** Test retest, reliability, and sensitivity of a novel digital neurocognitive test. 2018 Binghamton University.

RESEARCH MENTORING

Dale Stanley, Hassan Hamadeh, Saif Musleh, Hassan Sabbagh
Sensory Reweighting During Walking in Healthy Adults
Physical therapy students, Fall 2024 – present

Taylor Takla
Examining Backward Walking as a Clinical Detector of Fall Risk in Multiple Sclerosis
PhD candidate, Fall 2023 – present

Maryam Abbawi
Structural and Functional Changes with 8 Weeks of Backward Walking Training in Multiple Sclerosis: A Case Series
Research associate, Fall 2023 – present

Natalie Lloyd
Comparison of In-Lab Walking Metrics to Real-World Ambulation in Individuals with Multiple Sclerosis.
Exercise Science Undergraduate, Fall 2021 – Fall 2023

Annika Ligon, Connor McClure, Julia Kropiewnicki
Development of Novel Dual-task Fall Risk Assessments for Individuals with Multiple Sclerosis.
Exercise Science Undergraduates, Fall 2021 – Present

Katie Emberly & Erin Cairns
Dual-Tasking and Community Mobility in Multiple Sclerosis.

Neuroscience Undergraduates, Fall 2020 – Spring 2021

Kristina Shanahan, Lance Bergmans, Carley Giroux, Bel Sogoloff
Qualitative Examination of Dual-Tasking Perceptions in Adults with Multiple Sclerosis.
Exercise Science Undergraduates, Fall 2020 – Spring 2021

Julia Deziel

Cortical Activation and Procedural Discourse Task Validation in Healthy Young Adults.
Neuroscience Undergraduate, Spring 2020

Sierra Martin, Alex Warsaw, Jose Soltero, Jessica Symonds, Tatyana Daniel
Attentional Switching on Gait Parameters in People with Multiple Sclerosis.
DPT Graduate Students, Fall 2019 – Spring 2020

Gabriel Purin

Cortical Involvement and Cognitive Motor Interference during Walking
in Individuals with Multiple Sclerosis.
Exercise Science Undergraduate, Fall 2019 – Spring 2020

AWARDS AND HONORS

North American Federation of Adapted Physical Activity Greg Reid Research Award	2022
University of Vermont Graduate Teaching Assistant of the Year	2022-2023
Wayne State University graduate research symposium platform presenter award.	2023
13th International Symposium on Gait and Balance in Multiple Sclerosis Top Abstract by a Trainee	2024

TEACHING

EXSC 263 Motor Skill Learning and Control Department of Rehabilitation and Movement Science University of Vermont, Burlington, VT	2023
EXSC 296 Balance and Clinical Assessment Department of Rehabilitation and Movement Science University of Vermont, Burlington, VT	2022
EXSC 263 Exercise for Chronic Conditions Department of Rehabilitation and Movement Science University of Vermont, Burlington, VT	2020
PHYT Kinesiology and Examination of the Lower Quarter Department of Physical Therapy SUNY Upstate Medical University, Syracuse, NY	2019

SERVICE

Journal Reviewer

Reviewer of manuscripts for publication in the following journals: Journal of Biomedical Engineering, Multiple Sclerosis and Related Disorders, Journal of Neurologic Physical Therapy, International Journal of Public Participation in Health Care and Health Policy

MEMBERSHIPS

American Congress of Rehabilitation Medicine

The international Society of Motor Control