

**EMORY UNIVERSITY SCHOOL OF MEDICINE
STANDARD CURRICULUM VITAE**

Revised: 11/22/2023

1. **Name:** Colin Riess Grove, PT, DPT, MS, PhD

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4. **Current Titles and Affiliations:**
 - a. **Academic Appointments:**
 1. **Primary Appointments:**
Assistant Professor, School of Medicine, Department of Rehabilitation Medicine, Division of Physical Therapy (09/01/2023 – present)

5. **Previous Administrative and/or Clinical Appointments:**
 - a. Staff Physical Therapist: University of Wisconsin Hospital and Clinics (UWHC), Department of Orthopedics and Rehabilitation, Rotating Position (06/1994 – 06/1996)
 - b. Staff Physical Therapist: UWHC, Department of Orthopedics and Rehabilitation, Inpatient Rehabilitation Team (06/1996 – 06/1997)
 - c. Senior Physical Therapist: UWHC, Department of Orthopedics and Rehabilitation, Inpatient Rehabilitation Team (09/1998 – 11/1999)
 - d. Senior Physical Therapist: UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (11/1999 – 06/2007)
 - e. Physical Therapist-Advanced Clinician: UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (06/2007 – 08/2008)
 - f. Physical Therapist-Expert Clinician: UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (11/2008 – 01/2021)
 - g. Coordinator: Dizziness and Balance Rehabilitation Program, UWHC (2012 – 2020)
 - h. Physical Therapist-Advanced Clinician (Per Diem): UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (01/2021 – 06/2021)
 - i. Physical Therapist (Per Diem): Johns Hopkins Health System, Department of Physical Medicine and Rehabilitation, Outpatient Physical Therapy (10/01/2021 – 07/31/2023)

6. **Licensures:**
 - a. Physical Therapist: State of Wisconsin (06/01/1994 – 02/28/2023)
 - b. Physical Therapist: State of Maryland (07/01/2021 – present)

7. **Boards and Specialty Boards:**

- a. Board-Certified Clinical Specialist in Neurologic Physical Therapy: Initial Certification – American Board of Physical Therapy Specialties (ABPTS) (2004 – 2014)
- b. Board-Certified Clinical Specialist in Neurologic Physical Therapy: Re-certification – ABPTS (2014 – 2024)

8. **Education:**

- a. BS in Physical Therapy; Saint Louis University; St. Louis, MO (1990 – 1994)
- b. MS in Kinesiology; UW-Madison (UW-Madison); Madison, WI (1998 – 2003)
 1. Thesis: “Sensory Organization of Postural Control in Children with and without Developmental Coordination Disorder”
 2. Advisor: Jo-Anne C. Lazarus, PhD
- c. DPT (Doctor of Physical Therapy); Temple University; Philadelphia, PA (2014 – 2016)
- d. PhD in Clinical Investigation; UW-Madison; Madison, WI (2014 – 2020)
 1. Dissertation: “Screening Adults for Vestibular Loss Using Tests of Balance and Gait”
 2. Primary Advisors: G. Mark Pyle, MD and Bryan C. Heiderscheidt, PT, PhD, FAPTA

9. **Postgraduate Training:**

- a. Postdoctoral Research Fellow: UW-Madison, School of Education, Department of Kinesiology, PI: Kreg G. Gruben, PhD (01/01/2021 – 06/30/2021)
- b. Postdoctoral Research Fellow: Johns Hopkins University (JHU), School of Medicine, Department of Otolaryngology – Head and Neck Surgery, PI: Michael C. Schubert, PT, PhD (07/01/2021 – 08/31/2023)

10. **Continuing Professional Development Activities:**

- a. Basic K-Award Workshop: JHU & Career Volt (2021)
- b. Advanced K-Award Workshop: JHU & Career Volt (2022)
- c. National Institutes of Health (NIH): Becoming a Resilient Scientist, Five-part Series) (On-demand)
- d. Justice, Equity, Diversity, and Inclusion (J.E.D.I.) Training (An Introduction to Anti-oppressive Teaching) (2022)
- e. NIH: Navigating Early Career Funding Opportunities (09/15/2022)
- f. NIH: Research Misconduct & Detrimental Research Practices: Overview & Case Studies (10/14/2022)
- g. NIH: Human Subjects Research: Policies, Clinical Trials, & Inclusion (12/6-7/2022)
- h. NIH: Virtual Grants Conference on Funding, Policies, and Processes (02/1-2/2023)
- i. ANPT- Early Career Scientist Workshop (02/14/2024)

11. **Society Memberships:**

- a. National/International:
 1. Member: American Physical Therapy Association (APTA) (1993 – present)
 - i. Member: ANPT (ANPT) (1996 – present)
 - (a) : Vestibular Special Interest Group (VSIG) (2000 – present)
 2. Member: Vestibular Disorders Association (2001 – present)
 3. Member: Alpha Sigma Nu, National Jesuit Honor Society (1994 – present)
- b. Regional:
 1. Member: Wisconsin Physical Therapy Association (1993 – 2023)
 2. Member: Maryland Physical Therapy Association (2021 – present)

12. Committee Memberships:

a. National and International:

1. American Stroke Association
 - i. Member: Operation Stroke, Education Subcommittee (2002 – 2003)
2. APTA ANPT
 - i. Leader: Unilateral Vestibular Hypofunction, VSIG Ad hoc Task Force, (2004)
 - ii. Publication Extraction Reviewer: Hooked on Evidence Committee, Section on Research (2004 – 2008)
 - iii. Member: Abstract of the Month Committee, VSIG (2009 – 2010)

b. Institutional:

1. UWHC Physical Therapy Department
 - i. Task Force Member: Documentation (1998)
 - ii. Task Force Member: Space Evaluation (1998)
 - iii. Task Force Member: Weekend Therapy (1998)
 - iv. Chair: Brain Injury Education Committee, Inpatient Rehabilitation (1998 – 1999)
 - v. Chair: B4/4 Unit-based Rehabilitation Sub-task Force, Space Evaluation Task Force (2002)
2. UWHC Department of Orthopedics and Rehabilitation
 - i. Member: Comprehensive Stroke Program, Rehabilitation Subcommittee (2003 – 2004)
 - ii. Member: Therapy Executive Council Subcommittee on Professional Advancement and Recognition (2005 – 2006)
 - iii. Member: Transition Review Board, Professional Advancement and Recognition Program (2006 – 2008)
 - iv. Member: Stroke Prevention Exercise Program Task Force (2008 – 2012)
 - v. Member: Vestibular and Balance Patient Management Group (2007 – 2011)
 - vi. Member: Neurologic Physical Therapy Residency Program Planning Committee, UWHC, Department of Orthopedics and Rehabilitation (2019 – 2020)
3. UW-Madison, School of Medicine and Public Health, Institute for Clinical and Translational Research (ICTR)
 - i. Member: Curriculum Committee (2019 – 2020)
4. Emory University, School of Medicine, Department of Rehabilitation Medicine, Division of Physical Therapy
 - i. Member: Admission Committee (2023 – present)
 - ii. Member: Research Committee (2023 – present)

13. Peer Review Activities:

a. Manuscripts:

1. *Archives of Physical Medicine and Rehabilitation* (2005 – present)
2. *Annals of Otolaryngology, Rhinology, and Laryngology* (2006 – present)
3. *Otology & Neurotology* (2020 – present)
4. *Journal of Vestibular Research* (2020 – present)
5. *Scientific Reports* (2022 – present)
6. *Journal of Neurologic Physical Therapy* (2023 – present)

14. Editorships and Editorial Boards:

- a. Associate Editor: *Topics in Vestibular Rehabilitation*, APTA, ANPT, VSIG (2022 – present)

15. Consultantships/Advisory Boards:

- a. Reviewed clinical marketing materials and advised regarding clinical trials of the BrainPort™

vestibular substitution device for Madison-based start-up company; Wicab, Inc. Middleton, WI, USA (2017 – 2021)

16. Organization of Conferences:

a. National and International:

1. Administrative Positions:

- i. Planning Committee Member: Expanding Neurologic Expertise – Advanced Practice in Vestibular Physical Therapy, ANPT Continuing Education Course (2009 – 2010)

2. Other Conference Activities:

- i. Volunteer: 28th Annual Motor Development Research Consortium, UW-Madison, Madison, WI, USA (2002)
- ii. Poster Judge: 1st International Conference on Vestibular Rehabilitation, ANPT, Chicago, IL, USA (2019)

b. Regional:

1. Administrative Positions:

- i. Course Director: Introduction to Clinical Decision Making in Vestibular and Balance Rehabilitation, UW-Madison Continuing Medical Education (CME) (2002)
- ii. Course Director: Clinical Decision Making in Vestibular and Balance Rehabilitation, UW-Madison CME (2004, 2006, and 2007)
- iii. Course Director: Fundamentals of Vestibular Rehabilitation, UW-Madison, ICTR (2016)
- iv. Course Director: Clinical Science of Vestibular Rehabilitation, UW-Madison, ICTR (2016)

c. Institutional:

1. Administrative Positions:

- i. Course Director: Vestibular Rehabilitation in Acute Care (ThedaCare) (2011)
- ii. Course Director: Vestibular Rehabilitation in Acute Care (UWHC) (2011)
- iii. Planning Committee Member: UWHC Peripheral Vestibular Hypofunction Clinical Practice Guideline Continuing Education Course (2019)

17. Clinical Service Contributions:

- a. Co-developer: Peripheral Vascular Service Critical Pathways, UWHC, Physical Therapy Department (1996)
- b. Co-coordinator: Muscle Imbalance Case Presentation, Presented by Shirley Sahrman, PhD, PT, FAPTA (1997)
- c. Coordinator: Balance Disorders Case Presentation, Presented by Fay Horak, PT, PhD (1998)
- d. Coordinator: Neuro Journal Club, UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (1998 – 2008)
- e. Developer: Inpatient Rehabilitation Physical Therapy Evaluation protocols for General Care, Spinal Cord Injury, and Brain Injury, UWHC, Physical Therapy Department (1999)
- f. Coordinator: Comprehensive Stroke Rehabilitation Team, UWHC, Physical Therapy Department (2001 – 2002)
- g. Co-developer: Professional Advancement and Recognition Model, UWHC, Department of Orthopedics and Rehabilitation (2007)
- h. Health Link Super User: UWHC, Department of Orthopedics and Rehabilitation (2007 – 2021)
- i. Liaison: Outpatient Neuro Rehabilitation Elective, UW-Madison, School of Medicine and Public Health, Rehabilitation Medicine Residency Program (2007 – 2012)
- j. Coordinator: Bioness L300 and H200 patient demonstration, UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation and Middleton Outpatient Pediatrics Teams (2008)

- k. Developer and Editor: Clinical Reference Manual – Examination and Treatment of Postural Balance and Locomotion, UWHC, Department of Orthopedics and Rehabilitation (2008 – 2021)
- l. Developer and Editor: Clinical Reference Manual – Examination and Treatment of Oculomotor and Vestibular-ocular Function, UWHC, Department of Orthopedics and Rehabilitation (2008 – 2021)
- m. Developer and Editor: Clinical Reference Manual – Examination and Treatment of Benign Paroxysmal Positional Vertigo, UWHC, Department of Orthopedics and Rehabilitation (2008 – 2021)
- n. Reviewer: Sports Concussion Protocol, UWHC, Department of Orthopedics and Rehabilitation, Sports Rehabilitation Team (2012)
- o. Contributor: Rapid Design for the Discharge Planning Process, UWHC, Department of Orthopedics and Rehabilitation (2013)
- p. Developer: Clinical Competencies, Dizziness and Balance Rehabilitation Program, UWHC, Department of Orthopedics and Rehabilitation (2016 – 2018)
- q. Co-developer: Unilateral Vestibular Hypofunction Clinical Practice Guideline, UWHC, Department of Orthopedics and Rehabilitation (2018)

18. Contributions to Diversity, Equity, and Inclusion:

- a. Lessons from overcoming the daily challenges associated with my disabilities help drive my research regarding the multisensory and perceptual challenges to balance and gait in adults with labyrinthine and brain disorders. I recognize the need to strive for ecological validity in research, in part, by including participants of all backgrounds.
- b. I have participated in, volunteered for, created, and led endurance charity challenges benefitting local AIDS service organizations.
- c. As a Deacon and Elder, I spearheaded my congregation’s efforts to create worship spaces that were accessible to people with visual, hearing, and mobility-related disabilities.
- d. Currently, I use my experience as a triathlete and my training as a physical therapist to promote inclusion of disabled adults in triathlon by serving as an International-Level II Medical and Technical Classifier for World Triathlon.
- e. My travels to Africa to see transformational community development work being done in desperately poor areas and to listen, to learn, and to envision new ways to come alongside the poor led to my ongoing involvement as a participant and volunteer leader for Team World Vision.
- f. During my postdoctoral fellowship, I pursued Justice, Equity, Diversity, and Inclusion (J.E.D.I.) Training (An Introduction to Anti-oppressive Teaching) through the Johns Hopkins Teaching Academy. I am committed to creating an equitable teaching environment for all students, to being anti-racist, and to actively combating power and privilege in my classrooms.

19. Community Outreach:

a. General:

- 1. Volunteer: Madison East High School Career Day, UWHC, Madison, WI, USA (1995)
- 2. Volunteer: Take Your Daughters to Work Day, UWHC, Madison, WI, USA (1996 – 1998)
- 3. Speaker: Keeping Your Balance: One Step at a Time. Education session presented at: Healthy Aging Fair, Sauk County Commission on Aging, Sauk City, WI, USA (10/27/2000)
- 4. Madison Metropolitan School District:
 - i. Speaker: Sensory Organization of Postural Control in Children with and without Developmental Coordination Disorder-Study Introduction. Inservice presented at: Madison Metropolitan School District Therapy Staff Meeting, Madison, WI, USA (09/14/2001)
 - ii. Speaker: Sensory Organization of Postural Control in Children with and without Developmental Coordination Disorder-Study Results. Inservice presented at: Madison

Metropolitan School District Therapy Staff Meeting, Madison, WI, USA (04/25/2003)

5. AIDS Network Cycles Together:
 - i. Vice-chair: Steering Committee, AIDS Network Cycles Together (ACT), Benefiting AIDS Network, Madison, Wisconsin, USA (2002 – 2003)
 - ii. Route & Logistics Coordinator: AIDS Network Cycles Together (ACT) – ACT I, Benefiting AIDS Network, Madison, Wisconsin, USA (2003)
 - iii. Training Ride Leader: AIDS Network Cycles Together (ACT) – ACT II and ACT III, Benefiting AIDS Network, Madison, Wisconsin, USA (2004 – 2005)
6. Christ Presbyterian Church:
 - i. Member, Board of Deacons: Christ Presbyterian Church, Madison, WI, USA (2004 – 2007)
 - ii. Member, Council of Elders: Christ Presbyterian Church, Madison, WI, USA (2010 – 2012)
7. Good Shepherd Lutheran Church
 - i. Member: Child and Family Christian Education Committee, Christ Presbyterian Church, Madison, WI, USA (2007 – 2013)
 - ii. Member: Social Action Committee, Good Shepherd Lutheran Church, Madison, WI, USA (2018 – 2021)
8. USA Triathlon:
 - i. Speaker: Passion - Perseverance - Patriotism. Education session presented at: 2013 USA Triathlon Midwest Region and Mideast Region Race Directors Symposium, Chicago, IL, USA (12/07/2013)
 - ii. Paratriathlon Representative: Midwest Regional Council (2013 – 2018)
 - iii. Member: USA Triathlon National Paratriathlon Committee (2014 – 2015)
 - iv. National-Level Paratriathlon Medical Classifier (2016 – present)
9. World Triathlon:
 - i. International-Level I Paratriathlon Medical Classifier (2016 – 2018)
 - ii. International-Level II Paratriathlon Medical Classifier (2018 – present)
10. Team World Vision, USA:
 - i. Captain: Team Good Shepherd – Madison Marathon and Half Marathon (2015 – 2019)
 - ii. City Coordinator: Madison Marathon and Half Marathon (2015 – 2021)

b. Media Appearances:

1. **Grove, CR** guest on WMTV-Madison, NBC 15, 5:00 News with Mike McKinney, “Ride of a Lifetime: Stretching for Cycling” (07/08/1999)
2. **Grove, CR** guest on WMTV-Madison, NBC 15, 5:00 News with Mike McKinney, “Ride of a Lifetime: Personal Stories” (08/16/2002)

20. Honors and Awards:

- a. Award for Outstanding Community Service: 1310 WIBA AM Radio and United Way of Dane County, Madison, WI, USA (2003)
- b. Jane Kipsang Leadership Award: Team World Vision USA (2020)
- c. 1st Place, Presentation of a Research Abstract: ANPT VSIG at the 2020 APTA Combined Sections Meeting (2020)
- d. 2nd Place, Presentation of a Research Abstract: ANPT at the 2nd International Conference for Vestibular Rehabilitation (2022)

21. Formal Teaching:

a. Institutional Lecture Duties Within the Setting of a Course or Rotations:

1. **Grove, CR.** Scope of Physical Therapy Practice. Lecture presented to: UW-Madison, Speech Language Pathology Program, Madison, WI, USA (1.0 hour) (undergraduate

- students) (10/15/1998)
2. **Grove, CR.** Examination of Postural Control. Lecture presented to: UW-Madison, School of Education, Department of Kinesiology, KINES 361, Madison, WI, USA (1.0 hour) (undergraduate students) (03/15/2001)
 3. **Grove, CR.** Rehabilitation Enhances Recovery: Microscopes, Monkeys, and Man. Lecture presented to: UW-Madison, School of Education, Physical Therapy Program, PTH 636, Madison, WI, USA (1.0 hour) (undergraduate students) (03/14/2003)
 4. **Grove, CR.** Physical Therapy Management of Children with Developmental Coordination Disorder. Lecture presented to: UW-Madison, School of Education, Physical Therapy Program, PTH 635, Madison, WI, USA (1.0 hour) (undergraduate students) (2003 – 2006)
 5. **Grove, CR.** Examination of Postural Control. Lecture presented to: UW-Madison, School of Education, Department of Kinesiology, KINES 361, Madison, WI, USA (1.0 hour) (undergraduate students) (03/25/2004)
 6. **Grove, CR.** Evidence-based Professional Advancement and Recognition. Lecture presented to: UW-Madison, School of Education, Physical Therapy Program, PTH 640, Madison, WI, USA (1.0 hour) (graduate students) (2009 – 2016)
 7. **Grove, CR.** Benign Paroxysmal Positional Vertigo, Lab Assistant. UW-Madison Physical Therapy Program, PTH 636, Madison, WI, USA (2.0 hours) (graduate students) (03/2012)
 8. **Grove, CR.** Benign Paroxysmal Positional Vertigo, Lab Assistant. UW-Madison, Physical Therapy Program, PTH 636, Madison, WI, USA (2.0 hours) (graduate students) (03/2013)
 9. **Grove, CR.** Introduction to Vestibular Physical Therapy. Lecture presented to: UW-Madison, School of Medicine and Public Health, NEURODPT 747, MD Program, Madison, WI, USA (1.0 hour) (medical students) (03/11/2019)
 10. **Grove, CR.** Vestibular and Balance Rehabilitation. Lecture presented to: UW-Madison, School of Medicine and Public Health, Department of Surgery, Division of Otolaryngology Head & Neck Surgery, Otorhinolaryngology Resident Program, Madison, WI, USA (1.0 hour) (residents) (01/23/2020)
 11. **Grove, CR.** The Auditory and Vestibular Systems, Part 1: Anatomy and Neurophysiology of the Auditory System. Lecture presented to: UW-Madison, School of Medicine and Public Health, Phase 1: Mind and Motion, MD Program, Madison, WI, USA (1.0 hour) (medical students) (10/20/2020)
 12. **Grove, CR.** The Auditory and Vestibular Systems, Part 2: Clinical Applications to Auditory Medicine. Lecture presented to: UW-Madison, School of Medicine and Public Health, Phase 1: Mind and Motion, MD Program, Madison, WI, USA (1.0 hour) (medical students) (10/20/2020)
 13. **Grove, CR.** The Auditory and Vestibular Systems, Part 3: Anatomy and Neurophysiology of the Vestibular System. Lecture presented to: UW-Madison, School of Medicine and Public Health, Phase 1: Mind and Motion, MD Program, Madison, WI, USA (1.0 hour) (medical students) (10/27/2020)
 14. **Grove, CR.** The Auditory and Vestibular Systems, Part 4: Clinical Applications to Vestibular Medicine. Lecture presented to: UW-Madison, School of Medicine and Public Health, Phase 1: Mind and Motion, MD Program, Madison, WI, USA (1.0 hour) (medical students) (10/27/2020)

b. Small Group and Multi-Disciplinary Teaching:

1. **Grove, CR.** Case Presentations presented to the UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (physical therapists, occupational therapists, and speech-language pathologists) (1.0 hour each)
 - i. Central Vestibular Dysfunction in Multiple Sclerosis (03/31/1999)
 - ii. Treatment of Focal Hand Dystonia in a Concert-level Musician (08/22/2002)
 - iii. Patient status-post Stroke (06/27/2003)
 - iv. Patient with Dystonia (04/22/2004)
 - v. Disablement Secondary to Parkinson's Disease (04/28/2005)
 - vi. Cervical Dystonia (04/27/2006)
 - vii. What's in a Name? Using Movement System Diagnoses in the Management of Patients with Neuromuscular Conditions (06/12/2007)
 - viii. To B or Not to B in Benign Paroxysmal Positional Vertigo (06/19/2008)
 - ix. Migrainous Vertigo (04/23/2009)
 - x. Rehabilitation of a Man with Runner's Dystonia (04/08/2010)
 - xi. A Chance Encounter (06/09/2011)
 - xii. Lateral Canal Benign Paroxysmal Positional Vertigo (05/17/2012)
 - xiii. A Case of Really Bad Room Service (04/18/2013)
 - xiv. Vestibular Epicitis (11/04/2014)
 - xv. Post-Concussion Syndrome (06/16/2015)
 - xvi. Apogeotropic Lateral Canal Benign Paroxysmal Positional Vertigo (06/14/2016)
 - xvii. Casting Lots: Serial Casting in Chronic Stroke (01/10/2017)
 - xviii. Benign Paroxysmal Positional Vertigo and Pre-existing Central Nervous System Disorders (06/09/2019)
2. Neuro Journal Club (UWHC)
 - i. **Grove, CR.** Vestibular Function and Sensory Organization in Children with Developmental Coordination Disorder. Presented to: UWHC, Outpatient Neuro Rehabilitation Team, Neuro Journal Club (physical therapists, occupational therapists, and speech-language pathologists) (01/26/2001)
 - ii. **Grove, CR.** Learning to Fish: Evidence-based Journal Club. Presented to: UWHC, Outpatient Neuro Rehabilitation Team, Neuro Journal Club (physical therapists, occupational therapists, and speech-language pathologists) (1.0 hour) (04/26/2005)
3. Orthopedic Physical Therapy Residency Didactic and Practical Instruction
 - i. **Grove, CR.** Examination and Treatment of Patients with Dizziness and Balance Disorders. Education session presented to: UWHC and Meriter Hospital Orthopedic Physical Therapy Residency Program; Madison, WI, USA (residents, 4-6 hours) (2006 – 2021)
4. Physical Therapy Grand Rounds (UWHC)
 - i. **Grove, CR.** Presented to: Physical Therapy Grand Rounds (physical therapists) (1.0 hour) (02/04/2004)

c. Other Categories:

1. Departmental Inservice Presentations:
 - i. **Grove, CR.** Clash of the 'Titins': Review of the Bobath Symposium. Presented to: UWHC, Physical Therapy Department (physical therapists) (05/15/1997)
 - ii. **Grove, CR.** Movement-System Evaluation (Four Part Series). Presented to: UWHC, Physical Therapy Department (physical therapists) (02/1998)
 - iii. **Grove, CR.** Beyond the ABC's: Assessing Balance in Children. Presented to: UWHC, Outpatient Pediatric Rehabilitation Team (physical therapists, occupational therapists, and speech-language pathologists) (12/13/2001)

- iv. **Grove, CR**, Erickson, KE. Evidence-based Post-stroke Rehabilitation. Presented to: UW Medical School, Department of Neurology Residency Program (residents) (11/07/2002)
 - v. **Grove, CR**. Clinically-relevant Neuroplasticity. Presented to: UWHC, Outpatient Neuro Rehabilitation Team (physical therapists, occupational therapists, and speech-language pathologists) (03/12/2002)
 - vi. **Grove, CR**. Comprehensive Stroke Rehabilitation Program. Presented to: UWHC, Rehabilitation Department, Outpatient Therapy Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (07/17/2003)
 - vii. **Grove, CR**. Integrating the Science and Art of Therapy. Presented to: UWHC, Outpatient Therapy Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (10/14/2003)
 - viii. **Grove, CR**. Evaluating Research. Presented to: UWHC, Outpatient Neuro Rehabilitation Team (physical therapists, occupational therapists, and speech-language pathologists) (03/23/2004)
 - ix. **Grove, CR** et al. Professional Advancement and Recognition Model. Presented to: UWHC, Combined Inpatient and Outpatient Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (06/14/2006)
 - x. **Grove, CR**. Dizziness and Balance Rehabilitation Program Update. Presented to: UWHC, Department of Orthopedics and Rehabilitation, Outpatient Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (03/14/2007)
 - xi. **Grove, CR**, et al. Professional Advancement and Recognition Model. Presented to: UWHC, Department of Orthopedics and Rehabilitation, Senior Inpatient Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (04/18/2007)
 - xii. **Grove, CR**, et al. Professional Advancement and Recognition Model. Presented to: UWHC, Department of Orthopedics and Rehabilitation, Senior Outpatient Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (04/25/2007)
 - xiii. **Grove, CR**. Dizziness and Balance Rehabilitation Program Update. Presented to: UWHC, Department of Orthopedics and Rehabilitation, Combined Inpatient and Outpatient Staff Meeting (physical therapists, occupational therapists, and speech-language pathologists) (10/17/2007)
 - xiv. **Grove, CR**. 2008 Combined Sections Meeting Highlights. Presented to: UWHC, Department of Orthopedics and Rehabilitation, Outpatient Neuro Rehabilitation Team (physical therapists, occupational therapists, and speech-language pathologists) (05/08/2008)
 - xv. **Grove, CR**, Health Link Smart Tools. Presented to: UWHC, Department of Orthopedics and Rehabilitation (physical therapists, occupational therapists, and speech-language pathologists) (2008 – 2021)
2. Professional Podcasts:
- i. **Grove, CR** & Van Heuklon, NC, guests with Trommelen, R, host. "Vestibular Rehabilitation Special Interest Group: Vestibular Rehabilitation in Acute Care – Episode 24." January 5, 2015. APTA, ANPT, <http://www.neuropt.org/special-interest-groups/vestibular-rehabilitation/podcasts> (01/05/2015)
 - ii. **Grove, CR**, guest with Esmonde, H, host. "The Gait Disorientation Test: A New Essential Tool for Vestibular Examination." November 15, 2022. Vestibular First Monthly Journal Club, <https://vestibularfirst.com/event/journal-club-the-gait-disorientation-test-a-new-essential-tool-for-vestibular-exam-november-2022/> (11/15/2022)

- iii. **Grove, CR**, guest with Burke C, host. “Gaze Stability in People with Multiple Sclerosis – with Colin Grove – Episode 36.” January 19, 2023. APTA, ANPT, Degenerative Diseases Special Interest Group Podcast, <https://vestibularfirst.com/event/journal-club-the-gait-disorientation-test-a-new-essential-tool-for-vestibular-exam-november-2022/> (11/15/2022)

22. Supervisory Teaching:

a. Mentoring Activities:

Graduate Students as Junior Lab Members at the UW-Madison

Name	Year(s) supervised	Current position and employer
Jennifer Bartloff, DPT	2020 – Present	PhD Student, UW-Madison
Jackson Fox	2022 – Present	PhD Student, UW-Madison

Allied Health Students (Clinical Instructor)

Name	Year(s) supervised	Current position and employer
Numerous	1997 – 2021	Data not available

Undergraduate Students as Junior Lab Members at JHU

Name	Year(s) supervised	Current position and employer
Shrutina Shrestha	2023 – Present	Undergraduate Student, JHU
Amrita Mukunda	2023 – Present	Undergraduate Student, JHU

Other (e.g., Visiting Scholars, Junior Faculty)

Name	Year(s) supervised	Current position and employer
Jenna Woestman, AuD, CCC-A	2016 – 2021	Audiologist, UW-Madison
Amanda Mravec, AuD, CCC-A	2016 – 2021	Audiologist, UW-Madison
Lara Gingerich, AuD, CCC-A, FAAA	2016 – 2021	Audiologist, UW-Madison

23. Lectureships, Seminar Invitations, and Visiting Professorships:

a. National/International:

1. Screening Adults for Vestibular Loss Using Tests of Balance and Gait. Department of Otolaryngology-Head & Neck Surgery, University of Rochester, Rochester, NY, USA (04/01/2022)
2. To the Moon and Back: A Mission to Conquer the Challenges Associated with Vestibular Cognition. University of Kansas Medical Center, Kansas City, KS, USA (10/12/2022)
3. To the Moon and Back: A Mission to Conquer the Challenges Associated with Vestibular Cognition. Emory University, Atlanta, GA, USA (04/28/2023)

b. Institutional:

1. A Novel Method for Treating Visually-induced Motion Sickness. Invited talk: Otorhinolaryngology Research Tornado, Department of Surgery, Division of Otolaryngology Head & Neck Surgery, School of Medicine and Public Health, UW-Madison, Madison, WI, USA (02/20/2019)

2. The Reliability and Validity of a New Virtual-reality-based Balance Test. Invited talk: Physical Medicine and Rehabilitation Resident's Research Day, UW-Madison, School of Medicine and Public Health, Department of Orthopedics and Rehabilitation, Madison, WI, USA (05/01/2020)
3. Development and Implementation of a High-precision Immersive Robotic Environment for Sensorimotor Rehabilitation to Reduce Dizziness and Improve Balance. Podium presentation at Managing Balance and Mobility Phenotypes Using Next Generation Technologies: Artificial Intelligence, Biomechanical Sensing, and Beyond; interdisciplinary symposium sponsored by the UW-Madison ICTR and Wisconsin Institute for Healthcare Systems Engineering; October 30, 2020; Madison, WI, USA (10/30/20)
4. Screening Adults for Vestibular Loss Using Tests of Balance and Gait. Center for Hearing and Balance Seminar Series, Department of Otolaryngology-Head & Neck Surgery, JHU, Baltimore, MD, USA (10/19/21)
5. Screening Adults for Vestibular Loss Using Tests of Balance and Gait. Vestibular Rehabilitation Triage (VeRT) Monthly Meeting, Department of Otolaryngology-Head & Neck Surgery, JHU, Baltimore, MD, USA (01/12/2022)
6. To the Moon and Back: A Mission to Conquer the Challenges Associated with Vestibular Cognition. Presented at Stimulating Translational Opportunities for Research in Movement Science series, Emory University, Atlanta, GA, USA (11/02/2023)

24. Invitations to National/International, Regional, and Institutional Conferences:

a. National and International:

1. **Grove, CR.** Our 'Three Sense' Worth on Postural Control in Developmental Coordination Disorder. Education session presented at: 26th Annual Motor Development Research Consortium; October 31-November 1, 2003; Columbus, OH, USA (faculty, graduate students, and undergraduate students) (11/01/2003)
2. **Grove, CR.** The Dos and Don'ts of Migrainous Vertigo. ANPT roundtable discussion at: 2006 APTA Combined Sections Meeting; February 2-5, 2006; San Diego, CA, USA (physical therapists) (02/04/2006)
3. **Grove, CR.** Illustration of a Framework for Facilitating Progress and Maximizing Recovery. Educational session presented at: Vestibular Rehabilitation: An Advanced Course and Update (Susan L. Whitney, PT, PhD, FAPTA, Director); March 8-9, 2008; Pittsburgh, PA, USA (physical therapists) (03/08/2008)
4. **Grove, CR, Schick, KP.** A Bright Future is a Reflection of Our Past: The Use of Clinical Narratives in Professional Advancement and Recognition at the UWHC, Educational session presented at: 2010 APTA Combined Sections Meeting; February 16-19, 2010 Boston, MA, WI, USA (physical therapists) (02/18/2010)
5. **Grove, CR.** Developing a Balance Center. ANPT roundtable discussion at: 2010 APTA Combined Sections Meeting; February 16-19; Boston, MA, USA (physical therapists) (02/19/2010)
6. Callahan, J, Crumley, RD, Ford-Smith, C, **Grove, CR**, Helminski, JO, Holmberg, JM, Johnson, KM, Lambert, KH, Morris, LO, Mucha, A, Schubert, MC, & Whitney, SL. Expanding Neurologic Expertise: Advanced Practice in Vestibular Physical Therapy. Course presented at: University of Pittsburgh, Pittsburgh, PA, USA (physical therapists) (10/14–15/2010)
7. Callahan, J, Crumley, RD, Ford-Smith, C, **Grove, CR**, Helminski, JO, Holmberg, JM, Johnson, KM, Lambert, KH, Morris, LO, Mucha, A, Schubert, MC, & Whitney, SL. Expanding Neurologic Expertise: Advanced Practice in Vestibular Physical Therapy. Preconference course presented at: 2011 APTA Combined Sections Meeting, San Diego, CA, USA (physical therapists) (02/08–09/2011)
8. Campeau, M, **Grove, CR***, Smith, B, & Van Heuklon, NC. Evaluating and Treating Patients with Vestibular Syndromes in Acute Settings. Educational session presented at: 2014 APTA

Combined Sections Meeting; February 3-6,2014; Las Vegas, NV, USA (physical therapists) (02/04/2014)

9. Callahan, J, Crumley, RD, Ford-Smith, C, **Grove, CR**, Helminski, JO, Holmberg, JM, Johnson, KM, Lambert, KH, Morris, LO, Mucha, A, Schubert, MC, & Whitney, SL. Expanding Neurologic Expertise: Advanced Practice in Vestibular Physical Therapy, Presented by UWHC Department of Orthopedics and Rehabilitation and the ANPT, Madison, WI, USA (physical therapists) (09/14–15/2015)
10. Anson, E, **Grove, CR**, & Keshavarz, B. Perceiving is Believing: Understanding Verticality Perception, Navigation, and Motion Perception in Healthy and Impaired Populations. Education session: 2021 APTA Combined Sections Meeting; February 24-27, 2021; Orlando, FL, USA (physical therapists) (02/01/2021)
11. **Grove, CR**. Treatment of vestibular misperception. Educational Session: 2021-2022 Advanced Vestibular Physical Therapy Certification Course; University of Pittsburgh, August 15, 2021; Pittsburgh, USA (physical and occupational therapists) (08/15/21)
12. **Grove, CR**. Treatment of vestibular misperception. Educational Session: 2022-2023 Advanced Vestibular Physical Therapy Certification Course; University of Pittsburgh, January 5, 2023; Pittsburgh, USA (physical and occupational therapists) (01/05/23)
13. **Grove, CR**. Recognizing and Rehabilitating Postural Control and Gait Impairments in People with Vestibular Dysfunction. Educational Session: 2023 Clinical Vestibular Competency Course; JHU; Baltimore, USA (physical therapists) (On-demand, 2023)
14. **Grove, CR**, Tevzadze, N. Diagnosis and Management of Vestibular Migraine and Persistent Postural Perceptual Dizziness. Educational Session: 2023 Clinical Vestibular Competency Course; JHU; Baltimore, USA (physical therapists) (On-demand, 2023)
15. **Grove, CR**. Case Study in the Treatment of Vestibular Misperception. Educational Session: 2023 Clinical Vestibular Competency Course; JHU; Baltimore, USA (physical therapists) (On-demand, 2023)
16. Cook, H, **Grove, CR**, Ludwig, D, Nogi, A. Facilitating Mentorship with Novice Vestibular Clinicians. Educational Session: 2023 Clinical Vestibular Competency Course; JHU; Baltimore, USA (physical therapists) (On-demand, 2023)
17. **Grove, CR***, Dibble, LE, Klatt, BN. Recognizing and Rehabilitating Central Vestibular Dysfunction in People Living with Neurodegenerative Diseases. Education session: 2024 APTA Combined Sections Meeting; February 15-17, 2024; Boston, MA, USA (physical therapists) (02/15/2024)

b. Regional:

1. **Grove, CR**. Traumatic Brain Injury. Physical Therapy Seminar, Educational Teleconference Network, Madison, WI, USA (physical therapists) (07/19/1999)
2. Dewane, JA, **Grove, CR**, & Shea, TA. Clinical Decision Making in Vestibular Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) 06/09–10/2000
 - i. Presentations:
 - (a) Central Vestibulopathy
 - (b) Computerized Dynamic Posturography and Other Functional Measures of Postural Control
 - (c) Clinical Decision Making and Treatment Progression
3. Dewane, JA, **Grove, CR**, & Shea, TA. Benign Paroxysmal Positional Vertigo (BPPV/BPPN). Educational session presented at: 2001 Wisconsin Physical Therapy Association Fall Conference; September 27-28, 2001; Madison, WI, USA (physical therapists) (09/28/2001)
4. Dewane, JA, **Grove, CR**, & Shea, TA, Clinical Decision Making in Vestibular Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (10/11–14/2001)
 - i. Presentations:
 - (a) Clinical Decision Making: A Case Study Approach
 - (b) Vestibular Migraine: Diagnosis and Management

- (c) Case Presentation: Central Vestibulopathy
 - (d) Clinical Postural Control Evaluation
 - (e) Computerized Dynamic Posturography
5. **Grove, CR.** Rehabilitation Enhances Recovery Following Neurologic Injury: The Evidence from Microscopes, Monkeys, and Man. Education session presented as part of the Southwest District Evidence-based Medicine Lecture Series, Wisconsin Physical Therapy Association, Madison, WI, USA (physical therapists) (02/12/2002)
 6. Dewane, JA, **Grove, CR***, & Shea, TA. Introduction to Clinical Decision Making in Vestibular Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (06/28–29/2002)
 - i. Presentations:
 - (a) Case Studies: Patients with Postural Control Impairments
 - (b) Examination and Treatment of Gait Impairments
 - (c) Examination and Treatment of Postural Control Impairments
 - (d) Pathophysiology of Vestibular Disorders
 7. Dewane, JA, **Grove, CR**, & Shea, TA. Introduction to Clinical Decision Making in Vestibular Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (06/06–07/2003)
 - i. Presentations:
 - (a) Case Studies: Patients with Postural Control Impairments
 - (b) Examination and Treatment of Postural Control Impairments: Part II
 - (c) Examination and Treatment of Postural Control Impairments: Part I
 - (d) Framework for Facilitating Progress and Maximizing Recovery
 8. Dewane, JA, **Grove, CR***, & Shea, TA. Clinical Decision Making in Vestibular and Balance Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (06/10–12/2004)
 - i. Presentations:
 - (a) Panel Discussion of Case Studies
 - (b) Case Studies: Patients with Postural Control Impairments
 - (c) Examination and Treatment of Postural Control Impairments
 - (d) Framework for Facilitating Progress and Maximizing Recovery
 9. **Grove, CR.** Vestibular Rehabilitation in Pediatrics. Educational session presented at: Wisconsin Physical Therapy Association CATCH Conference; July 9-10, 2004; Madison, WI, USA (physical therapists) (07/10/2004)
 10. Dewane, JA, **Grove, CR**, & Shea, TA. Clinical Decision Making in Vestibular and Balance Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (06/02–04/2005)
 - i. Presentations:
 - (a) Vestibular Disorders in Children and Adolescents
 - (b) Facilitating Progress and Maximizing Recovery Using a Systems Model Framework
 - (c) Clinical Decision Making and Interventions for Postural Control Impairments
 - (d) Examination of Postural Control: A Systems Model Approach
 11. Dewane, JA, **Grove, CR**, & Shea, TA. Introduction to Clinical Decision Making in Vestibular Rehabilitation. Educational session presented at: 2005 Wisconsin Physical Therapy Association Fall Conference; November 10-11, 2005; Stevens Point, WI, USA (physical therapists) (11/10/2005)
 - i. Presentations:
 - (a) Vestibular Disorders in Children and Adolescents
 - (b) Facilitating Progress and Maximizing Recovery Using a Systems Model Framework
 - (c) Clinical Decision Making and Interventions for Postural Control Impairments
 - (d) Examination of Postural Control: A Systems Model Approach
 12. Dewane, JA, **Grove, CR***, & Shea, TA. Clinical Decision Making in Vestibular and Balance

Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (06/01–03/2006)

i. Presentations:

- (a) Vestibular Disorders in Children and Adolescents
- (b) Integration and Clinical Pearls
- (c) Facilitating Progress and Maximizing Recovery Using a Systems Model Framework
- (d) Clinical Decision Making and Interventions for Postural Control Impairments
- (e) Examination of Postural Control: A Systems Model Approach

13. Dewane, JA, **Grove, CR***, & Shea, TA. Clinical Decision Making in Vestibular and Balance Rehabilitation. Course presented at: Madison, WI, USA (physical therapists) (11/29–12/01/2007)

i. Presentations:

- (a) Vestibular Disorders in Children and Adolescents
- (b) Integration and Clinical Pearls
- (c) Facilitating Progress and Maximizing Recovery Using a Systems Model Framework
- (d) Clinical Decision Making and Interventions for Postural Control Impairments
- (e) Examination of Postural Control: A Systems Model Approach

14. **Grove, CR**. Examination and Treatment of Postural Control and Gait Dysfunction in Individuals with Neurodegenerative Disease. Educational session presented at: 2008 Wisconsin Physical Therapy Association Spring Conference; April 17-18, 2008, Stevens Point, WI, USA (physical therapists) (04/17/2008)

15. **Grove, CR**. Physical Therapy Management of Patients with Vestibular and Balance Disorders. Educational session presented at: 2009 Wisconsin Speech and Hearing Professionals Annual Conference; February 6-7, 2009; Madison, WI, USA (audiologists) (02/07/2009)

16. **Grove, CR*** & Van Heuklon, NC. Vestibular Rehabilitation in Acute Care. Two-day course presented at: ThedaCare, Appleton, WI, USA (Director) (physical therapists) (11/05–06/2011)

17. **Grove, CR*** & Van Heuklon, NC. Vestibular Rehabilitation in Acute Care. One-day course presented at: Aurora BayCare Medical Center, Green Bay, WI, USA (Director) (physical therapists) (01/09/2013)

18. **Grove, CR**. Fundamentals of Vestibular Rehabilitation. One-day course presented at: UWHC, Madison, WI, USA (physical therapists) (01/09/2016)

19. **Grove, CR**. Clinical Science of Vestibular Rehabilitation. One-day course presented at: UW-Madison, Health Sciences Center, Madison, WI, USA (physical therapists) (01/16/2016)

20. **Grove, CR**. Comprehensive, Customized, and Creative Treatment of Persons with Impaired Balance. Education session presented at: 2017 Minnesota Physical Therapy Association Annual Conference; March 24-25, 2017; St. Paul, MN, USA (physical therapists) (03/25/2017)

c. Institutional:

1. **Grove, CR*** & Van Heuklon, NC. Vestibular Rehabilitation in Acute Care. One-day course presented at: UWHC, Madison, WI, USA (Director) (physical therapists) (12/10/2011)

2. Bruno, A, Cumming, J, **Grove, CR**, Guse, L, Lamprey, K, Janczewski, J, Mattioda, M, & Spiro, K. Vestibular Testing. UWHC Peripheral Vestibular Hypofunction Clinical Practice Guideline: Part I. Course presented at: UWHC, Madison, WI, USA (physical therapists) (04/11/2019)

3. Bruno, A, Cumming, J, **Grove, CR**, Guse, L, Lamprey, K, Janczewski, J, Mattioda, M, & Spiro, K. Vision and Oculomotor Examination. UWHC Peripheral Vestibular Hypofunction Clinical Practice Guideline: Part II. Course presented at: UWHC, Madison, WI, USA (physical therapists) (04/18/2019)

25. Abstract Presentations at National/International, Regional, and Institutional Conferences:

a. National and International:

1. **Grove, CR*** & Lazarus, JC. Sensory Organization of Postural Control in Children with and without Developmental Coordination Disorder. (Oral presentation) Pediatrics Section: APTA Combined Sections Meeting; February 4-8, 2004; Nashville, TN, USA (physical therapists) (02/06/2004)
2. **Grove, CR***, Brody, LT & Heiderscheit, BC. Rehabilitation of a Man with Runner's Dystonia. ANPT poster presentation at: 2010 APTA Combined Sections Meeting; February 16-19, 2010; Boston, MA, USA (physical therapists) (02/19/2010)
3. **Grove, CR***, McClinton SM, & Heiderscheit, BC. Recognizing Runner's Dystonia. Orthopedic Section platform presentation at: APTA Combined Sections Meeting; February 16-19, 2010; Boston, MA, USA (physical therapists) (02/19/2010)
4. **Grove, CR***, Whitney, SL, Caldera, KE, Hetzel, SJ, Heiderscheit, BC, & Pyle, GM. Effect of repetitive administration of the bertec balance advantage sensory organization test. (Poster presentation) ANPT: 2020 APTA Combined Sections Meeting; February 12-15, 2020; Denver, CO, USA (physical therapists) (02/13/2020)
5. **Grove, CR***, Whitney, SL, Caldera, KE, Hetzel, SJ, Heiderscheit, BC, & Pyle, GM. Validation of the bertec balance advantage sensory organization test. (Poster presentation) ANPT: 2020 APTA Combined Sections Meeting, February 12-15, 2020; Denver, CO, USA (physical therapists) (02/13/2020)
6. **Grove, CR***, Whitney, SL, Pyle, GM, Heiderscheit, BC. Gait analysis with inertial measurement units reveals persistent deficits in adults with chronic vestibular loss. (Poster presentation) ANPT: 2021 APTA Combined Sections Meeting; February 24-27, 2021; Orlando, FL, USA (physical therapists) (02/01/2021)
7. **Grove, CR***, Heiderscheit, BC, Pyle, GM, Whitney, SL. The gait disorientation test: a novel screening test for vestibular dysfunction. (Oral presentation) Association for Research in Otolaryngology Vestibular Oriented Research Meeting; February 16-17, 2021; Orlando, FL, USA (researchers, physicians, physical and occupational therapists, and audiologists) (02/01/2021)
8. **Grove, CR***, Heiderscheit, BC, Pyle, GM, Whitney, SL. The gait disorientation test: a new method of screening adults suspected of having vestibular dysfunction. (Oral presentation) ANPT: 2021 APTA Combined Sections Meeting; February 24-27, 2021; Orlando, FL, USA (physical therapists) (02/16/2021)
9. **Grove, CR***, Bartloff, JN, Gruben, KG. Validation of the intersection point balance metric in adults. (Poster presentation) 2021 ANPT Annual Conference; October 1-3, 2021; Virtual (physical therapists) (10/1/2021)
10. **Grove, CR***, Bartloff, JN, Gruben, KG. Reliability of the intersection point balance metric in community-dwelling adults. (Poster presentation) 2021 ANPT Annual Conference; October 1-3, 2021; Virtual (physical therapists) (10/1/2021)
11. **Grove, CR***, Souza, W, Gerend, PL, Marquardt, R, Ryan, C, Schubert, MC. Does geographical location influence healthcare for adults with suspected vestibular dysfunction? (Poster presentation) ANPT: 2022 APTA Combined Sections Meeting; February 2-5, 2022; San Antonio, TX, USA (physical therapists) (02/04/2022)
12. **Grove, CR***, Pyle, GM, Heiderscheit, BC, Caldera, KE, Hetzel, SJ, & Whitney, SL. A new spin on sensory organization testing (Poster presentation). 31st Barany Society Meeting; May 9-11, 2022; Madrid, Spain (clinicians and scientists) (05/09/2022)
13. **Grove, CR***, Wagner, A, Loyd, BJ, Dibble, LA, Schubert, MC. People living with advanced multiple sclerosis demonstrate unique strategies to compensate for vestibular-ocular reflex deficits. (Poster presentation) ANPT: 2nd International Conference for Vestibular Rehabilitation; October 15-17, 2022, Minneapolis, MN, USA (physical therapists) (10/16/2022)

14. Gruben, KG*, **Grove, CR**, Bartloff, JN. Vision and proprioceptive effects on force intersection point in quiet human standing. (Poster presentation) 2022 Society for Neuroscience Annual Conference; November 12-16, 2022; San Diego, USA (multi-disciplinary) (11/14/2022)
15. **Grove, CR**, Gruben, KG, Fox, J, Kheradmand, A, Tian, J, Schubert, MC. Behavioral and perceptual measures of graviception to predict the severity of and recovery from space motion sickness. (Poster presentation) 2023 National Aeronautics and Space Administration, Human Research Program, Investigators' Workshop; February 7-9, 2023; Galveston, TX, USA (multi-disciplinary) (02/07/23)
16. Schubert, MC*, Migliaccio, AA, Todd, C, Yang, V, Wood, SJ, **Grove, CR**, Folga, RV, Thorman, I. Self-administered Rehabilitation Tool to Mitigate Motion Sickness and Enhance Sensorimotor Recovery. (Poster presentation) 2023 National Aeronautics and Space Administration, Human Research Program, Investigators' Workshop; February 7-9, 2023; Galveston, TX, USA (multi-disciplinary) (02/07/23)
17. Loyd, BJ*, Calwell, K, Gul, Y, Fangman, A, **Grove, CR**, Wagner, A, Schubert, MC, Dibble, LE. Change in Dizziness Handicap and Gaze Stability following Vestibular Rehabilitation in People with Multiple Sclerosis. (Poster presentation) ANPT: 2023 APTA Combined Sections Meeting; February 22-25, 2023; San Diego, CA, USA (physical therapists) (02/25/23)
18. **Grove, CR***, Loyd, BJ, Wagner, A, Dibble, LE, Schubert, MC. Vestibular and Compensatory Oculomotor Functions Decline as Multiple Sclerosis Progresses. (Poster presentation) ANPT: 2023 APTA Combined Sections Meeting; February 22-25, 2023; San Diego, CA, USA (physical therapists) (02/25/23)
19. Schubert, MC*, **Grove, CR**, Lefler, J, Brungart, D, Hoppes, C. Portable, virtual reality headset test of ocular alignment in acute vestibular and central oculomotor pathology. (Poster presentation) Military Health Systems Research Symposium. August 14-17, 2023; Kissimmee, FL, USA (2023)
20. Schubert, MC*, Wood, SJ, **Grove, CR**, Ludwig, D, Gallimore, DM, Carter, K, Preston, AM, Folga, RV, Stewart, CM. Self-administered Rehabilitation Tool to Mitigate Motion Sickness and Enhance Sensorimotor Recovery. (Poster presentation) National Aeronautics and Space Administration, Human Research Program, Investigators' Workshop; February 13-16, 2024; Galveston, TX, USA (02/13-16/2024)
21. Ludwig, D*, **Grove, CR**, Hoppes, C, Schubert, MC. Virtual Reality Assessment of Binocular Alignment in Acute Vestibular Schwannoma Resection. (Poster presentation) ANPT: 2023 APTA Combined Sections Meeting; February 15-17, 2024; Boston, MA, USA (physical therapists) (02/16/2024)
22. **Grove, CR***, Loyd, BJ, Petrino, S, Dibble, LE, Schubert, MC. Comparison of Vertical and Horizontal Gaze Stabilization Mechanisms in People with Multiple Sclerosis. (Poster presentation) ANPT: 2023 APTA Combined Sections Meeting; February 15-17, 2024; Boston, MA, USA (physical therapists) (02/16/2024)

b. Institutional:

1. **Grove, CR***, Wagner, A, Loyd, BJ, Dibble, LA, Schubert, MC. People living with advanced multiple sclerosis demonstrate unique strategies to compensate for vestibular-ocular reflex deficits. Poster presentation. 12th Physical Medicine and Rehabilitation Research and Clinical Expo, Baltimore, MD, USA (multi-disciplinary) (12/06/2022)

26. Research Focus:

Vestibular dysfunction affects tens of millions of Americans. Although vestibular rehabilitation is effective, many patients experience chronic dizziness and increased risk for falls. My long-term goals relate to developing novel methods for evaluating and treating imbalance, gait ataxia, gaze instability, and impaired vestibular cognition in this underserved population.

27. Grant Support:

a. Pending Support:

1. Private Foundation Awards:
 - i. PI: National Multiple Sclerosis Society, Research Grant, “DIIVA-MS: Daily versus Intermittent Incremental Vestibulo-ocular Reflex Adaptation as a Novel Treatment for Dizziness in People with Multiple Sclerosis,” 40%, \$658,896 (2024 – 2027)
2. Federal Awards:
 - i. PI: Department of Defense under the Multiple Sclerosis Research Program, “ACTIVE MS: Accelerating Customized Therapies to Improve Vestibular-related Functions in People Living with Multiple Sclerosis,” 40%, \$1,580,829 (2024 – 2027)

b. Previous Support:

1. Institutional Awards:
 - i. NIH TL1 Predoctoral Traineeship: Institute for Clinical and Translational Research, UW-Madison, UL1TR000427, TL1TR000429, 100%, \$22,920 (2015)
 - ii. NIH TL1 Predoctoral Traineeship: Institute for Clinical and Translational Research, UW-Madison, UL1TR000427, TL1TR000429, 100%, \$23,376 (2016)
 - iii. Co-I: University of Wisconsin Institute for Clinical and Translational Sciences, Novel Methods Pilot Award, “High-precision Immersive Robotic Environment for Sensorimotor Rehabilitation,” \$49,917, 50%, (2020 – 2021)
2. Federal Awards:
 - i. Postdoctoral Fellow, Department of Defense under the Psychological Health/Traumatic Brain Injury Research Program Complex Traumatic Brain Injury Rehabilitation Research Clinical Trial Award, “Incremental Velocity Error as a New Treatment in Vestibular Rehabilitation (INVENT VPT),” \$2,480,315, 100%, (2021 – 2023)
 - ii. PI: National Aeronautics and Space Administration, Human Research Program, Investigator’s Workshop Grant Augmentation Award, “Sensitivity of Reflexive vs Perceptual Measures of Graviception to Predict Severity of Space Motion Sickness,” \$20,700, effort not allowed (2022 – 2023)

28. Bibliography:

a. Published and Accepted Research Articles (clinical, basic science, other) in Refereed Journals:

1. Badke, MB, Shea, TA, Miedaner, JA, & **Grove, CR**. Outcomes after rehabilitation for adults with balance dysfunction. *Arch Phys Med Rehabil*. 2004 Feb;85(2):227-33.
2. Badke, MB, Miedaner, JA, Shea, TA, **Grove, CR**, & Pyle, GM. Effects of vestibular and balance rehabilitation on sensory organization and dizziness handicap. *Ann Otol Rhinol Laryngol*. 2005 Jan;114(1 Pt 1):48-54.
3. **Grove, CR** & Lazarus, JC. Impaired re-weighting of sensory feedback for maintenance of postural control in children with developmental coordination disorder. *Hum Mov Sci*. 2007 Jun;26(3):457-76.
4. **Grove, CR**, Whitney, SL, Hetzel, SJ, Heiderscheid, BC, & Pyle, GM. Effect of repetitive administration of a next-generation sensory organization test in adults with and without vestibular dysfunction. *Otol Neurotol*. 2021 Mar;42(3):e363-e370.
5. **Grove, CR**, Whitney, SL, Hetzel, SJ, Heiderscheid, BC, & Pyle, GM. Validation of a next-generation sensory organization test in adults with and without vestibular dysfunction. *J Vestib Res*. 2021;31(1):33-45.
6. **Grove, CR**, Heiderscheid, BC, Pyle, GM, Loyd, BJ, & Whitney, SL. The gait disorientation test: a new method for screening adults with dizziness and imbalance. *Arch Phys Med Rehabil*. 2021;Apr;102(4):582-90.
7. **Grove, CR**, Whitney, SL, Pyle, GM, & Heiderscheid, BC. Instrumented gait analysis to

identify persistent deficits in gait velocity and whole-body turning dynamics in adults with chronic vestibular loss. *JAMA Otolaryngol. Head Neck Surg.* 2021;Jul;1276;online.

8. Souza, W, **Grove, CR**, Gerend, P, Ryan, C, Schubert, MC. Regional differences in patient-reported outcomes as a proxy of healthcare practices for Americans living with vestibular symptoms. *J Vestib Res.* 2022:Jul;2.
9. **Grove, CR**, Souza, W. Gerend, P, Ryan, C, Schubert, MC. Patients' perceptions regarding the management of benign paroxysmal positional vertigo: insights from the vestibular disorders association patient registry. *Patient Relat Outcome Meas.* 2022;13:157-168;
10. **Grove, CR**, Wagner, A, Loyd, BJ, Dibble, LE, Schubert, MC. Unique compensatory oculomotor behavior in people living with multiple sclerosis. *J Neurol Sci.* 2022 Sep 6;442:120411.
11. Wagner AR, **Grove CR**, Loyd BJ, Dibble LE, Schubert MC. Compensatory saccades differ between those with vestibular hypofunction and multiple sclerosis pointing to unique roles for peripheral and central vestibular inputs. *J Neurophysiol.* 2022 Oct 1;128(4):934-945.
12. **Grove, CR**, Wagner A, Yang VB, Loyd BJ, Dibble LE, Schubert MC. Greater disability is associated with worse vestibular and compensatory oculomotor functions in people living with multiple sclerosis. *Brain Sci.* 2022 Nov 9;12(11):1519.

b. Manuscripts Submitted:

1. **Grove, CR**, Bartloff, JN, Rosenberg, A, Whitney, SL, Heiderscheid, BC, Gruben, KG. A novel method for evaluating the influences of sensory inputs on the neurophysiological mechanisms underlying human postural control. *Front Rehabil Sci.* (in revision)
2. Nogi, A, Gold, D, **Grove, CR**, Carey, JC, Schubert, MC. Initial success of a multidisciplinary vestibular rehabilitation triage program. *Clinical Otolaryngol* (in revision)
3. **Grove, CR**, Anson, ER, Agrawal, Y, Simonsick, E, Schubert, MC. Vestibular and auditory function effect spatial navigation in community-dwelling healthy adults: analysis from the Baltimore longitudinal study of aging. *Audiology & Neurotology.* (in revision)
4. Bartloff, JN, Gruben, KG, **Grove, CR**, Reliability and validity of the force intersection point in the assessment of human quiet standing balance. *Hum Mov Sci.* (in review)

c. Review Articles:

1. **Grove CR**, Klatt, BN, Wagner AR, Anson ER, Vestibular perceptual testing from lab to clinic: a review. *Font. Neurol.* 14(2023):1265889.

d. Book Chapters:

1. **Grove, CR**, Dewane, JA, Brody, LT, Impaired Balance. In: Brody, LT & Hall C, eds. *Therapeutic Exercise: Moving Towards Function.* 3rd ed. Lippincott, Williams, & Wilkins; 2010: Chapter 8
2. **Grove, CR** & Dewane, JA. Impaired Balance. In: Brody, LT & Hall C, eds. *Therapeutic Exercise: Moving Towards Function.* 4th ed. Lippincott, Williams, & Wilkins; 2017: chap 8
3. **Grove, CR** & Schubert, MC. Vestibular and Balance Rehabilitation Therapy: Program Essentials. In: Francis, HW & Limb, CJ eds. *Cummings Otolaryngology-Head and Neck Surgery.* 8th ed. Elsevier; chap 170 (in review)

e. Manuals, Videos, Computer Programs, and Other Teaching Aids:

1. Potter, M, **Grove, CR**, Balance Testing Training DVD
2. **Grove, CR**, Fox J, Gruben, KG. Virtual Reality Verticality Perception Test (Subjective Visual Vertical, Rod and Frame Test, and Rod and Disk Test)

f. Published Abstracts:

1. **Grove, CR** & Lazarus, JC. Sensory organization of postural control in children with and

- without developmental coordination disorder. *Pediatr Phys Ther.* 2004 Spring;16(1):72-73.
2. Lazarus J-AC, Hunley JH, & **Grove CR**. Sensory, attention, and motor skills (SAM): Developmental complexity of postural control. *J Sport Exerc Psychol.* 2008;(30):S51-S.
 3. **Grove, CR**, Heiderscheit, BC, & Brody, LT. Rehabilitation of a man with runner's dystonia. *J Neurol Phys Ther.* 2009;33(4):227.
 4. **Grove, CR**, McClinton, SM, & Heiderscheit, BC. Recognizing runner's dystonia. *J Orthop Sports Phys Ther.* 2010;40(1):A20.
 5. **Grove, CR**, Whitney, SL, Caldera, KE, Hetzel, SJ, Heiderscheit, BC, & Pyle, GM. Effect of repetitive administration of the bertec balance advantage sensory organization test. *J Neurol Phys Ther.* 2020;44(1):118.
 6. **Grove, CR**, Whitney, SL, Caldera, KE, Hetzel, SJ, Heiderscheit, BC, & Pyle, GM. Validation of the bertec balance advantage sensory organization test. *J Neurol Phys Ther.* 2020;44(1):118.
 7. **Grove, CR**, Heiderscheit, BC, & Pyle, GM, Whitney, SL. The gait disorientation test. A novel method of screening adults suspected of having vestibular dysfunction. *J Neurol Phys Ther.* 2021;45(1):66.
 8. **Grove, CR**, Souza, W, Gerend, PL, Marquardt, R, Ryan, C, Schubert, MC. Does geographical location influence healthcare for adults with suspected vestibular dysfunction? *J Neurol Phys Ther.* 2022;46(1):67.
 9. **Grove, CR**, Pyle, GM, Heiderscheit, BC, Caldera, KE, Hetzel, SJ, & Whitney, SL. A new spin on sensory organization testing. *J Vest Res.* 2022;32(s1):S191.
 10. **Grove, CR**, Loyd, BJ, Wagner, AR, Dibble, LE, Schubert, MC. Vestibular and Compensatory Oculomotor Functions Decline as Multiple Sclerosis Progresses. *J Neurol Phy Ther.* <https://journals.lww.com/jnpt/Documents/CSM%202023%20ANPT%20Accepted%20Posters.pdf>
 11. Loyd, BJ, Calwell, K, Gul, Y, Fangman, A, **Grove, CR**, Wagner, AR, Schubert, MC, Dibble, LE. Change in Dizziness Handicap and Gaze Stability Following Vestibular Rehabilitation in People with Multiple Sclerosis. *J Neurol Phy Ther.* <https://journals.lww.com/jnpt/Documents/CSM%202023%20ANPT%20Accepted%20Posters.pdf>

29. Contributions Not Otherwise Noted:

a. Student Leadership:

1. Co-Chair: Health Care Symposium. Saint Louis University, St. Louis, MO, USA (1993)
2. President (1992 – 1993) and Member (1991 – 1992): Physical Therapy Student Council, College of Health Sciences, Physical Therapy Program, Saint Louis University, St. Louis, MO, USA