

Mary Crumley, PT, DPT, NCS, CBIS
Board-Certified Neurological Clinical Specialist

CONTACT INFORMATION

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PRESENT POSITION

Assistant Professor, Physical Therapy and Neurology
Washington University School of Medicine, St. Louis, MO

EDUCATION

UNDERGRADUATE

Bachelor of Arts in Chemistry, Minor in Mathematics May 2011
Luther College, Decorah, IA
Cum Laude

GRADUATE

Doctor of Physical Therapy December 2013
St. Ambrose University, Davenport, IA
Neurologic Physical Therapy Residency Program July 2015
MossRehab, Elkins Park, PA

ACADEMIC POSITIONS/EMPLOYMENT

UnityPoint Health- Allen Hospital March 2014-June 2014
Staff physical therapist in the acute care and inpatient rehab setting. Provided care throughout hospital and supervised physical therapy assistants.

MossRehab-Einstein Healthcare Network July 2014-July 2015
Resident physical therapist completing 4 month rotations in the inpatient/outpatient brain injury setting, outpatient neurologic and vestibular setting, and inpatient stroke and spinal cord injury setting.

Courage Kenny Rehabilitation Institute, Allina Health August 2015-June 2016
Resource physical therapist in the acute care, ICU, inpatient rehab, aquatic, skilled nursing facility, and outpatient neurologic setting.

SSM Health Rehabilitation Hospital, Richmond Heights February 2017-August 2018
Per diem physical therapist in the general inpatient rehabilitation setting.

The Rehabilitation Institute of St. Louis July 2016-February 2019
Full-time physical therapist in the inpatient rehabilitation setting with a neurologic focus on spinal cord injury, amputation, and general trauma.

Washington University Program of Physical Therapy
Clinical Associate March 2019- February 2023
Eighty-five percent of time spent in direct patient care and 15 percent of time spent in education. Clinical practice includes the following patient

population: Multiple sclerosis, Parkinson's, vestibular, concussion, brain injury, stroke, spinal cord injury, post-COVID, debility, amputee and specialty seating and positioning clinic. My education role ranges from lab assisting and content developing for the Washington University Program of Physical Therapy and mentoring clinical associates.

Assistant Professor

March 2023- Present

Time split between education and clinical practice division.

CLINICAL TITLE AND RESPONSIBILITIES

Neurological physical therapist working at the Washington University Program of Physical Therapy @4240 Clinic. Clinical practice includes, but is not limited to the following patient population: Multiple sclerosis, Parkinson's, vestibular, concussion, brain injury, stroke, spinal cord injury, post-COVID, debility, amputee and specialty seating and positioning clinic.

TEACHING TITLE AND RESPONSIBILITIES

Content (lecture and assessment) creator for the following Courses: Module 5, Module 6, Module 7/8, Clinical, Scholar and Educator Phase 3

Lab Assistant: Module 3, Module 5, and Module 6

Lab Assistant: Diagnosis and Management of Neuromuscular Conditions I and II

Advisor: DEA III, Clinical Education Case Discussion I and II, Clinical Scholar and Educator Phase 4

MEDICAL LICENSURE AND CERTIFICATION

Physical Therapist

Active:

State of Missouri

Issued 4.27.2016

State of Illinois

Issued 4.29.2020

Inactive:

State of Iowa

Issued 2.6.2014-1.15.2016

State Minnesota

Issued 7.9.2015-1.1.2016

State of Pennsylvania

Issued 5.28.2014-12.31.2016

Certified Specialist in Neurologic Physical Therapy
American Board of Physical Therapy Specialties

July 2016-Present

Certified Brain Injury Specialist

October 2018-present

Certified Multiple Sclerosis Specialist

March 2020-Present

APTA Credentialed Clinical Instructor

October 2015

CPR and First Aid, American Heart Association

2011-present

NATIONAL COMMITTEES:

ANPT Practice Committee, <i>Member</i>	2021-present
FSBPT PTA Practice Analysis Task Force	2022
Echo MS- Central Hub at Washington University, <i>Team Member</i>	2020-2022
American Physical Therapy Association, <i>Member</i>	2011-present
Neurology Section, <i>Member</i>	2013- present
Brain Injury and Vestibular SIG, <i>Member</i>	2015-present
NCS Committee, <i>Member</i>	2017-2020

COMMUNITY SERVICE CONTRIBUTIONS:

Fall Science Day, WUSM, <i>volunteer</i>	Fall 2023
Violence as a Public Health Issue, <i>panel member</i>	October 2021
Washington University School of Medicine. Virtual	
WUPT Running Clinic, <i>speaker/volunteer</i>	Present
Balance and Running, virtual	Fall 2021
Couch to 10K Saturday morning run, Forest Park	Fall 2019
Big River Speed Work	Fall 2019
Exercise and Parkinson's Disease, <i>speaker</i>	February 2021
Support group for individuals recently diagnosed with Parkinson's disease. Virtual	
Dignity Period Gala, <i>volunteer</i>	March 2020
St. Louis, MO	
Wheelchair Rugby Tournament, <i>volunteer</i>	February 2020
St. Peters, MO	
St. Louis Ataxia Support Group, <i>speaker</i>	Fall 2019
St. Louis, MO.	
Parkinson's Support Group, <i>speaker</i>	Spring 2019
Movers and Shakers, Kirkwood, MO	
St. Louis Women's Bike Summit, <i>vendor</i>	April 2019
St. Louis, MO	
Missouri Special Olympics, <i>volunteer</i>	April 2017
St. Louis Community College, St. Louis, MO	
FSBPT Item Writer 20 questions	2019
Neuro Academy CSM Booth, <i>volunteer</i>	February 2017
San Antonio, TX	
Disable Athlete Sports Association Adaptive Skiing, <i>volunteer</i>	January-February 2017
Hidden Valley, MO	
Courage Kenny Adaptive Ski and Sports, <i>volunteer</i>	December 2015-March 2016
Afton, MN	
Second Harvest, <i>volunteer</i>	March 2016
Golden Valley, MN	
Free Bikes for Kids, <i>volunteer</i>	December 2015
Minneapolis, MN	
Life Rolls On: We Will Surf Again, <i>volunteer</i>	June 2015
Wildwood Crest, NJ	
New Roads, New Directions: Finding Your Way After Brain Injury	November 2014

<i>Volunteer</i> Philadelphia, PA	
Race for Recovery 5K, <i>volunteer</i> Newtown, PA	October 2014
Up With Families, <i>volunteer</i> Davenport, IA	February 2013
King's Harvest Soup Kitchen, <i>volunteer</i> Davenport, IA	May-December 2012

MENTEE RECORD:

Clinical mentor to 4 clinical associates in the last 5 years in general neurological physical therapy with an emphasis on patients with limb loss and vestibular disorders.

BIBLIOGRAPHY

POSTERS

M Crumley. *Persistent Vertigo and Ageotropic Nystagmus Post Cochlear Implant.* Presented at CSM 2025 Houston, TX.

R Belk and **M Crumley.** *Feasibility of Measuring Activity Performance in Daily Life within Routine Outpatient Neurologic Rehabilitation.* Presented at APTA MO Spring Conference by R Belk.

M Crumley. *Feasibility of Moderate to High Intensity Gait Training in a Patient with Transfemoral Amputation.* ACRM Annual Conference virtual 2021. Presented virtually at CSM 2022

M Crumley, T Notestine, M Bland, B Crowner, R Duncan, C Holleran. *Barriers to and Percentage of Vital Sign Assessment in an Outpatient Physical Therapy Setting.* CSM 2021 virtual.

M Crumley. *Feasibility of High-Intensity Gait Training in an Individual with Chronic Severe Traumatic Brain Injury in the Outpatient Setting.* Abstracted accepted MPTA spring conference postponed 2020.

O Rinco, **M Crumley,** and K Indrelie. *Detecting Trace Amounts of Environmental Pollutants via Fluorescence Spectroscopy.* Poster Presentation. Presented at the Undergraduate Research Symposium in the Physical Sciences, Mathematics, and Computer Science, Washington University, St. Louis, MO. 2010.

PRESENTATIONS

B Hughes and **M Crumley.** *Challenges in Benign Paroxysmal Positional Vertigo: A Video Case-Based Approach to Complex and Atypical Presentations.* Oral Presentation. Presented at America Physical Therapy Association Missouri Chapter Spring Conference April 2025.

M Bland and **M Crumley**. *Implementing the Activity Domain: Enhancing Clinical Care through Goal Setting and Collaborative Care Planning*. Oral and Virtual Presentation. Presented at Academy of Neurological Physical Therapy National Conference. Columbus, OH. September 2024

B Hughes and **M Crumley** *BPPV in Patients with Traumatic Brain Injury*. Oral Presentation. Presented at The Rehabilitation Institute of St. Louis, MO. June 2024.

G Vandercar, K Stock, D Priluck, **M Crumley** *Reimagining Progress: A Dive into Performance Based Measures in Neurological Physical Therapy*. Oral Presentation. Presented by G Vandercar, K Stock, D Priluck and R Belk, MO APTA Spring Conference. SLU, St. Louis MO 2024.

B. Hughes and **M Crumley**. *Vestibular Examination and Treatment*. Oral Presentation. WUPT. Clinical Rounds Presentation. December 2023.

D Priluck and **M Crumley** *Performing wheelchair clinic evaluations: Applying the Medicare Guidelines to Write Letters of Medical Necessity*. Oral Presentation by, MO APTA Spring Conference, St. Louis, MO 2023

M Crumley. *Feasibility of Moderate to High Intensity Gait Training in a Patient with Transfemoral Amputation*. Oral Presentation. Presented at Washington University Program of Physical Therapy Research Seminar, St. Louis, MO 2021.

M Crumley. *Intensive Gait Training*. Oral Presentation. Presented at The Rehabilitation Institute of St. Louis, St. Louis, MO 2018

M Crumley. *Differential Diagnosis of a Patient with Gait Dysfunction and Dizziness*. Oral Presentation. Presented at MossRehab, Elkins Park, PA 2015.

M Crumley. *Vestibular Migraine-Literature Review*. Oral Presentation. Presented at MossRehab, Elkins Park, PA 2015.

M Crumley. *A Case Study in a Patient with Ataxia*. Oral Presentation. Presented at MossRehab, Elkins Park, PA 2014.

M Crumley. *Ataxia Outcome Measures-Literature Review*. Oral Presentation. Presented at MossRehab, Elkins Park, PA 2014.

M Crumley, M Elgin, E Horner, L Wettach; and John O. Barr, PT, PhD, advisor. *Is Mirror Therapy a beneficial adjunct treatment in patients with sub-acute stroke?* Oral Presentation and Literature Review. Presented at St. Ambrose University, Davenport, IA. 2013

J Armstead, **M Crumley**, J Frinak, S Small, L Jay. *Solving Numerical Systems Using Specialized Partitioned Additive Runge-Kutta Methods*. Oral Presentation. Presented at the Iowa Summer Research Symposium, University of Iowa, Iowa City, IA. 2009.

TEACHING EXPERIENCE

Clinical, Scholar, Educator (CSE) Phase 3 and 5, *facilitator, advisor* 2023-Present
Neuro Lens
Washington University Program of Physical Therapy, St. Louis, MO
Module VII/VIII, *Lab Assistant, Content creator* Winter/Spring 2024-present
Neuro Lens Leader
Washington University Program of Physical Therapy, St. Louis, MO
Module VI, *Lab Assistant, Content/Assessment creator* Spring 2023-Present
General Medical Conditions-Prosthetics/limb loss content
Neuromuscular Conditions-Vestibular/Brain Injury
Washington University Program of Physical Therapy, St. Louis, MO
Module V, *Lab Assistant, Content creator* Fall 2022-Present
Neuromuscular Conditions-Improving walking outcomes/Gait/Brain Injury
Washington University Program of Physical Therapy, St. Louis, MO
Module III, *Lab Assistant* Fall 2021-Present
Foundational Examination/Gait and Transfers
Washington University Program of Physical Therapy, St. Louis, MO
Case Integration I, *Advisor* Fall 2021
Washington University Program of Physical Therapy, St. Louis, MO
“Special Considerations for Individuals with Traumatic
Brain Injury” *Lecturer* Spring 2021/2022
Washington University Program of Physical Therapy, St. Louis, MO
DEA III, *Advisor* Spring 2020-Present
Washington University Program of Physical Therapy, St. Louis, MO
Diagnosis and Management of Neuromuscular Conditions I and II, April 2017- Present
Lab Assistant, Practical Grader, and assist with case development
Washington University Program of Physical Therapy, St. Louis, MO
Washington University Part and Full-time *Clinical Instructor:* 2017-Present
ECE and CE I (2), II (2), III (2), IV (2)
Washington University Outpatient Clinic TRISL location St. Louis, MO
“Intensive Gait Training” Neuro Focus Study, *Lab Assistant* April 2018-Present
Washington University, St. Louis, MO
NCS Online Review Board, *Content Contributor* 2018-2020
Statistics Review and Introduction into Evidence Based-Practice
Regis University Full-Time *Clinical Instructor* Fall 2018
The Rehabilitation Institute of St. Louis, St. Louis, MO
Neuro rounds for Case integration III, *Clinical Instructor* Spring 2018
Washington University, St. Louis, MO
Transfer Training Blitz Station March 2017 and 2018
The Rehabilitation Institute of St. Louis, St. Louis, MO
St. Louis University Full-Time Clinical Instructor Spring 2018
The Rehabilitation Institute of St. Louis, St. Louis, MO
Executive Function, *Widener University Lecture* June 2015
Co-presenter
Arcadia University Part-Time Clinical Instructor September 2014-March 2015

MossRehab Elkins Park, PA
Widener Student Experience, Brain Injury

September 2014-October 2014

PROFESSIONAL DEVELOPMENT

Foundational In Teaching Skills, <i>Participant</i>	2023-2024
Witnessing Whiteness: The Need to Talk about Race and How to Do It, <i>Participant</i>	2020-2021
City Faces Tour, <i>Participant</i>	2019

Conferences Attended and Continuing Education Summary:

- American Physical Therapy Association CSM
 - Houston, TX 2025
 - I'm a New Neurorehabilitation Educator in a Physical Therapy Program: Where do I start?,
 - Boston, MO 2024
 - Virtual 2021
 - Denver, CO- The Knowledge Translation Preconference 2020
 - Washington D.C 2019
 - New Orleans 2018
 - San Antonio, TX 2017
 - Indianapolis, IN 2015
 - Las Vegas, NV-The ABCs of Vestibular Rehabilitation 2014
 - Chicago, IL 2012
- Academy of Neurological Physical Therapy Annual Conference
 - Columbus, OH 2024
- American Congress of Rehabilitation Medicine Annual Conference, Virtual 2021
- Gait and Balance Dysfunction in Individuals with Neurodegenerative Diseases November 2023
- Transitioning from Differential Grading Systems to Competency-Based Assessment Considerations, Approaches and Lessons Learned May 2023
- Translation of In-Clinic Gains to Gains in Daily Life After Stroke March 2022
- Leveraging Large Data and Wearables to Advance Care in PT February 2022
- Tracking Movement in Knee OA: from Lab to the Community October 2021
- Axillary Cording: Discussion on Etiology, Musculoskeletal management, and Outcomes April 2021
- Community Based Research and the Role of Physical Therapy: Fostering Student Engaged Research February 2020
- The Effects of Rhythmic Auditory Cueing on Movement Variability in Parkinson Disease January 2020
- Physical Therapy for People with Parkinson Disease who have Deep Brain Stimulation: Safety, Feasibility and Preliminary Efficacy December 2019
- Foot Dysfunction in People with Diabetes Mellitus and Peripheral Neuropathy November 2019
- Evidence-Based Treatment of People with Parkinson's Disease October 2019
- Falls in Older Adults with Cancer: From Risk Prediction to Prevention September 2019
- Functional Changes and Treatment of Injury Induced Intervertebral disc Pathology in Pre-Clinical Models August 2019

- NPTE Regional Item Writing Workshop June 2019
- Advanced Vestibular Conference, Pittsburg, PA May 2019
- The International Vestibular Conference August 2018
- Advanced Spinal Cord Injury Course Healthsouth August 2018
- Geometric Skeletons for Shape Analysis March 2017
- The Role of the Physical Therapist in the Management of Children with Neurofibromatosis Type I (NF1) February 2017
- Introduction to RT300 FES Ergometry Course October 2016
- Training Proprioception (Body Awareness) in Stroke March 2016
- Brain Injury Rehabilitation (TBI and Post Concussion Syndrome) December 2015
- Development of a Dual-task and Multitask Assessment for Soldiers With Concussion: Lessons Learned for Civilian Rehabilitation Practice November 2015
- APTA Credentialed Clinical Instructor Program October 2015
- Environmental Management System for Neurologically Affected Patients September 2015
- Cadaver Anatomy Review for Physical Therapy September 2015
- Clinical Application of Acute Dizziness August 2015
- Stroke Rehabilitation: Evaluation, Treatment, and Selected Topics April 2015
- Endurance Tests and Interventions from the Healthy to the Complex Patient March 2015
- Evidence Based Physical Therapy for Cervicogenic Dizziness, Cervicogenic Headaches and Whiplash Associated Disorders March 2015
- Comprehensive Physical Therapy Management of the Individual following Traumatic Brain Injury February 2015
- Clinical Assessment of Gait and Movement in the Individual with Neurologic dysfunction October 2014
- What's Right? Making Decisions in Patient Care September 2014