

BIOGRAPHICAL SKETCH

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NAME: Finley, Margaret A.

eRA COMMONS USER NAME (credential, e.g., agency login): FINLEYPI

POSITION TITLE: Associate Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Maryland College Park, MD	B.S.	1985	Kinesiological Science
University of Maryland School of Medicine, Baltimore, MD	B.S.	1987	Physical Therapy
University of Maryland College Park, MD	M.A.	1993	Biomechanics
University of Maryland, Baltimore, MD	Ph.D.	2003	Rehabilitation Science
Baltimore VAMC, RR&D	Post-doc (Associate Investigator)	2005	Rehabilitation Research

A. Personal Statement

My primary research interest is *secondary conditions in persons with chronic impairments, activity and participation limitations*. This research has strongly relied on biomechanical analyses of human dynamics in functional activities, translating scientific innovation into clinical practice. My research on secondary conditions focuses on upper extremity function with an emphasis on scapular mechanics as a contribution to movement patterns in individuals who use a manual wheelchair for community mobility as well as persons with chronic neuromuscular conditions such as stroke. I have worked in projects from the inception as pilot research through the completion of randomized clinical trials, developing expertise in research and biomechanical methods, impairment assessment as well as clinical trials applying therapeutic interventions. I have successfully collaborated among disciplines and produced peer-reviewed manuscript from each investigation. My long term objective is the identification of neuromusculoskeletal factors associated with development of shoulder pain, and the development of an approach that promotes early detection, intervention, and prevention of these factors.

1. Finley, MA, Rodgers, MM. The prevalence and identification of shoulder pathology in athletic and non-athletic wheelchair users with shoulder pain-a pilot study. (2004) *Journal of Rehabilitation Research and Development*, 41(3b), June, pp 395-402. PMID:15543457
2. Finley, MA, McQuade, KJ, Rodgers, MM. Scapular function during transfers in manual wheelchair users with and without shoulder impingement. (2004) *Clinical Biomechanics*, 20(1), 32-40. PMID:15567534
3. Finley, MA, Keyser, RE, Rasch, EK, Rodgers, MM. The biomechanics of wheelchair propulsion in individuals with upper extremity impairment. (2004) *Journal of Rehabilitation Research and Development*, 41(3b), June, pp 385-394. PMID:15543456
4. Conroy, S., Whittall, J., Dipietro, L, Jones-Lush, L; Zhan, M **Finley, MA**. Wittenberg, G.F., Krebs, H.I. Bever, CT. The effect of gravity on robot-assisted motor training after chronic stroke: a randomized trial. (2011), *Archives of Physical Medicine and Rehabilitation*. 2011 Nov;92(11):1754-61. Epub 2011 Aug 17. PMID:21849168

B. Positions and Honors

Positions and Employment

1987-1990	Staff Physical Therapist, Burch, Rhoads, & Loomis, Annapolis, MD
1990-1994	Senior Physical Therapist, Allsports Physical Therapy Center, Greenbelt, MD
1991-1995	Contract Physical Therapist, Meade Physical Therapy, Kimbrough Army Hospital, Fort Meade, MD
1994-1997	Director of Physical Therapy, Omni Physiotherapy Associates, Bowie, MD
1996-1997	Adjunct Faculty, UMSOM, Dept of Physical Therapy, Baltimore, MD
1997-1998	Consultant (Curriculum Development), George Washington University, Program in Physical Therapy, Washington, DC
1997-1998	Clinical Director of Sports Medicine, National Hospital Medical Center, Arlington, VA
1997-1998	Physical Therapist, Home Health, I.C.A.R.E., Alexandria, VA
1998-2003	Graduate Research Assistant/Teaching Assistant, UMSOM, Dept of Physical Therapy, Baltimore, MD
1998-1999	Director of Clinical Practice, Physical Therapy Associates, University Physicians, Inc, Baltimore, MD
1999-2001	Staff Therapist, Physical Therapy Associates, UM SOM, Dept of Physical Therapy, Baltimore, MD
2001-2002	Staff Therapist, BVAMC, Dept of Rehabilitation (Clinical Sharing Program UM-PTRS, BVAMC)
2002-2003	Pre-Doctoral Health Rehabilitation Research Fellow, BVAMC
2003-2005	Associate Investigator, BVAMC, Baltimore, MD
2003-2005	Assistant Professor (adjunct), UMSOM, Dept PTRS, Baltimore, MD
2005-2007	Assistant Professor, UMSOM, Dept of Physical Therapy, Baltimore, MD
2005-2007	Career Development Awardee, BVAMC, Baltimore, MD
2007-2014	Associate Professor (with tenure), Krannert School of Physical Therapy (KSPT), University of Indianapolis, Indianapolis, IN
2014-	Associate Professor, Drexel University, Physical Therapy and Rehabilitation Sciences, Philadelphia, PA

Other Experience and Professional Memberships

1987 - present	Member, American Physical Therapy Association (APTA) Orthopedic Section member (1990 – present) Sports Section member (1990 – present) Research Section member (1998 – present) Biomechanics Special Interest Group (2008-present) Neurology Section member (2012-present) Federal Physical Therapy Section Member (2004-2007)
1998 -	Member, American Society of Biomechanics (ASB)
1999 -	Member, International Society of Biomechanics (ISB)
2002 - present	Official of the National Wheelchair Basketball Association, Classifier
2004 -	<i>Ex Officio</i> , MDRavens Disability Awareness, Inc
2005 - 2007	Research & Development Committee, VAMC, Baltimore, MD
2010 - present	Abstract reviewer, American Society of Biomechanics Annual Conference
2010 – 2013	Vice Chair, Biomechanics Special Interest Group of the APTA
2010 – 2014	Institutional Review Board, University of Indianapolis, Committee member
2014 - present	Institutional Review Board, Drexel University, Committee member
2015 –present	NIH Center for Scientific Review, Nursing and Related Clinical Sciences (NRCS) Special Emphasis Panel (SEP)
2015- present	VAMC Rehabilitation Research & Development Small Projects in Rehabilitation Research (SPiRE) Grant Review Panel

Honors

1999	Foundation for Physical Therapy Doctoral Scholarship (PODS)
2004	Outstanding Adjunct Faculty, Master of Physical Therapy, Class of 2004
2011	Sarah Baskin Award for Excellence in Research, Co-author of 1st place clinician research category Rehabilitation Institute of Chicago

C. Contribution to Science

1. Upper extremity biomechanical assessment in individuals with chronic health conditions

My work has addressed biomechanical methods for assessing and comparing upper extremity impairment and limitations in individuals with chronic health conditions. These publications identified the altered biomechanical patterns seen in individuals with altered kinematics and kinetics including manual wheelchair users and individuals with stroke. I served as the primary or co-investigator on all of these research studies.

- a. Finley, MA, Lee, R. The effect of sitting trunk posture on 3-dimensional scapular kinematics. (2003) *Archives of Physical Medicine and Rehabilitation*, 84(4), 563-568. PMID:12690596
- b. Rodgers, MM, McQuade, KJ, Rasch, EK, Keyser, RE, Finley, MA. Upper extremity fatigue related to joint power shifts in experienced wheelchair users and non-wheelchair users. (2003), *Journal of Rehabilitation Research and Development*, 40(1), 27-38. PMID:15150718
- c. Rundquist, PJ, Dumit, M, Hartley, J, Schultz, K., Finley, MA. Three-dimensional shoulder complex kinematics in individuals with upper extremity impairment from chronic stroke. (2011), *Disability & Rehabilitation*. 2012;34(5):402-7. PMID:22351959
- d. Finley, M, Combs, S., Carnahan, K, Peacock, S, Van Buskirk, A. Comparison of "less affected limb" reaching kinematics in individuals with chronic stroke and healthy age-matched controls. (2012) *Physical and Occupational Therapy in Geriatrics*, 30(3), 245-259

2. Therapeutic intervention in individuals with chronic health conditions

In support of reducing impairment, activity and participation limitations in individual with chronic health conditions and residual secondary impairments I have investigated the application of therapeutic interventions. These clinical trials have utilized various exercise modalities to produce significant reductions in upper extremity impairments and improvements in activity and participation in individuals who use manual wheelchair and in person with chronic stroke. This body of work supports my goal to develop intervention to successfully reduce limitation in the population of individuals with secondary conditions associated with chronic health conditions.

- a. Keyser, RE, Rasch, EK, Finley, MA, MM, Rodgers, MM. Increased upper body endurance following a twelve-weeks home exercise for manual wheelchair users. (2003), *Journal of Rehabilitation Research and Development*, 40(6), 2003, 501-510. PMID:1507766
- b. Finley, MA, Rodgers, MM. Effect of two-speed manual wheelchair wheel on shoulder pain and function in manual wheelchair users.(2007) *Archives of Physical Medicine and Rehabilitation*, 18(12). 1622-1627. PMID:18047877
- c. Finley, MA, Fasoli, SE, DiPietro, L, Ohlhoff, MacClellan, L, Meister, C, Whittall, J, Macko, R, Bever, CT, Krebs, HI, Hogan. Short duration upper extremity robotic therapy in stroke patients with severe upper extremity motor impairment, (2005), *Journal of Rehabilitation Research and Development*, 42(5), September/October 683-92. PMID:16586194
- d. Combs, SA, Finley, MA, Henss, M, Himmler, SL., Lapota, KC, Stillwell, DE. Effects of a repetitive gaming intervention on upper extremity impairments and function in persons with chronic stroke: A case series. (2011), *Disability and Rehabilitation*, 34(15), 1291-1298. doi: 10.3109/09638288.2011.641660

3. Outcomes measures of secondary conditions in persons with chronic conditions

In support of the biomechanical approach in the study of secondary conditions in persons with chronic conditions I have evaluated the tools that have been utilized in these investigations. It is essential that clinical research understand the reliability and validity of our measures that we apply to a specific population. These publication represent work in determining reliability and accuracy of instrumentation and methods in my research.

- a. Finley, MA, Rodgers, MM, Rasch, EK, Keyser, RE, McQuade, KJ. Reliability of biomechanical variables during wheelchair ergometry. (2002) *Journal of Rehabilitation Research and Development*, 39(1), Jan/Feb, 73-82. PMID:11926329

- b. McQuade, KJ, Finley, MA, Harris-Love, M, Waller, S. Dynamic error analysis of ascension's flock of birds electromagnetic tracking device using a pendulum model. (2002), *Journal of Applied Biomechanics*, 18(2), 171-179.
- c. Finley, MA., Dipietro, L, Ohlhoff, J., Whitall, J., Krebs, HI, Bever, CT. The effect of repeated measurements using an upper extremity robot on healthy adults, (2009), *Journal of Applied Biomechanics*, 29 (2), 103-110. PMID:19483254

Complete List of Published Work in MyBibliography: <http://www.ncbi.nlm.nih.gov/sites/myncbi/1n7vnjAuF-jkk/bibliography/47998055/public/?sort=date&direction=ascending>

D. Research Support

Ongoing Research Support

Faculty seed grant Finley (PI) 05/01/15 – 4/30/16
 Drexel University, College of Nursing and Health Professions
 “Factors associated with shoulder pain in manual wheelchair users with spinal cord injury”
 The goal of this research is to identify physical impairments of the upper extremity that are associated with shoulder pain in manual wheelchair users with spinal cord injury.
 Role: PI

Completed Research Support

InQuery Collaborative Grant, funded by the Lilly Endowment, Inc. Finley (PI) 05/2013 - 05/2015
 The aim of the study was to comparison between the impaired and less impaired limb as well as the relationship of the activity to level of impairment.
 Role: PI

InQuery Collaborative Grant, funded by the Lilly Endowment, Inc. Finley (PI) 05/2013 - 05/2015
 The goals of this study were to examine gait biomechanics of a individuals with transfemoral amputations to determine the prevalence of characteristics commonly associated with secondary conditions such as osteoarthritis and back pain.

InQuery Collaborative Grant, funded by the Lilly Endowment, Inc. Finley (PI) 05/2012 - 05/2014
 This project aimed to investigate the use of a novel axial torque absorber on gait in persons with transfemoral amputations.

InQuery Collaborative Grant, Lilly Endowment, Inc Finley(PI) 05/2011 - 05/2012
 The goal of this project was to modify an existing gaming system based on results from a previous case series.

Merit Review Grant (competitive renewal), (PI: Bever, CT, Co-I, 5%effort) 03/2009 - 02/2012
 The purpose of this randomized clinical trial was to compare outcomes among different forms of robotic-assisted intervention in person with chronic stroke.

InQuery Collaborative Grant, Lilly Endowment, Inc. Finley (PI) 05/2010 - 12/2012
 This study investigated the effect of socket design on gait characteristics in person with transfemoral amputations