

Curriculum Vitae

Vicki L. Gray, M.P.T., Ph.D.

Postdoctoral Fellow, Department of Physical Therapy and Rehabilitation Science,
University of Maryland School of Medicine

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Contact Information

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Foreign Languages English

Education

1992 B.P.A., Public Administration, University of Windsor
2004 B.H.K., Human Kinetics (Movement Science), University of Windsor
2009 M.P.T., Physical Therapy, Western University, London, ON
2012 Ph.D., Health and Rehabilitation Science (Physical Therapy), Western University
ON

Post-Doctoral Training

2013-2016 Physical Therapy and Rehabilitation Science, University of Maryland, Baltimore
Advisors: Mark Rogers and Sandy McCombe Waller

Medical Licensures

Active British Columbia, Canada

Employment History

Academic Appointments

2007-2010 Research Assistant, Physical Therapy, University of Western Ontario
2010-2012 Research Assistant, Physical Therapy, University of British Columbia
2012 Research Associate, Physical Therapy, University of British Columbia
2016- Research Associate, Department of Physical Therapy and Rehabilitation Science,
University of Maryland Baltimore

Other Employment

1992-2005 Supervisor, KELCOM Telemessaging, Windsor, ON

2012 Physiotherapist, Lions Gate Hospital, North Vancouver, BC

Professional Society Membership

2009-present General Member, Canadian Physiotherapy Association (Neuroscience Division)
2010-present General Member, Society for Neuroscience
2011-present Registrant, College of Physiotherapists of British Columbia
2013-present General Member, American Heart Association
2014 General Member, International Society of Posture and Gait Research
2015-present General Member, American Physical Therapy Association (Neurology Division)
2015-present General Member, American Society for Neurorehabilitation

Honors and Awards

2009-2012	Western Graduate Research Scholarship Rehabilitation Sciences	\$57,000
2007-2008	Graduate Bursary	\$2,040
2008	Society of Graduate Students: Ontario Student Opportunity Trust Fund	\$1,000
2007	Society of Graduate Students: Ontario Student Opportunity Trust Fund	\$1,000
2006-2007	Western Graduate Research Scholarship Physical Therapy	\$3,900
2005-2006	Western Graduate Research Scholarship Physical Therapy	\$2,215

Administrative Service

Institutional Service

2005-2006 Student Representative M.Sc. Program Committee, University of Western Ontario
2006-2007 Student Representative M.Sc./Ph.D. Physical Therapy Field Committee, University of Western Ontario
2007-2010 Mentor, Mentorship Program, Health and Rehabilitation Science, University of Western Ontario
2013, 2015 Awards reviewer, Graduate Program in Life Sciences (GPILS) Awards

National Service

2013-present Manuscript reviewer, *Disability and Rehabilitation*
2013-present Manuscript reviewer, *Archives of Physical Medicine and Rehabilitation*
2013-present Manuscript reviewer, *Neurorehabilitation and Neural Repair*
2014, 2016 Grant Reviewer, NIDRR, Health and Function
2016- Manuscript reviewer, *Journal of Applied Physiology*
2016 Abstract Reviewer, 21st IAGG World Congress of Gerontology and Geriatrics

Teaching Service

University of Western Ontario

2005 Graduate Teaching Assistant, Faculty of Health Science
 HS203/KIN222 Human Anatomy

58 undergraduates (2 lab groups) 2 hours/week for 10 weeks

- 2006 Graduate Teaching Assistant, Faculty of Health Science
HS203 Human Anatomy
130 undergraduates (4 lab groups) 4 hours/week for 10 weeks
130 undergraduates 2hr lecture: Central Nervous System
- 2006 Graduate Teaching Assistant and Lab Coordinator, Faculty of Health Science
HS203/KIN222 Human Anatomy
38 students 1 hour /week for 10 weeks
- 2007 Graduate Teaching Assistant, Faculty of Health Science
HS411 Critical Appraisal
- 2009 Graduate Teaching Assistant, School of Physical Therapy
PT9511: Foundations of Physical Therapy Practice
50 undergraduates 2 hour/8 labs)

University of British Columbia

- 2010 Clinical Skills Assistant, Department of Physical Therapy
RSPT516 Clinical Decision Making, 80 students (4 contact hours)
- 2012 Course Manager, Research Methods, Rehabilitation Sciences
RHSC500: 3 PhD and 7 MSc students (3 hour/week for 9 weeks)

University of Maryland Baltimore

- 2013 Lab Assistant, geriatrics, balance, cranial nerves
Department of Physical Therapy and Rehabilitation Science
BS2: Basic Science: 54 DPT students (6 contact hours)
- 2014, 2015 Seminar Facilitator, research
Department of Physical Therapy and Rehabilitation Science
NMII: Neuromuscular: 12 DPT students (6 contact hours)
- 2014 Seminar Facilitator, research
Department of Physical Therapy and Rehabilitation Science
Medial Issues: 13 DPT students (2 contact hours)
- 2014 Lab Assistant, muscle lab
Department of Physical Therapy and Rehabilitation Science
BS2: Basic Science: 54 DPT students (3 contact hours)
- 2014 Lab Assistant, balance, geriatrics, stroke research
Department of Physical Therapy and Rehabilitation Science

- NMI: Neuromuscular: 54 DPT students (11 contact hours)
- 2015 Lab Assistant, muscle lab
Department of Physical Therapy and Rehabilitation Science
BS2: Basic Science: 56 DPT students (3 contact hours)
- 2015 Lab Assistant, balance, geriatrics, stroke research
Department of Physical Therapy and Rehabilitation Science
NMI: Neuromuscular: 56 DPT students (11 contact hours)
- 2015, 2016 PBA examiner, balance outcome measures
Department of Physical Therapy and Rehabilitation Science
NMI: Neuromuscular: (5 contact hours)
- 2016 Lab Assistant geriatrics, stroke research
Department of Physical Therapy and Rehabilitation Science
NMI: Neuromuscular: 65 DPT students (2 contact hours)
- 2016 Lab Assistant, muscle lab
Department of Physical Therapy and Rehabilitation Science
BS2: Basic Science: 60 DPT students (3 contact hours)

Grant Support

Ongoing Research Support

- 07/01/2015-06/30/2016 (PI: 25%)
“Can lateral step training improve initial postural adjustments in stroke“
Claude D. Pepper Older Americans Independence Center Research and Development Core Pilot Grant
Annual Direct Costs: 30,000
Total Direct Costs: 30,000
- 11/01/2014-09/30/2015 (PI: 100%)
“Changes in balance and falls from an intervention of voluntary or reactive lateral step training”
National Institute of Disability, Independent Living and Rehabilitation Research, Switzer Merit Fellow H133F140027
Annual Direct Costs: 75,000
Total Direct Costs: 75,000
- 07/01/2014-06/30/2016 (PI: 56%)
“Comparison of voluntary and reactive stepping in chronic stroke and healthy controls and comparison of changes in stepping strategies after an intervention of stepping”

American Heart Association, Mentored Clinical & Population
Research Award, 14CRP19880025

Annual Direct Costs: 70,000

Total Direct Costs: 140,000

07/01/2014-06/30/2016

American Heart Association, Postdoctoral Fellowship Award
Declined

Publications

Peer-reviewed journal articles

1. Garland SJ, **Gray VL**, Knorr S. Muscle activation patterns and postural control following stroke. *Motor Control*. 2009;13(4): 387-411.
2. **Gray VL**, Ivanova TD, Garland SJ. Fast squatting movements after stroke. *Clinical Neurophysiology*. 2012;123(2): 344-50.
3. **Gray VL**, Rice CL, Garland SJ. Factors that influence muscle weakness following stroke and their clinical implications: A critical review. *Physiotherapy Canada*. 2012;64(4): 415-426.
4. **Gray VL**, Ivanova TD, Garland SJ. Retraining postural responses with exercises emphasizing speed post-stroke. *Physical Therapy*. 2012; 92(7): 924-34.
5. **Gray VL**, Ivanova TD, Garland SJ. Effects of fast functional exercise on muscle activity after stroke. *Neurorehabilitation and Neural Repair*. 2012; 26(8): 968-75.
6. **Gray VL**, Ivanova TD, Garland SJ. Reliability of center of pressure measures within and between sessions in individuals post-stroke and healthy controls. *Gait & Posture*. 2014;40(1):198-203.
7. **Gray VL**, Pollock CL, Wakeling JM, Ivanova TD, Garland. Patterns of muscle coordination during stepping responses post-stroke. *Journal of Electromyography and Kinesiology*. 2015; 25(6): 959-965.
8. **Gray VL**, Ivanova TD, Garland SJ. A single session of open kinetic chain movements emphasizing speed improves speed of movement and modifies postural control in stroke. *Physiotherapy Theory and Practice*. 2016; 32(2):113-123.
9. McCombe Waller S, Yang CL, Magder L, Yungher D, Creath R, **Gray V**, Rogers MW. Impaired motor preparation and execution during standing reach in people with chronic stroke. *Neuroscience Letters*. 2016;630:38-44.

Book Chapters

1. Rogers MW, Martinez KM, McCombe Waller S, **Gray VL**. Recovery and Rehabilitation of Standing Balance after stroke. In: Stein J, Harvey R, Macko R, Winstein C, Wittenberg GF, Zorowitz RD, eds. *Stroke Recovery and Rehabilitation*, 2nd Edition, New York, NY: Demos Medical Publishing, 2014.

Proffered Communications

Local

1. **Gray VL**, Ivanova TD, Garland SJ. Open kinetic chain exercises emphasizing speed post-stroke. STEPUP 2012, Physiotherapy Research Forum for Vancouver Coastal Health, Vancouver, BC, Presentation, 2012.
2. **Gray VL**, Pollock C, Wakeling JM, Ivanova TD, Garland SJ. Muscle Coordination patterns during self-induced stepping reactions post-stroke. PTRS Research Day, University of Maryland Baltimore, MD, Presentation, 2013.
3. **Gray VL**. Does perturbation based training increase paretic limb use? Quarterly Interdisciplinary Research Meeting. University of Maryland Rehabilitation & Orthopaedic Institute, Baltimore, MD, 2016.

National

1. **Gray VL**, Ivanova T, Garland SJ. Remodeling of muscle activation patterns with exercise following stroke. Canadian Physiotherapy Association, Ottawa, ON, Presentation, 2008.
2. **Gray VL**, Ivanova TD, Garland SJ. Motor strategies in fast squatting movements after stroke. Exercise Neuroscience Meeting, London, ON, Presentation, 2009.
3. **Gray VL**, Ivanova T, Garland SJ. Changes in anticipatory postural adjustments following an exercise protocol in individuals following stroke. Canadian Stroke Congress, Quebec City, QC, Poster, 2010.
4. Garland J, Pollock C, **Gray V**. Training speed of movement post-stroke. Canadian Physiotherapy Association (CPA) Congress, Whistler, BC, Presentation, 2011.
5. **Gray VL**, Ivanova TD, Garland SJ. Changes in muscle activity during fast functional movements after stroke. Exercise Neuroscience Meeting, Waterloo, ON, Presentation, 2011.
6. **Gray VL**, Fujimoto, M, McCombe Waller S, Rogers MW. Stepping strategies for lateral balance recovery during unexpected lateral perturbations and lateral voluntary stepping in persons post-stroke. APTA Combined Sections Meeting, Indianapolis, IN, Presentation, 2015.
7. M. Inacio, **V. Gray**, W. Bair, C. Yang, O. Sanders, J. Abarro, A. Gaeta, M. Prettyman, R. Creath, S. McCombe-Waller and M.W. Rogers. Combining high intensity lateral balance training with resistance training to improve muscle performance in older people. APTA Combined Sections Meeting, Indianapolis, IN, Poster, 2015.
8. **Gray VL**, Yang, CL, McCombe Waller S, Rogers MW. Associations between foot cutaneous sensation and muscle activation patterns during unexpected lateral perturbations after stroke. American Society of Neurorehabilitation, Chicago, 2015.
9. Rogers MW, McCombe Waller S, Savin DN, **Gray VL**. Pushing the limits: Novel strategies to balance. APTA Combined Sections Meeting, Anaheim, CA, February 18, 2016.

International

1. **Gray VL**, Ivanova T, Garland SJ. Exercise-induced remodeling of muscle activation patterns following stroke. XVIIth Congress of International Society of Electrophysiology and Kinesiology, Niagara Falls, ON, Presentation, 2008.
2. **Gray VL**, Ivanova TD, Garland SJ. Motor control strategies in protective stepping movements after stroke. Society for Neuroscience, San Diego, CA, Poster, 2010.
3. **Gray VL**, Ivanova TD, Garland SJ. Postural responses are modified by exercise emphasizing speed of movement after stroke. Society for Neuroscience, Washington DC, Poster, 2011.
4. Pollock C, **Gray VL**, Wakeling JM, Ivanova TD, Garland SJ. Muscle activation patterns during a stepping reaction in people after stroke. Society for Neuroscience, New Orleans, LA, Poster, 2012.
5. **Gray V**, Pollock C, Wakeling J, Ivanova T, Garland SJ. Patterns of muscle coordination during stepping responses post-stroke. Progress in Motor Control, Montreal, QC, Poster, 2013.
6. **Gray V**, McCombe Waller S, Rogers MW. The disruption of postural responses and hand reach in standing from a startling acoustic stimulus can be modified by arm training in standing in persons post stroke, International Society for Posture and Gait Research, Vancouver, BC, Poster, 2014.
7. **Gray VL**, Fujimoto, M, McCombe Waller S, Rogers MW. Protective stepping responses to lateral perturbations of standing balance in persons post-stroke. Society for Neuroscience, Washington DC, Poster, 2014.
8. **Gray VL**, Yang, CL, McCombe Waller S, Rogers MW. The influence of sensorimotor deficits on unexpected lateral perturbations after stroke. Society for Neuroscience, Chicago, 2015.
9. Yang C-L, **Gray, VL** Fujimoto, M, McCombe Waller S, Rogers, MW. Reactive and voluntary stepping in individuals with stroke: a comparison between paretic and nonparetic leg responses. Society for Neuroscience, Chicago, 2015.