

## CURRICULUM VITAE

### BIOGRAPHICAL

**Name:** Jennifer S. Brach, PhD, PT

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### EDUCATION and TRAINING

**Undergraduate:**

1988-1992	East Carolina University Greenville, NC	BS, 1992	Physical Therapy
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**Graduate:**

1993-1994	University of Pittsburgh Pittsburgh, PA	MS, 1994	Physical Therapy
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1996-2000	University of Pittsburgh Pittsburgh, PA	PhD, 2000	Epidemiology
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**Postgraduate:**

2000-2001	University of Pittsburgh Pittsburgh, PA	Post-Doc Epidemiology Director: Anne B Newman, MD, MPH	
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### APPOINTMENTS and POSITIONS

**ACADEMIC:**

1993-1994	Department of Physical Therapy University of Pittsburgh, Pittsburgh, PA	Graduate Student Assistant
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1995-2001	Department of Physical Therapy University of Pittsburgh, Pittsburgh, PA	Adjunct Clinical Assistant Professor
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1998-2000	Department of Epidemiology University of Pittsburgh, Pittsburgh, PA	Research Assistant
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2000-2001	Department of Epidemiology University of Pittsburgh, Pittsburgh, PA	Post-Doctoral Fellow
2001-2004	Department of Physical Therapy University of Pittsburgh, Pittsburgh, PA	Visiting Assistant Professor
2004-2011	Department of Physical Therapy (primary) University of Pittsburgh, Pittsburgh, PA	Assistant Professor
2009-2011	Clinical and Translational Science Institute (secondary) University of Pittsburgh, Pittsburgh, PA	Assistant Professor
2011-present	Department of Physical Therapy (primary) University of Pittsburgh, Pittsburgh, PA	Associate Professor
2011-present	Clinical and Translational Science Institute (secondary) University of Pittsburgh, Pittsburgh, PA	Associate Professor
2015-present	Department of Epidemiology (secondary), University of Pittsburgh, Pittsburgh, PA	Associate Professor

**NON-ACADEMIC:**

1992-1993	Lancaster General Hospital Lancaster, PA	Staff Physical Therapist,
1995-1995	University of Pittsburgh Medical Center Pittsburgh, PA	Physical Therapist II
1995-1998	CORE Network, LLC, Pittsburgh, PA	PT IV (1995-1998) Team Leader Acute Medicine (1995-1996)

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**LICENSURE**

Physical Therapy Licensure

Pennsylvania State Board of Physical Therapy (#007857L)	1992-present
Board-certified physical therapy clinical specialist – Geriatrics	1998-2008

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## MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

American Physical Therapy Association APTA Sections on Research and Geriatrics	1992-present
Pennsylvania Physical Therapy Association	1992-present
American Geriatric Society	2007-2013

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## HONORS

Chattanooga Research Award, American Physical Therapy Association	1996
PODS I award, Foundation for Physical Therapy	1998 - 1999
Adopt-A-Doc Award, APTA Geriatric Section	1998, 1999 and 2000
Best Written Doctoral Dissertation, University of Pittsburgh, Dept. of Epidemiology	2000
Outstanding Doctoral Student, University of Pittsburgh, Dept. of Epidemiology	2000
Induction into Delta Omega National Honor Society for Schools of Public Health	2001
Geriatric Award of Excellence, PPTA, Geriatric SIG	2002
New Investigator Award, American Geriatric Society	2005
Excellence in Research Award, Section on Geriatrics, APTA	2008
Presidential Poster Award – Rehabilitation, American Geriatric Society	2009

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## PUBLICATIONS

### Refereed articles:

1. **Brach, JS** and VanSwearingen, JM. Measuring fatigue related to facial muscle function. *Archs Phys Med Rehab.* 1995; 76:905-908.
2. VanSwearingen, JM and **Brach, JS**. The Facial Disability Index: Reliability and validity of a disability assessment instrument for disorders of the facial neuromuscular system. *Phys Ther.* 1996;76:1288-1297.
3. **Brach, JS**, VanSwearingen, JM, Lenert, J and Johnson, PC. Facial neuromuscular retraining for oral synkinesis. *Annals Plastic Surgery.* 1997;99:1922-1931.
4. **Brach, JS**, VanSwearingen, JM, Delitto, A and Johnson, PC. Impairment and disability in individuals with facial neuromuscular dysfunction. *Otolaryngology, Head and Neck Surgery.* 1997;117:315-321.
5. VanSwearingen JM, **Brach JS**. Validation of a treatment-based classification system for individuals with facial neuromotor disorders. *Phys Ther.* 1998;78:678-689.

6. **Brach JS**, VanSwearingen JM. Physical therapy for facial paralysis: A tailored treatment approach. *Phys Ther*. 1999;79:397-404.
7. **Brach JS**, VanSwearingen JM. Not all facial paralysis is Bell's palsy: A case report. *Archs Phys Med Rehab*. 1999;80:857-859.
8. VanSwearingen JM, **Brach JS**. Making geriatric assessment work: Selecting useful measures. *Phys Ther* 2001;81:1233-1252.
9. **Brach JS**, Kriska AK, Newman AB, VanSwearingen JM. A new approach of measuring muscle impairment during a functional task: Quadriceps muscle activity recorded during chair stand. *J Gerontol Med Sci* 2001;56:M767-70.
10. Newman AB, **Brach JS**. The gender gap in morbidity and mortality. *Epidem Rev* 2001;23:343-350.
11. **Brach JS**, Berthold R, Craik R, VanSwearigen JM, Newman AB. Gait variability in community dwelling older adults. *J Am Geriatr Soc* 2001;49:1646-1650.
12. **Brach JS**, VanSwearingen JM, Newman AB, Kriska AM. Identifying early decline of physical function in community-dwelling older adults: Performance-based and self-report measures. *Phys Ther* 2002;82:320-328.
13. **Brach JS**, VanSwearingen JM. Physical impairment and disability: Relation to physical function in community-dwelling frail older men. *Phys Ther* 2002;82:752-761.
14. VanSwearingen JM, **Brach JS**. Changes in facial movement and synkinesis with facial neuromuscular reeducation. *Plastic Reconstr Surg* 2003;111:2370-2375.
15. King W, **Brach JS**, Belle S, Killingsworth R, Fenton M, FitzGerald S, Kriska A. Convenience of Locations is Associated with Walking in Elderly Women. *Amer J Hlth Promotion* 2003;18:74-82.
16. **Brach JS**, FitzGerald S, Newman AB, Kelsey S, Kuller L, VanSwearingen JM, Kriska AM. Physical activity and functional status in community-dwelling older women: A fourteen-year prospective study. *Archives Intern Med* 2003;24:2565-2571.
17. **Brach JS**, Simonsick EM, Kritchevsky S, Yaffe K, Newman AB, for the Health, Aging, and Body Composition Study Research Group. Lifestyle Activity and Exercise: The Association with Physical Function in the Health, Aging, and Body Composition (Health ABC) Study. *J Am Geriatr Soc* 2004;52:502-509.
18. **Brach JS**, VanSwearingen JM, FitzGerald SJ, Storti KL, Kriska AM. The Relationship Between Physical Activity, Obesity, and Physical Function in Community-Dwelling Older Women. *Preventive Medicine*. 2004;39:74-80.
19. Winters-Hart CS, **Brach JS**, Storti KL, Trauth J, Kriska AM. Validity of a Questionnaire to Assess Historical Physical Activity in Older Women. *Med Sci Sports Exer* 2004;36:2082-2087.
20. Colbert LH, Visser M, Simonsick EM, Tracey RP, Newman AB, Kritchevsky SB, Pahor M, Taaffe D, **Brach JS**, Cummings SR, Rubin S, Harris TB. Physical Activity, Exercise, and Inflammation in Older Adults: Findings from The Health, Aging, and Body Composition Study. *J Am Geriatr Soc* 2004;52:1098-1104.
21. Sayers SP, **Brach JS**, Newman AB, Heeren T, Guralnik JM, Fielding RA. Use of self-report and proxy-report to predict 400 meter walking ability in mobility limited older adults. *J Am Geriatr Soc* 2004;52:2099-2103.
22. Rosano C, Simonsick EM, Harris T, Kritchevsky S, **Brach J**, Visser M, Yaffe K, Newman AB. Association between physical and cognitive function in healthy elderly: The Health Aging, Body Composition study. *Neuroepidemiology* 2005;24:8-14.
23. Visser M, Simonsick EM, Colbert LH, **Brach JS**, Rubin SR, Kritchevsky SB, Newman AB, Harris TB. Type and Intensity of Activity and Risk of Mobility Limitation: The Mediating Role of Muscle Parameters. *J Amer Geriatric Soc* 2005;53:762-770.

24. Katsiaras A, Newman A, Kriska A, **Brach J**, Krishnaswami S, Feingold E, Kritchevsky S, Li R, Harris T, Schwartz A, Goodpaster B. Skeletal Muscle Fatigue, Strength and Quality in the Elderly: The Health ABC Study. *J Appl Physiol* 2005;99:210-216.
25. **Brach JS**, Berlin JE, VanSwearingen JM, Newman AB, Studenski SA. Too much or too little step width variability is associated with a fall history in older persons who walk at or near normal gait speed. *J Neuroengineering Rehabil.* 2005;2:21.
26. King WC, Belle SH, **Brach JS**, Simkin-Silverman LR, Soska T, Kriska AM. Objective measures of neighborhood environment and physical activity in older women. *Amer J Prev Med* 2005;28:461-9.
27. Cesari M, Kritchevsky SB, Pennix BWHJ, Nicklas BJ, Simonsick EM, Newman AB, Tylavsky FA, **Brach JS**, Satterfield S, Bauer DC, Visser M, Rubin SM, Harris TB, Pahor M. Prognostic Value of Usual Gait Speed in Well-Functioning Elders: Results from the Health, Aging and Body Composition (Health ABC) Study. *J Amer Geriatric Soc* 2005;53:1675-1680.
28. Storti KL, **Brach JS**, FitzGerald SJ, Zmuda JM, Rexroad AM, Cauley JA, Kriska AM. Physical Activity and Decreased Risk of Clinical Gallbladder Disease among Post-Menopausal Women. *Preventive Medicine* 2005;41:772-777.
29. Rosano C, **Brach J**, Longstreth Jr WT, Newman AB. Quantitative measures of gait characteristics indicate prevalence of underlying subclinical structural brain abnormalities in high-functioning older adults. *Neuroepidemiology* 2006;26:52-60.
30. Pettee KK, **Brach JS**, Kriska AM, Boudreau R, Richardson C, Colbert LH, Satterfield S, Visser M, Harris TB, Ayonayon HN, Newman AB. Influence of Marital Status on Physical Activity Levels Among Older Adults. *Med Sci Sports Exer* 2006;38:541-546.
31. Storti KL, **Brach JS**, FitzGerald SJ, Bunker CA, Kriska AM. Relationships Among Body Composition Measures in Post-Menopausal Women. *Obesity* 2006;14:244-251.
32. Newman AB, Simonsick EM, Naydeck BL, Kritchevsky SB, Nevitt M, Pahor M, Satterfield S, **Brach JS**, Studenski SA, Harris TB. Long Distance Corridor Walk Performance Predicts Mortality, Cardiovascular Disease and Functional Limitation – The Health, Aging and Body Composition (Health ABC) Study. *JAMA* 2006;295:2018-2026.
33. Thorpe RJ, Simonsick EM, **Brach JS**, Ayonayon H, Satterfield S, Harris TB, Garcia M, Kritchevsky SB. Dog Ownership, Walking Behavior, and Maintained Mobility in Late Life. *J Am Geriatr Soc* 2006;54:1419-1424.
34. Sayers SP, Newman AB, Guralnik JM, **Brach JS**, Fielding RA. Concordance and Discordance Between Two Measures of Lower Extremity Function: 400 meter Self-paced Walk and SPPB. *Aging Clin Exp Res* 2006;18:100-6.
35. Berlin JE, Storti KL, **Brach JS**. Using Activity Monitors to Measure Physical Activity in Free-Living Conditions. *Phy Ther* 2006;86:1137-1145.
36. **Brach JS**, Studenski SA, Perera S, VanSwearingen JM, Newman AB. Gait Variability and the Risk of Incident Mobility Disability in Community-dwelling Older Adults. *J Gerontol Med Sci* 2007;62A:983-988.
37. Kriska AM, **Brach JS**, Jarvis BJ, Everhart JE, Fabio A, Richardson CR, Howard BV. Physical Activity and Gallbladder Disease Determined by Ultrasonography. *Med Sci Sports Exer* 2007;39:1927-1932.
38. Koster A, Pennix BWJH, Newman AB, Vissor M, vanGool CH, Harris TB, vanEijk JT, Kempen GJMJ, **Brach JS**, Simonsick EM, Houston DK, Tylavsky FA, Rubin SM, Kritchevsky SB for the Health ABC study. Lifestyle Factors and Incident Mobility Limitation in Obese and Non-obese Older Adults. *Obesity* 2007;15:3122-3132.

39. **Brach JS**, Studenski SA, Perera S, VanSwearingen JM, Newman AB. Stance Time and Step Width Variability Have Unique Contributing Impairments in Older Persons. *Gait & Posture* 2008;27:431-439.
40. Storti KL, Pettee KK, **Brach JS**, Talkowski JB, Richardson CR, Kriska AM. Gait Speed and Step-Count Monitor Accuracy in Community Dwelling Older Adults. *Med. Sci. Sports Exerc.* 2008;40:59-64.
41. **Brach JS**, Solomon C, Naydeck BL, Sutton-Tyrrell K, Enright PL, Jenny NS, Chaves PM, Newman AB, for the Cardiovascular Health Study Research Group. Incident Disability and Peripheral Arterial Disease: The Role of Cardiovascular Disease. *J Am Geriatr Soc* 2008;56:1037-1044.
42. **Brach JS**, Kriska AM, Glynn NW, Newman AB. Physical Activity and the Older Adult: Measurement, Benefits and Risks Current Cardiovascular Risk Reports 2008; 2:305-310.
43. **Brach JS**, Talkowski JB, Strotmeyer ES, Newman AB. Diabetes Mellitus and Gait Dysfunction: Possible Explanatory Factors. *Phys Ther* 2008;88:1365-1374.
44. Huang WN, VanSwearingen J, **Brach J**. Gait Variability in Older Adults: Observational Rating Validated by Comparison to Computerized Walkway Gold Standard. *Phys Ther* 2008;88:1146-1153.
45. Talkowski JB, **Brach JS**, Studenski S, Newman AB. Impact of Health Perception, Balance Perception, Fall History, Balance Performance, and Gait Speed on Walking Activity in Older Adults. *Phys Ther* 2008;88:1474-1481.
46. **Brach JS**, Perera S, Studenski S, Newman AB. The Reliability and Validity of Measures of Gait Variability in Community-Dwelling Older Adults. *Arch Phys Med* 2008;89:2293-2296.
47. Schneider M, Erhard R, **Brach J**, Tellin W, Imbarlina F, Delitto A. Spinal Palpation For Lumbar Segmental Mobility and Pain Provocation: An Interexaminer Reliability Study. *Journal of Manipulative and Physiological Therapeutics* 2008;31:465-473
48. Longenberger A, Lim YL, Brooks MM, **Brach J**, Mertz K, Kingsley LA. Self-reported low physical function is associated with diabetes mellitus and insulin resistance in HIV-positive and HIV-negative men. *Future HIV Ther* 2008;2:539-549.
49. Cesari M, Kritchevsky SB, Newman AB, Simonsick EM, Harris TB, Penninx BW, **Brach JS**, Tylavsky FA, Satterfield S, Bauer DC, Rubin SM, Visser M, Pahor M, for the Health, Aging and Body Composition Study. Added Value of Physical Performance Measures in Predicting Adverse Health-Related Events: Results from the Health, Aging and Body Composition Study. *J Am Geriatr Soc* 2009;57:251-259.
50. Talkowski JB, Lenze EJ, Munin MC, Harrison C, **Brach JS**. Patient Participation and Physical Activity during Rehabilitation and Future Functional Outcomes in Patients following Hip Fracture. *Arch Phys Med* 2009;90:618-622.
51. Peterson MJ, Giuliani C, Morey MC, Pieper CF, Evenson KR, Mercer V, Cohen HJ, Visser M, **Brach JS**, Kritchevsky SB, Goodpaster BH, Rubin S, Satterfield S, Newman AB, Simonsick EM, Health, Aging and Body Composition Research Group. Physical activity as a preventative factor for frailty: the health, aging, and body composition study. *J Gerontol: Med Sci* 2009;64:61-68.
52. VanSwearingen JM, Perera S, **Brach JS**, Cham R, Rosano C, Studenski SA. A Randomized Trial of Two Forms of Therapeutic Activity to Improve Walking: Effect on the Energy Cost of Walking *J Gerontol: Med Sci*, 2009;64:1190-1198.
53. **Brach JS**, Perera S, Studenski S, Katz M, Hall C, Verghese J. Meaningful Change in Measures of Gait Variability in Older Adults. *Gait & Posture* 2010;31:175-179. PMID:PMC2818277
54. Hess RJ, **Brach JS**, Piva SR, VanSwearingen JM. Walking skill can be assessed in older adults: Validity of the Figure-of-8 Walk Test. *Phys Ther* 2010;90:89-99. PMID:PMC2802825

55. Wert DM, Talkowski JB, **Brach JS**, VanSwearingen JM. Characteristics of Walking, Activity, fear of Falling and Falls in Community Dwelling Older Adults by Residence. *J Geriatric Phys Ther*, 2010 Jan-Mar;33(1):41-5.
56. Wert DM, **Brach JS**, Perera S, VanSwearingen JM. Gait Biomechanics, Spatial and Temporal Characteristics and the Energy Cost of Walking in Older Adults with Impaired Mobility. *Phys Ther* 2010;90:977-985.PMID 20488977 PMID:PMC 2897132
57. Schneider MJ, **Brach J**, Irrgang JJ, Abbott KV, Wisniewski SR, Delitto A. Mechanical vs manual manipulation for low back pain: An observational cohort study. *J Manipulative Physiol Ther* 2010;33:193-200.
58. Peterson MJ, Morey MC, Giuliani C, Pieper CF, Evenson KR, Mercer V, Visser M, **Brach JS**, Kritchevsky SB, Goodpaster BH, Rubin S, Satterfield S, and Simonsick EM, for the Health, Aging and Body Composition Study Research Group. Walking in Old Age and Development of Metabolic Syndrome: the Health ABC study. *Metabolic Syndrome and Related Disorders*, 2011;8:317-322.
59. **Brach JS**, McGurl DJ, Wert D, VanSwearingen JM, Perera S, Cham R, Studenski SA. Validation of a measure of smoothness of walking. *Journals of Gerontology-Biological and Medical Sciences* 2011 Jan; 66(1): 136-141. PMID 20923910 PMID: PMC3032432
60. Studenski S, Perera S, Patel K, Rosano C, Faulkner K, Inzitari M, **Brach J**, Chandler J, Cawthon P, Conner EB, Nevitt M, Visser M, Kritchevsky S, Badinelli S, Harris T, Newman AB, Cauley J, Ferrucci L, Guralnik K. Gait Speed and Survival in Older Adults. *JAMA* 2011;305:50-58.
61. Hergenroeder A, Wert D, Hile E, Studenski S, **Brach JS**. The Association of Body Mass Index with Self-Report and Performance-Based Measures of Balance and Mobility. *Phys Ther* 2011;91:1223-1234.
62. **Brach JS**, Perera S, VanSwearingen JM, Hile E, Wert D, Studenski S. Challenging Gait Conditions Predict One-Year Decline in Gait Speed in Older Adults with Apparently Normal Gait. *Phys Ther* 2011;91:1857-1864 PMID 22003167 PMID:PMC 3229049
63. VanSwearingen JM, Perera S, **Brach JS**, Wert D, Studenski SA. Exercise to Improve Gait Efficiency: Impact on Activity and Participation in Older Adults with Mobility Limitations. *Phys Ther* 2011;91:1740-1751.PMID 22003158 PMID:PMC 3229041
64. Middleton LE, Manini TM, Simonsick EM, Harris TB, Barnes DE, Tylavsky F, **Brach JS**, Everhart JE, Yaffe K. Activity Energy Expenditure and Incident Cognitive Impairment in Older Adults. *Arch Int Med*. 2011;171:1251-1257.
65. Newell A, VanSwearingen JM, Hile E, **Brach JS**. The Modified Gait Efficacy Scale: Establishing the Psychometric Properties in Older Adults. *Phys Ther* 2012;92:318-328. PMID 22074940
66. Dunlap P, Perera S, VanSwearingen JM, Wert D, **Brach JS**. Transitioning to a Narrow Path: The Impact of Fear of Falling in Older Adults. *Gait & Posture* 2012;35:92-95.PMID: 21944475,PMCID: PMC3250559.
67. **Brach JS**, Wert D, VanSwearingen JM, Studenski SA, Newman AB. Use of Stance Time Variability for Predicting Mobility Disability in Community-Dwelling Older Persons: A Prospective Study. *J Geriatric Phys Ther* 2012;Feb 6 PMID 22314273.
68. Lowry KA, **Brach JS**, Nebes RD, Studenski SA, VanSwearingen JM. Contributions of cognitive function to straight- and curved-path walking in older adults. *Arch Phys Med Rehabil*. 2012 May;93(5):802-7.
69. Hile ES, **Brach JS**, Perera S, Wert DM, VanSwearingen JM, Studenski SA. Interpreting the need for initial support to perform tandem stance tests for balance. *Phys Ther*. 2012;92:1316-1328. PMID:3461133

70. Julius LM, **Brach JS**, Wert DM, VanSwearingen JM. Perceived effort of walking: Relationship with gait, physical function and activity, fear of falling, and confidence in walking in older adults with mobility limitations. *Phys Ther* 2012;92:1268-1277.
71. Bellanca JL, Lowry KA, VanSwearingen JM, **Brach JS**, Redfern MS. Harmonic ratios: A quantification of step to step symmetry. *J Biomechanics* 2013;46:828-831.
72. Lowry KA, VanSwearingen JM, Perera S, Studenski SA, **Brach JS**. Walking smoothness is associated with self-reported function after accounting for gait speed. *J Gerontol Med Sci* 2013;68(10):1286-90. PMID: 23689828
73. Sejdic E, Lowry KA, Roche J, Redfern M, **Brach JS**. A comprehensive assessment of gait accelerometry signals in time, frequency and time-frequency domains. *IEEE Trans Neural Syst Rehabil Eng.* 2013 Jun 6. PMID 23751971
74. Schaefer A, **Brach JS**, Perera S, Sejdic E. A comparative analysis of spectral exponent estimation techniques for  $1/f_{\beta}$  processes with applications to the analysis of stride interval time series. *J Neurosci Methods.* 2013;222C:118-130. PMID: 24200509
75. **Brach JS**, VanSwearingen JM, Perera S, Wert D, Studenski S. Motor Learning versus Standard Exercise in Older Adults with Subclinical Gait Dysfunction. *J Amer Geriatr Soc.* 2013;61:1879-1886. PMID:24219189, PMCID: PMC3827693
76. Hornyak V, **Brach JS**, Wert DM, Hile E, Studenski S, Vanswearingen JM. What is the relation between fear of falling and physical activity in older adults? *Arch Phys Med Rehabil.* 2013;94(12):2529-34.PMID: 23816923
77. **Brach JS** and VanSwearingen JM. Interventions to improve walking. *Curr Transl Geriatr and Exp Gerontol Rep.* 2013; 2(4). PMID 24319641
78. Wert DM, **Brach JS**, Perera S, VanSwearingen J. The Association between Energy Cost of Walking and Physical Function in Older Adults. *Arch Gerontol Geriatr.* 2013;57(2):198-203.
79. Rosso AL, Olson Hunt MJ, Yang M, **Brach JS**, Harris TB, Newman AB, Satterfield S, Studenski SA, Yaffe K, Aizenstein HJ, Rosano C; Health ABC study. Higher step length variability indicates lower gray matter integrity of selected regions in older adults. *Gait Posture.* 2014;40(1):225-30.PMID:24792638
80. Sustakoski A, Perera S, VanSwearingen JM, Studenski SA, **Brach JS**. The Impact of Testing Protocol on Recorded Gait Speed. *Gait & Posture Soc.* 2015;41(1):329-331.PMID:25468684
81. **Brach JS**, Lowry K, Perera S, Hornyak V, Wert D, Studenski SA, VanSwearingen JM. Improving motor control in walking: A randomized clinical trial in older adults with subclinical walking difficulty. *Arch Phys Med Rehabil.* 2015;96:388-394. PMID:25448244
82. Wert DM, VanSwearingen JM, Perera S, **Brach JS**. The test-retest reliability of metabolic measures of energy expenditure during overground walking in older adults with mobility limitations. *J Aging Phys Act.* 2015;23:346-51.PMID:25007982.
83. Almarwani M, Perera S, VanSwearingen JM, Sparto PJ, **Brach JS**. The test-retest reliability and minimal detectable change of spatial and temporal gait variability during usual over-ground walking for younger and older adults. *Gait & Posture.* 2016;44:94-99.
84. Lange-Maia BS, Strotmeyer ES, Harris TB, Glynn NW, Simonsick EM, **Brach JS**, CAuley JA, Richey PA, Schwartz AV, Newman AB. Physical Activity and Change in Long Distance Corridor Walk Performance in the Health, Aging and Body Composition Study. *J Amer Geriatr Soc.* 2015;63:1348-54. PMID:26096803
85. Sejdic E, Milllecamps A, Teoli J, Rothfuss MA, Franconi NG, Perera S, Jones AK, **Brach JS**, Mickle MH. Assessing interactions among multiple physiological systems during walking outside a

laboratory: An Android based gait monitor. *Comput Methods Programs Biomed.* 2015;122:450-61. PMID: 26390946.

86. Millecamps A, Lowry KA, **Brach JS**, Perera S, Redfern MS, Sejdić E. Understanding the effects of pre-processing on extracted signal features from gait accelerometry signals. *Comput Biol Med.* 2015 Jul;62:164-74. Epub 2015 Apr 4. PMID:25935124
87. **Brach JS**, Francois SJ, VanSwearingen JM, Gilmore S, Perera S, Studenski SA. Translation of a motor learning walking rehabilitation program into a group-based exercise program for community-dwelling older adults. *PMR* 2016;8520-8. PMID: 26493856
88. Wert DM, VanSwearingen J, Perera S, Studenski S, **Brach JS**. The impact of a portable metabolic measurement device on gait characteristics of older adults with mobility limitations. *J Geriatr Phys Ther.* 2016;39:77-82. PMID: 25973568
89. Sejdic E, Lowry KA, Bellanca J, Perera S, Redfern MS, **Brach JS**. Extraction of stride events from gait accelerometry during treadmill walking. *IEEE J Transl Eng Health Med* 2016;4. Epub 2015 Dec 18. PMID:27088063
90. Barone Gibbs B, **Brach JS**, Byard TD, Creasy SA, Davis KK, McCoy SM, Peluso A, Rogers RJ, Rupp KL, Jakicic JM. Reducing Sedentary Behavior vs. Increasing Moderate-to-Vigorous Intensity Physical Activity in Older Adults: a 12-Week Randomized, Clinical Trial. *Journal of Aging and Health* 2016 (In press) PMID:26944808
91. Welch SA, Ward RE, Kurlinski LA, Kiely DK, Goldstein R, VanSwearingen J, **Brach JS**, Bean JF. Straight and curved path walking among older adults in primary care: Association with fall-related outcomes. *PMR* 2016 (In press) PMID: 26733078
92. Almarwani M, VanSwearingen JM, Perera S, Sparto PJ, **Brach JS**. Challenging the motor control of walking: Gait variability during slower and faster pace walking conditions in younger and older adults. *Arch Gerontol Geriatr.* 2016 (In press) PMID: 27255348

#### **Invited Papers and Book Chapters:**

1. **Brach JS**, Rosano C, Studenski S. Mobility in Hazzard's Geriatric Medicine and Gerontology: Sixth Edition (Principles of Geriatrics and Gerontology) Halter, Ouslander, Tinetti, Studenski, High, Asthana, Hazzard eds McGraw Hill 6<sup>th</sup> ed 2009 chap 74.
2. **Brach JS**. Invited Commentary – Functional Gait Assessment in Community-Dwelling Older Adults. *Phys Ther.* 2010;90:774-775.
3. Hornyak V, VanSwearingen JM, **Brach JS**. Measurement of Gait Speed. *Topics in Geriatric Rehabilitation.* 2012;28:27-32.
4. Tinetti ME, **Brach JS**. Translating the fall prevention recommendations into a covered service: Can it be done, and who should do it? *Annals Internal Medicine.* 2012;157:213-214.
5. Francois SJ, **Brach JS**, Studenski S. Determining the Appropriate Use of Exercise for Older Adults in Current Diagnosis and Treatment: *Geriatrics* 2<sup>nd</sup> edition. McGraw-Hill Education 2014, chap 67.
6. **Brach JS**. Community-Based Exercise Programs for Older Adults in *Exercise for Aging Adults: A Guide for Practitioners: First Edition.* Sullivan GM and Pomidor AK editors. Springer 2015, chap 11.

#### **Published Abstracts:**

1. **Sokol J**, VanSwearingen JM. Measuring Fatigue Related to Facial Muscle Function. CPA-APTA

- Annual Conference meeting, Toronto, ON, June 1994.
2. **Brach JS**, VanSwearingen JM, Delitto A, Johnson PC . Impairment and Disability in Individuals with Facial Neuromuscular Dysfunction. APTA Combined Sections Meeting, Reno, NV, February 1995.
  3. Cooper T, McMahon B, Lenert J, Muller T, VanSwearingen JM, **Brach JS**, Kirchner C, Johnson PC. Cross Facial Nerve Grafting for Facial Animation: Effect on Normal Hemifacial Motion. Plastic Surgery Research Council, New York, May 1995.
  4. **Brach JS**, VanSwearingen JM, Johnson PC. Facial Neuromuscular Retraining for Oral Synkinesis. American Society for Peripheral Nerve meeting, Montreal, Quebec, October 1995.
  5. VanSwearingen JM, **Brach JS**. Neuropsychology of Facial Expressions and Implications for Facial Rehabilitation. North American Facial Therapists Study Group, Vancouver, B.C., May, 1996.
  6. **Brach JS**, VanSwearingen JM. Treatment-based Classification for Individuals with Facial Neuromuscular Dysfunction. North American Facial Therapy Study Group, Vancouver, B. C., May 1996
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103. Lowry K, Roche J, **Brach J**, Redfern M. Harmonic ratios: A measure of physiological asymmetry. *ISPGR and Gait & Mental Function 2011, Trondheim, Norway, June 2012*
104. Francois S, **Brach J**, Perera S, Studenski S. Standing and walking balance and daily physical activity in older adults. *ISPGR and Gait & Mental Function 2011, Trondheim, Norway, June 2012*
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106. Almarwani M, **Brach J**, Lowry K. The association between consistency of gait variability and executive function in older adults. *ISPGR and Gait & Mental Function 2011, Trondheim, Norway, June 2012.*
107. Wert D, VanSwearingen J, Perera S, **Brach J**. The influence of wearing a portable metabolic measurement system on gait of older adults. *ISPGR and Gait & Mental Function 2011, Trondheim, Norway, June 2012.*
108. Francois SJ, Studenski SA, **Brach JS**. Three, five, or seven days: how much is enough when measuring physical activity with an ActiGraph accelerometer in older adults. *Poster session*

presented at the International Conference on Ambulatory Monitoring of Physical Activity and Movement. June 2013 in Amherst, MA.

109. Brach JS, **Brach JS**, VanSwearingen JM, Perera S, Lowry K, Studenski SA. Improving Motor Skill in Walking: A Randomized Clinical Trial. APTA Combined Sections Meeting, San Diego, CA, January 2013.
110. Wert DM, VanSwearingen J, Perera S, **Brach J**. Consistency of Overground Gait Speed during Longer Bouts of Walking in Older Adults. APTA Combined Sections Meeting, San Diego CA, January 2013.
111. **Brach JS**, Francois S, VanSwearingen J, Studenski S. On the Move: Testing the Feasibility of a Group-based Motor Learning Exercise Program in Older Adults with Impaired Mobility. APTA Combined Sections Meeting 2014, Las Vegas, Nevada, February 2014.
112. Francois S, VanSwearingen J, Studenski SA, **Brach JS**. Translating a motor learning walking rehabilitation program into a group exercise program with feedback from the older adult participants. APTA Combined Sections Meeting 2014, Las Vegas, Nevada, February 2014.
113. **Brach JS**, Francois S, Perera S, VanSwearingen JM, Studenski SA. On the Move: Feasibility of a Group-based Motor Learning Exercise Program in Community-Dwelling Older Adults with Impaired Mobility. ISPGR, Vancouver, BC. June 2014.

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## PROFESSIONAL ACTIVITIES

### TEACHING:

Physical Therapy Curriculum, Entry-level Professional:

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|--------------|--|
| 1995 - 2000  | <b>Geriatric Physical Therapy Elective</b> (approximately 10-15 students, 1 credit course) primary responsibility for defining content, lecturer for various topics, identifying guest speakers, and evaluating students work. |
| 2000-2005    | <b>Survey of Human Disease I and II</b> (approximately 45 students, 2 credit courses) primary responsibility for defining content, lecturer for various topics, identifying guest speakers, and evaluating students work.      |
| 2001-2014    | <b>Geriatric Physical Therapy</b> (approximately 45 students, 2 credit course) primary responsibility for defining content, lecturer for various topics, identifying guest speakers, and evaluating students work.             |
| 2005-present | <b>Research Methods in Physical Therapy</b> (approximately 45-65 students, 2 credit course) primary responsibility for defining content, lecturer for various topics, and evaluating students work.                            |
| 2005-2008    | <b>Patient Management 2</b> (approximately 45-65 students, 2 credit course). Lecturer for osteoporosis content (~3 hours).   |

Other Health Science Curriculums:

2001-2005	Guest lecturer, Epidemiology of Aging, Department of Epidemiology, Graduate School of Public Health. Lecture topic: Measurement of Physical Function (approximately 20 students)
2001-present	Guest lecturer, Physical Activity Epidemiology, Department of Epidemiology, Graduate School of Public Health. Lecture topic: Measurement of Physical Function (approximately 20 students)
2008	Guest lecturer, CLRES 2530: New and Emerging Techniques in Research on Aging, Lecture: Measurement of Physical Activity
2003-2005	Guest lecturer, Tests and Measurements, Rehabilitation Science, School of Health and Rehabilitation Science, Lecture: Measuring Physical Function (approximately 60 students)
2007	PBL Session Facilitator, Basic Science of Care, School of Medicine (approximately 10 students)
2005-present	Evaluating faculty for Undergraduate Field Experience, Undergraduate program in Rehabilitation Sciences, School of Health and Rehabilitation Sciences. Meet with students, develop objectives for field experience, and grade student projects. (approximately 1-2 students per semester)

Summer Research Students (T32):

2008-present	Supervise and mentor DPT students during an 8 week long summer research experience. (1-2 students per summer)
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**Doctoral Dissertation Committee Chair**

1. Jaime Berlin Talkowski, PhD, PT, Doctoral student, Rehabilitation Science  
Primary Advisor, Chair Doctoral Committee, 2004-2008  
Project Title: "Using Accelerometry to Measure Physical Activity in Community Dwelling Older Adults: What is the Meaning Behind the Measure?"  
Dr. Talkowski defended her dissertation proposal in July 2008.
2. David Wert, MPT, Doctoral student, Rehabilitation Science  
Primary Advisor, Chair Doctoral Committee, 2006-present  
Project Title: "Energy Cost of gait in Older Adults"  
Dr. Wert defended his dissertation proposal in Fall 2011.
3. Maha Almarwani, MS, PT, Doctoral student, Rehabilitation Science  
Primary Advisor, Mrs. Almarwani started in the PhD program in August 2010.

**Doctoral Dissertation Committee Membership**

1. Wendy King, PhD student, Department of Epidemiology, Graduate School of Public Health.  
Dissertation Committee 2000-2004; Dr. Andrea Kriska, committee chair  
Project title: "The Relationship Between Neighborhood Environment and Physical Activity Levels of Older Women"  
Dr. King received her PhD in 2004 and is a Research Associate in the Department of Epidemiology at the University of Pittsburgh.

2. Wennie Huang, PhD student, School of Health and Rehabilitation Sciences  
Doctoral Committee 2003-2006; Dr. Jessie VanSwearingen, committee chair  
Project title: "Development and Validation of a Gait Classification system for Older Adults – By Movement Control and Biomechanical Factors"  
Dr. Huang received her PhD in 2006 and is an Assistant Professor in the Department of Physical Therapy, I-Shou University, Kaohsiung, Taiwan.
3. Vinay Mehta, PhD student, Department of Epidemiology, Graduate School of Public Health.  
Dissertation committee 2002- 2006; Dr. Kim Sutton-Tyrell committee chair  
Project title: "Inflammation is Associated with Subclinical Arthersclerosis"  
Dr. Mehta received his PhD in 2006.
4. Michael Schneider, PhD student, School of Health and Rehabilitation Sciences  
Doctoral Committee 2002-2008; Dr. Anthony Delitto, committee chair  
Project title: "Prospective cohort study of mechanical versus manual spinal manipulation methods for treatment of low back pain"  
Dr. Schneider received his PhD in 2008 and is Visiting Assistant Professor, Department of Physical Therapy, University of Pittsburgh.
5. Allison Logenberger, PhD student, Department of Epidemiology, Graduate School of Public Health.  
Dissertation committee 2005 - 2009; Dr. Lawrence Kingsley committee chair  
Project title: "Measures of physical function as risk factors for diabetes mellitus and insulin resistance among hiv-uninfected and hiv-infected men"  
Dr. Logenberger received her PhD in 2009 and is currently employed by the Centers for Disease Control.
6. Andrea Hoegenroder, PhD student, Department of Health and Physical Activity, School of Education.  
Dissertation committee 2006 - 2009; Dr. John Jakicic committee chair.  
Project title: "The influence of body mass index on self-report and performance-based measures of physical function in adult women"  
Dr. Hoegenroder received her PhD in 2009 and is currently an Instructor in the Department of Physical Therapy, University of Pittsburgh and Physical Therapy Coordinator, Clinical Education and Professional Development, Centers for Rehab Services.
7. Elizabeth Hile, PhD student, School of Health and Rehabilitation Sciences  
Doctoral Committee 2004-2010; Dr. Jessie VanSwearingen, committee chair  
Project title: "Measuring Perceived Change in Mobility and Balance in Older Adults: A Mixed-Methods Approach"  
Dr. Hile received her PhD in 2010 and will become a Pepper Scholar for the University of Pittsburgh Pepper Center.
8. April Chambers, PhD student, Department of Bioengineering, School of Engineering.  
Doctoral committee 2007 - 2011; Dr. Rakie Cham committee chair.  
Project title: "The Impact of Awareness and Experience on Gait Following Exposure to a Slip"  
Dr. Chambers defend her dissertation in 2011.

9. Tomoko Fujii, MD, PhD student, Department of Epidemiology, Graduate School of Public Health  
 Doctoral committee 2014-present; Dr. Boudreau committee chair  
 Project topic: Physical activity and Knee Osteoarthritis

10. Allyn Susko Bove, DPT, PhD student, Department of Physical Therapy, School of Health and  
 Rehabilitation Sciences.  
 Doctoral committee 2014-present; Dr. Fitzgerald committee chair  
 Project topic – Health disparities in rehabilitation for total knee replacement

**Master’s Thesis Committee membership**

1. Carena Winters, Master’s student, Department of Epidemiology, Graduate School of Public Health.  
 Thesis committee, 2000-2002, Dr. Andrea Kriska committee chair  
 Project title: “Validity of a Questionnaire to Assess Historical Physical Activity in Older Women”  
 Dr. Winters received her MPH in 2002.

2. Rebecca Search, Master’s student, Department of Epidemiology, Graduate School of Public Health.  
 Master’s essay reader 2009-2010, Dr. Catherine Haggerty was the advisor of this master’s essay.  
 Project title: “Physical Function and Depression Among Individuals Aged ≥65: Living Alone vs. Living  
 with Others”  
 Ms. Search received her MPH in 2010.

**RESEARCH:**

Grant number	Title	Role	Effort*	Years	Amount
<b>Current</b>					
CE-1304-6301 PCORI	On the Move: Optimizing Participation in group Exercise to Prevent Walking Difficulty in At-Risk Older Adults	PI	4.8	2013-2016	\$2,070,898
P30 AG024827-03	Claude D. Pepper Older Americans Independence Center	Co-Director Clinical Populations Outcomes Core	0.6	2014-2019	
R18 DK100933	Physical Activity and Sedentary Behavior Change: Impact of Lifestyle Intervention Effects for Diabetes Translation	Co-I	0.6	2015-2018	\$754,826
NIH-R01-045252	Task Specific Timing and Coordination Exercise to Improve Mobility in Older Adult	PI	3.6	2015-2020	\$2,475,234
<b>Prior</b>					

P30 AG024827-03	Claude D. Pepper Older Americans Independence Center	Co-Director Clinical Populations Outcomes Core	0.6	2009-2014	
NIH-K23 AG026766	Gait Variability: Epidemiology, Assessment & Management	PI	9	2005-2010	\$722,035
NSF 0931595	CPS: Medium: Collaborative Research: Monitoring Human performance with Wearable Accelerometers	Co-I	1	2009-2012	\$1,206,078
NIH-P30 AG024827	Variability, Stability and Smoothness of Walking	PI	Subsumed under K	2009-2010	\$30,000
NIH-R01 AG026010	Daily Individual and Marital Processes in OA	Co-I	.36	2007-2012	\$272,718
NIH-P30 AG024827	Developing a Measure of Smoothness	PI	Subsumed under K	2007-2008	\$36,812
NIH-P30 AG024827	Pepper Scholar	PI	9	2004-2005	\$967,719
NIH-R21 HD043202	The University of Pittsburgh Hip Fracture Study	Co-I	0.5	2002-2004	\$298,094
Foundation for Physical Therapy NIFTI	Identification of Factors Related to Physical Activity Behavior in Older Adults	PI	—	2001-2002	\$30,000
CMRF	Measuring surface EMG and gait characteristics in women with knee osteoarthritis	Co-I	—	2001-2002	\$25,000

\*Effort is in calendar months

### Seminars and Invited Lectureships:

1. "Movement Control and Aging" Marquette Challenge Seminar Series, Chicago IL, 11/2004
2. "Movement Control and Aging" Marquette Challenge Seminar Series, Pittsburgh, PA, 4/2005
3. "Mobility" Clinical Update in Geriatric Medicine, University of Pittsburgh, March 2006
4. "Research Methods", CHT Review Course, AGH, October 2006
5. "Gait Variability: Consequences, Contributors, and Management", North Western University Physical Therapy Grand Rounds, October 2007
6. "Gait Variability: Consequences, Contributors, and Management", Pennsylvania Physical Therapy Association, Geriatric SIG, October 2007

7. "Becoming a PT Researcher OR So I Finished my PhD: What do I do now?"; CSM, Nashville, TN, 2/2008
8. "The Business of Balancing Research, Service and Teaching: A Program for Junior Faculty"; CSM, Las Vegas, NV, 2/2009
9. "Impact of Diabetes on Populations Commonly Seen by Physical Therapists"; CSM, Las Vegas, NV, 2/2009
10. "Gait Variability: Contributors, Consequences & Management"; University of Florida Physical Therapy Grand Rounds, 10/2009.
11. "Evidence-Based Assessment and Management of Mobility Problems in Community-Dwelling Older Adults"; PPTA, Harrisburg, PA 11/2009
12. "The Road Less (or More) Traveled: The many paths to success in a research career"; CSM, San Diego, CA 2/2010
13. "Gait Variability – Incorporating Research Findings into Clinical Practice"; SWD Mini-CSM, Pittsburgh, PA 3/2010
14. "Gait Variability – Pearls and Precautions"; ISPGR and Gait & Mental Function Pre-Congress Workshop, Trondheim, Norway, June 2012.

**Other Research Related Activities:**

Editorial Board Member

Journal of Gerontology Medical Sciences – 2004-present

Manuscript Reviewer

Journal of Gerontology Medical Sciences - 2002 - present

Journal of the American Geriatric Society – 2002 - present

Medicine and Science in Sports and Exercise – 2001 - present

Physical Therapy – 2001 - present

Extramural grant reviewing

2009 Ad-hoc member of the Scientific Review Committee for the Foundation of Physical Therapy

12/2009 NIA Special Emphasis Panel "Recruitment and Screening for the Insight into the Determination of Exceptional Aging and Longevity (IDEAL) study

**SERVICE**

**COMMITTEES**

**National**

2001-present APTA Geriatric Section, Research committee

7/2007-8/2008 National Framework for Geriatric Home Care Practice, Center for Home Care Policy & Research, National Advisory Council member

8/2007-present Physical Activity Resource Center for Public Health, Executive Advisory Board

	member
1/2009	Foundation for Physical Therapy, wrote RFP entitled “Physical Therapy Exercise Interventions to Promote Mobility in Older Adults with Chronic Conditions”
2009	Ad-hoc member of the Scientific Review Committee for the Foundation of Physical Therapy
7/2009-6/2013	Awards Committee-Subcommittee on Publications, American Physical Therapy Association
2009-12/2009	AGS Mentoring program NIA Special Emphasis Panel “Recruitment and Screening for the Insight into the Determination of Exceptional Aging and Longevity (IDEAL) study
2013-present	Advancing Excellence in America’s Nursing Homes: Mobility work group

**Local**

**University Boards/Committees**

8/2003-present	University of Pittsburgh Institutional Review Board member
2004-2007	University Senate – Student Affairs Committee
2004-present	Pepper Junior Scholar Group - 2004-2007 (coordinator), 2007-present (mentor/consultant)
2005-present	SHRS Evidence-Based Practice Core Area (PhD program) committee

**CLINICAL**

**Benedum Geriatric Mobility Clinic – 2004 – 2013**

Participate in a multidisciplinary balance and mobility clinic for older adults. Evaluate older adults with mobility problems and make appropriate referrals and suggestions.