

BIOGRAPHICAL SKETCH

NAME: Edgar Ramos Vieira

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

POSITION TITLE: Associate Professor of Physical Therapy

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Department of Physical Therapy, Methodist University of Piracicaba, Piracicaba, SP, Brazil.	BSc	01/2000	Physical Therapy
Graduate Program in Physical Therapy, Federal University of Sao Carlos, Sao Carlos, SP, Brazil.	MSc	06/2002	Physical Therapy / Movement Analysis
Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, AB, Canada.	PhD	06/2007	Rehabilitation Science / Injury Prevention
International Institute for Qualitative Methodology, Edmonton, AB, Canada	Postdoc	04/2008	Qualitative & Mixed Methods Research
Faculty of Nursing, University of Alberta, Edmonton, AB, Canada	Postdoc	07/2010	Falls Prevention & Health Care Safety

A. Personal Statement

My expertise and experience is in the area of risk assessment and prevention of aging-related mobility impairments, frailty and falls. I have a BSs and an MSc degree in physical therapy, and a PhD in rehabilitation science. In my PhD, I studied patient transfer-related low back injuries in nurses. Subsequently, I did a post-doc in qualitative and mixed-methods in health research, followed by a post-doc evaluating mobility impairments and falls prevention in older adults. The overall goal of my research program is to help older adults to stay functionally independent by treating mobility impairments and preventing frailty, falls and related injuries. I have significant previous and ongoing experience in supervising the research of undergraduate (n=5), graduate students (DPT = 67, MSc=2, PhD=5), visiting professors (n=3), and post-docs (n=4). My students are often co-authors on my publications. I have completed several projects and published 87 peer-reviewed papers. My publications are impactful and were cited over 2000 times. In the last 5 years, I had 12 projects funded by agencies such as the Florida Department of Health, and the Administration for Community Living (ACL-HHS). During my studies, I found that mobility impairments, frailty and falls in older adults are strongly associated with functional decline, and are largely preventable using well-designed interventions including exercise. The following are 4 sample publications from my work during the last 2 years (students and post-docs underlined):

- Vieira, E. R.**, Tappen, R., Gropper, S., Severi, M. T., Engstrom, G., de Oliveira, M. R., Barbosa, A. C., & da Silva, R. A. (2017). Changes on walking during street crossing situations and on dorsiflexion strength of older Caribbean Americans after an exercise program: a pilot study. *Journal of Aging and Physical Activity*. 25(4), 525-532. DOI: [10.1123/japa.2016-0231](https://doi.org/10.1123/japa.2016-0231)
- Vieira, E. R.**, Palmer, R., & Chaves, P. (2016). Prevention of falls in older people living in the community. *BMJ*. 353: i1419. DOI: [10.1136/bmj.i1419](https://doi.org/10.1136/bmj.i1419).
- Palmer, R. C., Batra, A., Anderson, C., Page, T., **Vieira, E. R.**, & Seff, L. (2016). Implementation of an evidence-based exercise program for older adults in South Florida. *Journal of Aging Research*. 2016, Article ID 9630241, 7 pages. DOI: [10.1155/2016/9630241](https://doi.org/10.1155/2016/9630241).
- Vieira, E. R.**, Tappen, R., Engstrom, G., & da Costa, B. (2015). Rates and factors associated with falls in older European Americans, Afro-Caribbeans, African Americans, and Hispanics. *Clinical Interventions in Aging*. 10: 1705-1710. DOI: [10.2147/CIA.S91120](https://doi.org/10.2147/CIA.S91120).

B. Positions and Honors

- 2007-2008 Post-Doc Fellow, International Institute for Qualitative Methodology, Edmonton, AB, Canada.
- 2006-2009 Lecturer, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, AB, Canada.
- 2007-2010 Ergonomics Research Consultant, EWI Works International, Edmonton, AB, Canada.
- 2008-2010 Post-Doctoral Fellow, Faculty of Nursing, University of Alberta, Edmonton, AB, Canada.
- 2006-2014 Research Consultant, Alberta Health Services, Edmonton, AB, Canada.
- 2010-2016 Tenure-Track Assistant Professor, Department of Physical Therapy, Florida International University, Miami, FL.
- 2014-2016 Assistant Professor (secondary), Department of Neuroscience, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, USA.
- 2013-2017 Member - Safe Mobility for Life Coalition. Florida Department of Transportation.
- 2015-2017 Graduate Program Director, Doctor of Physical Therapy Program, Florida International University, Miami, FL, USA.
- 2013-present Member - Age-Friendly Initiative Steering Committee. Health Foundation of South Florida.
- 2014-present Member - Older Adult Falls Prevention Team. Florida Department of Health
- 2016-present Tenured Associate Professor, Department of Physical Therapy, Florida International University, Miami, FL.
- 2016-present Associate Professor (Secondary Appointment), Department of Neuroscience, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, USA.

C. Contribution to Science

My main contributions to science include the identification and assessment of factors associated with functional decline, mobility impairments and falls, and the development, implementation and testing of interventions to reduce mobility impairment and falls in older adults. These contributions and are described below:

Literature reviews of factors associated with mobility impairment and falls in older adults:

Knowing what factors are risks for mobility impairment and falls is important. Before conducting original studies, conducting literature reviews can provide information on what factors need to be assessed and considered in interventions, what has been done and tested already, and what are the current gaps in knowledge and research needs (4 sample reviews below).

1. **Vieira, E. R.**, Palmer, R., & Chaves, P. (2016). Prevention of falls in older people living in the community. *BMJ - British Medical Journal* (IF: 19.7, Ranking: 4 in general/internal medicine). 353: i1419. DOI: [10.1136/bmj.i1419](https://doi.org/10.1136/bmj.i1419).
2. **Vieira, E. R.**, Raue, P., & Brown, E. (2014). Depression in older adults: screening and referral. *Journal of Geriatric Physical Therapy*, 37(1), 24-30. DOI: [10.1519/JPT.0b013e31828df26f](https://doi.org/10.1519/JPT.0b013e31828df26f).
3. da Costa, B. R., Rutjes AW, Mendy, A., Freund-Heritage, R., & **Vieira, E. R.** (2012). Can falls risk prediction tools correctly identify fall-prone elderly rehabilitation inpatients? A systematic review and meta-analysis. *Public Library of Science - PLoS ONE*, 7(7), e41061. DOI: [10.1371/journal.pone.0041061](https://doi.org/10.1371/journal.pone.0041061).
4. **Vieira, E. R.**, Freund-Heritage, R., & da Costa, B. R. (2011). Risk factors for geriatric patient falls in rehabilitation hospital settings: A systematic review. *Clinical Rehabilitation*, 25(9), 788-799. DOI: [10.1177/0269215511400639](https://doi.org/10.1177/0269215511400639).

Development and testing of methods to assess mobility impairments in older adults:

Functional decline, mobility impairments such as gait and balance problems are associated with increasing frailty, falls and health care use. Sensitive and valid assessments are important for evidence-based interventions (sample of 4 recent publications bellow/continuing on next page).

1. **Vieira, E. R.**, Lim, H. H., Brunt, D., Hallal, C. Z., Kinsey, L., Errington, L., & Gonçalves, M. (2015). Temporo-spatial gait parameters during street crossing conditions: a comparison between younger and older adults. *Gait & Posture*, 41(2), 510-515. DOI: [10.1016/j.gaitpost.2014.12.001](https://doi.org/10.1016/j.gaitpost.2014.12.001).
2. Shigaki, L., **Vieira, E. R.**, Gil, A. W., Araujo, C. G., Camargo, M. Z., Sturion, L. A., Oliveira, M. R., da Silva Jr, R. (2017). Effects of holding an external load on the standing balance of older and younger

adults with and without chronic low back pain. *Journal of Manipulative and Physiological Therapeutics*. 40(4), 284-292. DOI: <http://dx.doi.org/10.1016/j.jmpt.2017.01.007>.

3. **da Silva Jr, R., Vieira, E. R.,** Cabrera, M., Altimari, L. R., Aguiar, A. F., Nowotny, A. H., Carvalho, A. F., **Oliveira, M. R.** (2015). Back muscle fatigue of younger and older adults with and without chronic low back pain using two protocols: a case-control study. *Journal of Electromyography and Kinesiology* (IF: 1.7, Ranking: 25 in rehabilitation). 25(6), 928-936. DOI: [10.1016/j.jelekin.2015.10.003](https://doi.org/10.1016/j.jelekin.2015.10.003).
4. Purcell, S., Thornberry, R., Elliott, S. A., Panton, L., Ormsbee, M. J., **Vieira, E. R.,** Kim, J-S., Prado, C. M. (2016). Body composition, strength, and dietary intake of patients with hip or knee osteoarthritis. *Canadian Journal of Dietetic Practice and Research*. 77(2), 98-102. DOI: [10.3148/cjdr-2015-037](https://doi.org/10.3148/cjdr-2015-037).

Identification of factors associated with mobility impairment and falls in older adults:

Knowing the risk factors for mobility impairment and falls among older adults is crucial to design and assess the effects of preventive interventions (sample of 4 recent publications below).

1. **Vieira, E. R.,** Vaccaro, J., Zarini, G. G., & Huffman, F. G. (2017). Health indicators of U.S. older adults who received or did not receive meals funded by the Older Americans Act. *Journal of Aging Research*. 2017, Article ID 2160819, 8 pages. DOI: [10.1155/2017/2160819](https://doi.org/10.1155/2017/2160819).
2. Pereira, C., **da Silva, R. A., de Oliveira, M. R.,** Souza, R. D. N., Borges, R. J., & **Vieira, E. R.** (2017). Effect of body mass index and fat mass on balance force platform measurements during a one-legged stance in older adults. *Aging Clinical and Experimental Research*. Online ahead of print. DOI: [10.1007/s40520-017-0796-6](https://doi.org/10.1007/s40520-017-0796-6).
3. **Vieira, E. R.,** Mendy, A., Prado, C. M., Gasana, J., & Albatineh, A. N. (2015). Falls, physical limitations, confusion and memory problems in people with type II diabetes, undiagnosed diabetes and prediabetes, and the influence of vitamins A, D and E. *Journal of Diabetes and Its Complications*. 29(8), 1159-1164. DOI: [10.1016/j.jdiacomp.2015.08.005](https://doi.org/10.1016/j.jdiacomp.2015.08.005).
4. **Vieira, E. R.,** Tappen, R., Engstrom, G., & da Costa, B. (2015). Rates and factors associated with falls in older European Americans, Afro-Caribbeans, African Americans, and Hispanics. *Clinical Interventions in Aging*. 10, 1705-1710. DOI: [10.2147/CIA.S91120](https://doi.org/10.2147/CIA.S91120).

Development, implementation and testing of interventions to reduce mobility impairment and falls in older adults:

The previous contributions and descriptions clearly lead to actual interventions to reduce mobility impairment and falls among older adults. The population of older adults (age 65 and older) increased from 48 to 63 million (31%) between 2003 and 2013. By 2030, the older adult population is projected to further increase by 50% for Whites, 99% for African-Americans, 104% for American Indians and Native Alaskans, 121% for Asians, and 153% for Hispanics (United States Department of Health and Human Services, 2014). Functional decline lead to mobility issues and falls. People with mobility impairment and history of fall have decreased strength, gait alterations and poorer balance. Interventions to decelerate aging-related functional decline and reduce falls are of great public health importance (sample of 4 recent publications below).

1. **Vieira, E. R.,** Tappen, R., Gropper, S., Severi, M. T., Engstrom, G., de Oliveira, M. R., Barbosa, A. C., & da Silva, R. A. (2017). Changes on walking during street crossing situations and on dorsiflexion strength of older Caribbean Americans after an exercise program: a pilot study. *Journal of Aging and Physical Activity*. 25(4), 525-532. DOI: [10.1123/japa.2016-0231](https://doi.org/10.1123/japa.2016-0231).
2. Palmer, R. C., Batra, A., Anderson, C., Page, T., **Vieira, E. R.,** & Seff, L. (2016). Implementation of an evidence-based exercise program for older adults in South Florida. *Journal of Aging Research* (IF: 1.0). 2016, Article ID 9630241, 7 pages. DOI: [10.1155/2016/9630241](https://doi.org/10.1155/2016/9630241).
3. **Vieira, E. R.,** O'Rourke, H. M., Hunter, K., & Marck, P. B. (2014). Using video-elicitation to assess risks and potential falls reduction strategies in long term care. *Disability and Rehabilitation*, 36(10), 855-864. DOI: [10.3109/09638288.2013.821183](https://doi.org/10.3109/09638288.2013.821183).
4. **Vieira, E. R.,** Guerrero, G., Holt, D., Arreaza, M., & Brunt, D. (2014). Limits of stability and the adaptations of wearing rocker bottom shoes. *Foot & Ankle International*, 35(6), 607-611. DOI: [10.1177/1071100714531227](https://doi.org/10.1177/1071100714531227).

A Complete List of My Published Work is available at:

https://scholar.google.com/citations?hl=en&user=N80IXFQAAAAJ&view_op=list_works&sortby=pubdate

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support:

Baptist Health of South Florida Neuroscience Center. \$42,000.00 for research equipment for the rehabilitation department (GaitRITE, Balance Master, dynamometers, and ankle weights), and in-kind physical therapy and research staff time.

Vieira, E. R., Gonzales-Arias, S., Starosciak, A. K. (2016-2018).

Falls Prevention Following Discharge

The goal of this project is to improve physical health and functional capacity and reduce falls and re-hospitalization of older adults hospitalized due to a fall-related injury. This is a multi-phase project with Baptist Health South Florida to develop, implement and evaluate falls prevention programs post-discharge, and in primary care. The objectives of this first phase study are to: 1) Evaluate feasibility of implementing the Otago Exercise Program for falls prevention after discharge due to fall-related injuries, and 2) Assess effect of the program on gait, strength and balance as well as subsequent falls and re-hospitalizations.

FIU College of Architecture + The Arts Interdisciplinary Research Initiative Seed Grant.

D'Souza, N. (PI), **Vieira, E. R.** (Co-I), Ozer, E. (Co-I), Martinez, I (Co-I) (2017-2018).

An Underline for the Underserved: Exploring Simulation Research for Sustainable Aging in Place around Miami's Metrorail

The purpose of this project is to measure functional, behavioral, and environmental attributes of active living among Miami's elderly population and provide evidence-based solutions for aging in place. Using field and lab-based simulation the project will serve the low-income, inner city, elderly minority community to effect healthy lifestyles. The project will be implemented under Miami's Metrorail (the Underline); our goal is to integrate rehabilitative and physical environment interventions that lead to elder-friendly design. Our team consists of a multidisciplinary group of research faculty from interior and landscape architecture, physical therapy and medicine. We will measure mobility, environment-behavioral factors such as physical/visual accessibility, and psychophysiological factors such relaxation and motivation. The project will impact government, businesses, educators, health care communities and everyone who has a role in creating a healthier city.

Sample of Four Previously Funded Research Projects:

- 1. Department of Health and Human Services, Administration for Community Living, and South Florida Health Foundation*
Pelaez, M. (Project Director), **Vieira, E. R.** (Director of Research/FIU-PI) (2014-2016)
Preventing Falls through a Statewide Sustainable Network
In this project we increased the availability of evidence-based falls prevention programs for older adults living in Florida.
- 2. Florida Department of Health—Chronic Disease Prevention*
Vieira, E. R. (Co-PI), Martinez, I. (Co-PI) (2014-2015).
Assessing Social and Physical Health of Older Hispanics in South Florida
In this project we assessed physical and social aspects of the health of older Hispanics in South Florida.
- 3. Florida Department of Transportation*
Vieira, E. R. (Co-PI), McCarthy, D. (Co-PI) (2011-2014)
Safe Steps Educational Program Analysis
In this project we educated older pedestrians about proper behaviors to reduce the risk of accidents and falls.
- 4. Alberta Health Services, Canada*
Vieira, E. R. (PI), Berean, C. (Co-I), Paches, D. (Co-I) (2008-2014)
Falls Prevention in Geriatric Rehabilitation
In this project we significantly reduced the rates of falls among geriatric rehabilitation patients in a rehabilitation hospital.