

Citlali López-Ortiz, MA, PhD

Citizenship: USA

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OBJECTIVE:

An academic career to develop my research, teaching, and service interests in dance ,biomechanics, motor control, motor coordination, and motor learning, in health, and physical rehabilitation.

CURRENT EMPLOYMENT:

Assistant Professor – Tenure Track. Department of Kinesiology and Community Health. University of Illinois at Urbana-Champaign

CURRENT AFFILIATIONS:

Adjunct Assistant Professor, Feinberg School of Medicine, Northwestern University, Department of Physical Medicine and Rehabilitation.

Adjunct Faculty, Joffrey Ballet Academy, The Official School of the Joffrey Ballet, Chicago, Illinois.

Director, First Position Dance and Movement Technology LLC Champaign, Illinois.

EDUCATION:

Ph.D. Kinesiology. University of Wisconsin-Madison, 2001. Emphasis in biomechanics. G.P.A. 3.74/4.0. Dissertation: Emergent linearity of the foot force paths in kinematically constrained motion of the lower limb. Advisor Associate Professor Kreg G. Gruben, Ph.D. Awarded the Virginia Horne Henry Wisconsin Distinguished Graduate Fellowship, the Vilas Professional Development Award and two consecutive the Marie L. Carns Fellowships.

M.A. Dance. State University of New York at Brockport, 1995. Emphasis in biomechanics. G.P.A. 3.92/4.00. Thesis: Kinematic trend of *pirouette* performances as a function of skill level. Recipient of the Pylyshenko-Strasser Graduate Dance Award. Advisor Professor Nat Goodhart, Ph.D.

B.S. Honors (Licentiate) Physics. National Autonomous University of Mexico, 1991. Grade average: 9.88/10.00; second place in the Class of 1991. Thesis: Computer program for the automatic design of achromatic doublets. Advisor Professor Rufino Díaz-Urbe, Ph.D.

TRAINING:

Post-doctoral Fellow. NIH/NRSA Individual Fellowship F-32, Northwestern University, Rehabilitation Institute of Chicago-Sensory Motor Performance Program 2007-2008.

Post-doctoral Fellow. NIH/NRSA Institutional Fellowship T-32, Northwestern University, Rehabilitation Institute of Chicago-Sensory Motor Performance Program 2005-2007.

LICENSURE/CERTIFICATION:

Classical Ballet Teacher Certification Cuban Methodology. Ballet Academy of Coyoacán, in association with Ballet National de Cuba. Mexico, 1990 Mentor: Ana del Castillo, ATC, Royal Academy of Dancing, under the supervision of Fernando Alonso and Ramona de Saa National Ballet of Cuba.

ACADEMIC APPOINTMENTS:

Faculty, Joffrey Ballet Academy, The Official School of the Joffrey Ballet, 2012-2015.

Dance for Movement Rehabilitation Instructor for children with cerebral palsy and adults with Parkinson's disease First Position Dance and Movement Technology LLC, Chicago Illinois. 2009-Present (On leave)

Research Assistant Professor, Department of Physical Medicine and Rehabilitation, Feinberg School of Medicine, Northwestern University, 2012- 2013

Research Scientist. Sensory Motor Performance Program. Rehabilitation Institute of Chicago. 2010 - 2013

Adjunct Assistant Professor 2008-2012. Department of Physical Medicine and Rehabilitation, Feinberg School of Medicine, Northwestern University.

Visiting Artist, Rubin Award Department of Dance Movement Therapy 2010. Columbia College, Chicago.

Dance for Rehabilitation Instructor 2009-2011 Instructor for children with cerebral palsy and adults with Parkinson's disease. Rehabilitation Institute of Chicago/ Northwestern University Parkinson's Disease and Movement Disorders Center, Chicago Illinois.

Classical Ballet for Movement Rehabilitation Instructor 2009. Instructor for children with cerebral palsy. Pathways Center for Children, Glencoe Illinois.

Clinical Assistant Professor 2008-2010 Governors State University, Illinois

NRSA Post-Doctoral Fellow. 2005-2008. Northwestern University/Rehabilitation Institute of Chicago.

Research Assistant/ Research Fellow 1997-2001. Biomechanics Laboratory, Dept. of Kinesiology at the University of Wisconsin-Madison.

Teaching Assistant 1996-1997. Biomechanics Laboratory, Dept. of Kinesiology at the University of Wisconsin-Madison.

Lecturer, Classical Ballet 1995-1996. National Technical Institute for the Deaf, at the Rochester Institute of Technology.

Classical Ballet Trainer 1994-1995. Gymnastics Training Center, Rochester, NY.

Instructor, Introduction to Dance, 1993. Fieldwork. Dance Department, State University of New York College at Brockport.

Instructional Support Assistant 1992. Foreign Languages Department, State University of New York College at Brockport.

Research and Teaching Assistant 1989-1991. Institute of Astronomy, Center for Instrumentation, and Faculty of Sciences, at the National Autonomous University of Mexico.

Real and Vector Calculus Workshop Instructor 1988-1990. School of Engineering, Panamerican University, Mexico.

Classical Ballet Dancer 1985. Swan Lake Performances, National Company of Dance, Mexico City, Mexico.

Classical Ballet Instructor, Curriculum, and Faculty Supervisor 1981-1991.
Ballet Academy of Coyoacán, founded and directed by Ana Castillo, Mexico. Instrumental in the coaching of pre-professional ballet students that have won international ballet competitions.

GRANT AWARDS:

Canter for Health, Aging and Disability-UIUC

Lopez-Ortiz(PI) 09/01/2015-03/30/2017

Movement rehabilitation for dystonic cerebral palsy using classical ballet and robotic haptic feedback in virtual reality.

This project is a pilot investigation on training selective motor control of the upper limbs in children with dystonic cerebral palsy using robotics assistance and low dimensional feedback in virtual reality. Award \$20,000

Campus Research Board-UIUC Lopez-Ortiz(PI) 08/30/2015-02/28/2017

Training isometric force matching tasks in classical ballet postures in children with dystonic cerebral palsy

This project is a pilot investigation on training selective motor control of the lower limbs in children with dystonic cerebral palsy. Award \$24,902.

National Multiple Sclerosis Society

Lopez-Ortiz (PI) 04/01/2015-03/31/2016

Targeted dance program for improved mobility in multiple sclerosis

This project is a pilot investigation on the feasibility, safety, and efficacy of a targeted ballet based dance class for adults with MS who have problems with mobility and coordination as compared to the NMSS exercise guidelines. Award \$42,849.40

Lavin Pediatric Research Gaebler-Spira (PI) 06/21/2010-12/14/2013

Dance Rehabilitation Research in Cerebral Palsy

The goal of this project is to conduct experiments in dance for physical rehabilitation for children with cerebral palsy. Endowment \$1,000,000. Award: \$140,000

Physician Engagement Community Grants Initiative, Northwestern Memorial Hospital, Rehabilitation Institute of Chicago

Lopez-Ortiz (Co-PI) 08/15/2012-08/14/2013

A structured dance program for children with disabilities in a Chicago Public School

The goal of this project is to provide an innovative physical activity, as a structured dance program in a community school setting for children with disability to improve all aspects of the International Classification of Function of the World Health Organization. Award: \$7,261

Pilot Research Grant Lopez-Ortiz (PI) 12/01/2010-11/30/2012

Cerebral Palsy International Research Foundation

Dance for children with cerebral palsy

The goal of this study is to investigate improvements of range of motion and upper limb coordination in children with CP. Award: \$100,000

**Research Grant
Coleman Foundation**

O'Shea (PI)

09/01/2008-08/31/2009

The goal of this project was to assess the effect of moving to external auditory rhythmic stimulation in children with cerebral palsy. Award \$48,000

NIH-1F32HD055013-01A1

Lopez-Ortiz (PI)

04/25/2007-04/24/2008

Unintended muscle activity influences on post-stroke locomotion.

The goal of this project was to characterize the unintended muscle activity in the inactive paretic limb of post-stroke individuals during locomotor activity. Award: \$52,000

NIH-T32HD07418

Rymer (PI)

04/24/2005-04/24/2007

Pathophysiology and Rehabilitation of Neural Dysfunction

The goal of this project was to characterize the unintended muscle activity in the inactive paretic limb of post-stroke individuals during locomotor activity. Award: \$82,000

PUBLICATIONS:

Peer Reviewed Articles

1. **López-Ortiz, C.**, Eagan, T., Gaebler-Spira, D. Pilot study of a targeted dance class for physical rehabilitation in cerebral palsy (Submitted).
2. **López-Ortiz, C.** (2013) Sound and Rehabilitation Robotics for Pediatric Cerebral Palsy. Converging Clinical and Engineering Research on Neurorehabilitation, Biosystems and Robotics 2:31-315.
3. **López-Ortiz, C.**, Simkowski J., Gomez, W, Stoykov, N., Gaebler-Spira, D. (2013) Motor Learning in Children with Cerebral Palsy with Feedback of Principal Component Space of Reduced Dimension. Converging Clinical and Engineering Research on Neurorehabilitation, Biosystems and Robotics 1: 311-315.
4. **López-Ortiz C**, Warnick, J, Gomez W, Doshi K, Simkowsky J, Reese M, Gaebler-Spira D. 2012 A pilot study using virtual reality and statistics of dance postures to enhance balance and dissociation of movements in children with cerebral palsy. Developmental Medicine and Child Neurology: 54 S6: 41-42
5. **López-Ortiz, C.**, Gladden, K., Deon, L., Schmidt, J., Girolami, G. and Gaebler-Spira, D. (2012). Dance program for physical rehabilitation and participation in children with cerebral palsy, Arts & Health 4(1.): 39-54. First published on: 13 June 2011 (iFirst).
6. Alibigalou, L., **López-Ortiz, C.**, Brown D. A., (2009). Phase dependence of lower limb muscle activity in locomotion after stroke Journal of Neurophysiology Nov; 102(5): 2856-65. Epub 2009 Sep 9.

7. Gruben K. G., **López-Ortiz, C.**, and Schmidt, M. W. (2003). The control of foot force during pushing efforts against a moving pedal. Experimental Brain Research, 148:50-61.
8. Gruben, K.G., **López-Ortiz, C.**, and C. Giachetti, R. S. (2003). Muscular and postural components of lower limb forces during quasi-static extension efforts. Journal of Applied Biomechanics, 19:239-245
9. Schmidt, M.W., **López-Ortiz, C.**, Barrett, P. S., Rogers. L. M., Gruben, K. G. (2003). Foot force direction in an isometric moving task. Experimental Brain Research, 150:245-254.
10. Gruben, K. and **López-Ortiz, C.** (2000) Characteristics of the force applied to a pedal during human pushing efforts. Journal of Motor Behavior, 32:151-162.

Peer Reviewed Abstracts:

11. **López-Ortiz, C.**, Eagan, T., Gaebler-Spira, D. Balance control is improved in children with cerebral palsy through classical ballet based instruction. Society for Neuroscience Program 45th Annual Meeting, 2015.
12. **López-Ortiz C**, Kaspi E, Gaebler-Spira D. Pilot study: Training an isometric torque-matching task in classical ballet postures in children with cerebral palsy. XII Summer School in Motor Control, 2015.
13. **López-Ortiz C**, Simkowski JM, Doshi K, Gomez W, Gaebler-Spira DJ Virtual reality remapping for motor learning in cerebral palsy. Chittenden Symposium University of Illinois at Urbana-Champaign, 2015.
14. **López-Ortiz C** Simkowski J, Gomez W, Doshi K, Stoykov S, Warnick J, Gaebler-Spira D. Motor learning via low dimension remapping as a marker for spasticity and dystonia in cerebral palsy. Society for Neuroscience Program 43rd Annual Meeting, 2013.
15. **Albert MV**, Gomez W, Miskovic A, López-Ortiz C. Mobility in Parkinson's disease is improved through classical ballet based instruction. Society for Neuroscience Program 43rd Annual Meeting, 2013.
16. **López-Ortiz C**, Gomez W, Miskovic A, Toledo S, Albert MV. Targeted classical ballet instruction improves mobility in Parkinson's disease. John and Gwen Smart Conference-Buehler Center of Aging, Health, and Society, Northwestern University 2013.
17. **López-Ortiz C**, Simkowski JM, Doshi K, Gomez W, Warnick, J, Gaebler-Spira DJ Motor learning in virtual reality as a marker for spasticity and dystonia. American Academy for Cerebral Palsy and Developmental Medicine, 67th Annual Meeting 2013.
18. **López-Ortiz C**, Egan T, Gaebler-Spira, DJ Structured Dance Class for Cerebral Palsy After School. American Academy for Cerebral Palsy and Developmental Medicine, 67th Annual Meeting 2013.
19. **López-Ortiz C**, Doshi K, Simkowski JMS, Gaebler-Spira, DJ Motor learning of classical ballet with feedback of reduced dimension in children with cerebral palsy. Progress in Motor Control IX, 2013.

20. **López-Ortiz C**, Simkowski J, Gomez W, Doshi K, Stoykov S, Warnick J, Gaebler-Spira D. Motor learning with low dimensional remapping in virtual reality for children with cerebral palsy. Society for Neuroscience Program 42th Annual Meeting, 2012.
21. Doshi KR, **López-Ortiz C**, Gomez W, Stoykov, NS, Simkowski J, Warnick J, Roth EJ, Gaebler-Spira DJ. Characterization of the principal component space in normally developing children performing canonical ballet sequences to train selective motor control in cerebral palsy. Association of Academic Physiatrists Annual Meeting 2012.
22. **López-Ortiz, C**. Dance for physical rehabilitation and participation in children with cerebral palsy and adults with Parkinson's disease. (2011) Dance Kinesiology Teachers' Group Mini-Conference Sharing teaching tools and practices in Dance Science and Somatics. National Dance Education Organization. State University of New York College at Brockport, Brockport, NY. June, 2011
23. **López-Ortiz C**, Wong, L. Gaebler-Spira D. Music in classical ballet for pediatric cerebral palsy. American Academy for Cerebral Palsy and Developmental Medicine, 65th Annual Meeting 2011.
24. **Lopez-Ortiz C**. Dance for motor learning in children with cerebral palsy using principal component analysis. European Academy of Childhood Disability, 23rd Annual Meeting 2011.
25. **López-Ortiz C**, Gaebler-Spira D, Deon L, Suresh M, Kasmer M, Troy M. Dance for motor learning in children with cerebral palsy. Society for Neuroscience Program 40th Annual Meeting, 2010.
26. **López-Ortiz C**, Gladden K, Deon L, Gaebler-Spira D. Dance for Children with cerebral palsy. American Academy for Cerebral Palsy and Developmental Medicine, 64th Annual Meeting 2010.
27. **López-Ortiz C**. Dance and movement trajectory formation in children with cerebral palsy. Claiming Creativity Conference Proceedings. Art Education in Cultural Transition. Chicago, IL, 2010.
28. **López-Ortiz C**, O'Shea, R, Mussa-Ivaldi, F., Gaebler-Spira D. Music and movement trajectory formation in children with cerebral palsy. Society for Neuroscience Program 39th Annual Meeting, 2009.
29. **López-Ortiz C**, Gladden K, Kasmer M, Schmidt J, Girolami G, Campbell S, Gaebler-Spira D. Dance for Children with cerebral palsy: an adjunct to therapy. American Academy for Cerebral Palsy and Developmental Medicine, 63rd Annual Meeting 2009.
30. **López-Ortiz, C**. Unintended muscle activity influences interlimb coordination in locomotion after stroke. Motor Control, 11:S244, 2007
31. Gruben, K. and **López-Ortiz, C**. Foot force path linearity in the frontal plane during pushes on stationary and moving pedals. Proceedings of the 24th Annual Meeting of the American Society of Biomechanics, 2000.
32. Gruben, K., **López-Ortiz, C**. Foot force direction during static extension efforts: muscular component. Advances in Motor Rehabilitation Symposium Proceedings, Isle, Illinois, 1998.
33. **López-Ortiz, C**. Kinematic Analysis of *Pirouette* Performances by Skilled and Non-skilled Dancers. International Association for Dance Medicine and Science. Fourth Annual Meeting Proceedings. San Francisco, California, 1995.

34. **López-Ortiz, C.** Symmetry in Dance. Scholars' Day State University of New York-Brockport, 1994. Brockport, NY 1994.

Non-Peer Reviewed Abstracts:

35. Alibiglou L, **López-Ortiz C**, Walter C. B., Brown D A. Bilateral limb phase relationship and its potential to alter muscle activity timing during locomotion post-stroke. Society for Neuroscience Program 38th Annual Meeting, 2008.
36. **López-Ortiz, C.**, Schmidt M.W., Rogers, L. M., Batchu P. K., Rymer W. Z., Brown D. A. Muscle foot force magnitude affects inter-limb coordination in post-stroke locomotion. Society for Neuroscience Program 36th Annual Meeting, 2006.
37. **López-Ortiz, C.**, Schmidt M. W., Gruben, K. G., Brown D.A., and Rymer, W. Z. Muscle groups and muscle contribution to foot force during lower limb pushing efforts. Medical Rehabilitation Research Training Workshop Abstracts. National Institute of Child and Human Development. NIH. December 5-6, 2005. Rockville, Maryland.
38. **López-Ortiz, C.**, Schmidt M. W., and Gruben, K. G. Foot force and EMG in kinematically constrained motion of the lower limb. Society for Neuroscience Program 32nd Annual Meeting, 2002.
39. **López-Ortiz, C.**, Schmidt M. W., and Gruben, K. G. Emergent linearity of the foot force paths during kinematically constrained motion of the lower limb: quasi-static case. Society for Neuroscience Program 31st Annual Meeting, 2001.
40. Gruben, K.G. and **López-Ortiz, C.** Limb force control in infants: motor primitives. Society for Neuroscience Program 30th Annual Meeting, 2000.

Selected Media References:

41. Cerebral Palsy and Ballet. National Center on Health, Physical Activity and Disability <http://www.nchpad.org/895/5018/Cerebral~Palsy~and~Ballet>, 2015.
42. Ballet Clasico como terapia. <http://medholos.blogspot.com/2014/05/ballet-classico-como-terapia.html>. May 6, 2014.
43. EL BALLETO COMO REHABILITACIÓN EN LA PARÁLISIS CEREBRAL: BALLETO VALE+. <https://adaptohabitatblog.wordpress.com/2013/10/31/el-ballet-como-rehabilitacion-en-la-paralisis-cerebral-ballet-vale/> October 31, 2013
44. Fisioterapeutas y profesionales de la danza en el curso de ballet adaptado para la rehabilitación física en parálisis cerebral organizado por la CUE- Universidad Cardenal Herrera. <http://blog.uchceu.es/docu/index.php/2013/canal-9-fisioterapeutas-y-profesionales-de-la-danza-en-el-i-curso-de-ballet-adaptado-para-la-rehabilitacion-fisica-en-paralisis-cerebral-organizado-por-la-ceu-uch/> June 23, 2013.
45. El Ballet de la Generalitat clase con niños <http://www.youtube.com/watch?v=yN4MgmflFzg> June 19, 2013.
46. Ballet Vale+ <https://www.facebook.com/TeatresdeLaGeneralitat?filter=3> <https://www.facebook.com/media/set/?set=a.508254065910199.1073741846.240285436040398&type=1> June 2013.

47. El CEU organiza un curso de ballet para niños con parálisis cerebral/ ESPAÑA.
<http://portalescenico.mx/node/8588> Portal de las Artes Escenicas Mexico Fondo Nacional para la Cultura y las Artes. June 11, 2013.
48. Artist Disabilities. <http://columbiachronicle.com/artist-disabilities/> October 2012.
49. Dancer-turned-doctor starts classes for Parkinson's patients
50. http://abclocal.go.com/wls/story?section=news/disability_issues&id=8851944
October 18, 2012.
51. Taniec pomaga dzieciom z porażeniem mózgowym [GALERIA]
http://wyborcza.pl/56,75402,11539862,Taniec_pomaga_dzieciom_z_porazeniem_mozgowym_GALERIA.html April 15, 2012.
52. Terapia ballet para crianças com deficiência movimento <http://cristina-mundialnoticias-cristina.blogspot.com/2012/03/terapia-ballet-para-criancas-com.html>. March 31, 2012
53. Therapy Ballet for Kids with Movement Disabilities
<http://photoblog.msnbc.msn.com/news/2012/03/31/10947289-therapy-ballet-for-kids-with-movement-disabilities>. March 31, 2012
54. Therapy Ballet for Kids with Movement Disabilities
<http://photoblog.nbcnews.com/news/2012/03/31/10947289-therapy-ballet-for-kids-with-movement-disabilities?lite> March 31, 2012
55. Forbes India, Multimedia Slide Show. <http://forbesindia.com/slideshow-big/slideshow/snapshots-of-the-fortnight-march-29-april-10-2012/32722/1>
56. Therapy Ballet <http://blogs.reuters.com/photographers-blog/2012/03/30/therapy-ballet/> March 30 2012
57. Little Girl with cerebral palsy gets shot at Joffrey 'Nutcracker' Chicago Sun-Times.
<http://www.suntimes.com/photos/galleries/9465153-417/girl-with-cerebral-palsy-gets-shot-at-joffrey-nutcracker.html> Dec 15 2011
58. Orland girl with CP gets shot at Joffrey's 'Nutcracker' Southtownstar, a Chicago SunTimes Publication <http://southtownstar.suntimes.com/news/9188825-418/orland-girl-with-cp-gets-shot-at-joffreys-nutcracker.html> December 14, 2011.
59. A conversation about physically integrated dance. The Aud Blog, Auditorium Theatre of Roosevelt University.
http://auditoriumtheatre.blogspot.com/2011/11/conversation-about-physically_18.html#.UV-LOxlAu-8 November 18, 2011.
60. The healing powers of dance. AARP The Magazine.
<http://www.aarp.org/health/fitness/info-03-2011/dance-for-health.html> March 15 2011.
61. Dance class for adults with cerebral palsy featured in Medill News Chicago
[Parkinson's disease patients dance their way to improved health](#) ↗ May 2010.
62. Dance class for children with cerebral palsy featured in Good Morning America
[Overcoming Cerebral Palsy With Ballet - ABC News](#) ↗ [Against All Odds: Dancing With Cerebral Palsy - ABC News](#) ↗ January 2010.
63. New Media and Information Technologies and Dance Education.
<http://www.art.net/~dtz/scott1.html> September 23, 1996.

INVITED LECTURES AND SEMINARS:

1. **Evidence Based Adapted Ballet for Movement Rehabilitation.** Illinois Association for Health, Physical Education, Recreation and Dance Convention, Pheasant Run Resort in St. Charles, IL on November 21, 2013
2. **Adapted Ballet for Physical Rehabilitation in Cerebral Palsy.** FIVAN Center for Neurorehabilitation, Valencia, Spain, June 25, 2013.
3. **Classical Ballet and Physical Rehabilitation for Children with Cerebral Palsy - Ballet Vale +.** CEU Universidad Cardenal Herrera, Faculty of Health Sciences, Department of Physical Therapy, Valencia Foundation for Neurorehabilitation, CulturArts, Ayuntamiento de Valencia, Ballet Valet +. 40 hours. Valencia, Spain, June 16-21, 2013.
4. **Back To Basics-Stretching.** Co-Chaired with Sue Mukherjee and Deborah Gaebler-Spira. International Conference on Cerebral Palsy and developmental Medicine and 7th Annual Meeting of Indian Academy of Cerebral Palsy, Lucknow, India, March 9, 2013
5. **Melody and Rehabilitation Robotics for Children With Cerebral Palsy.** International Conference on Cerebral Palsy and developmental Medicine and 7th Annual Meeting of Indian Academy of Cerebral Palsy, Lucknow, India, March 9, 2013.
6. **Use of Virtual Reality Home Based Therapy System for Children with Upper Limb Problems in Cerebral Palsy.** Co-Chaired with Sue Mukherjee and Deborah Gaebler-Spira. International Conference on Cerebral Palsy and developmental Medicine and 7th Annual Meeting of Indian Academy of Cerebral Palsy, Lucknow, India, March 9, 2013.
7. **Dance Interventions in Parkinson's Disease and their Clinical Impact.** 1st Indian Federation of Neurorehabilitation Conference, Lucknow, India, March 8, 2013.
8. **Integrating Robotics Into Clinical Care-Expanding Horizons And Breaking Down Barriers To Implementation.** Co-Chaired with Sue Mukherjee and Deborah Gaebler-Spira. International Conference on Cerebral Palsy and developmental Medicine and 7th Annual Meeting of Indian Academy of Cerebral Palsy, Lucknow, India, March 8, 2013
9. **Structured Dance Training for Physical Rehabilitation of Children with Cerebral Palsy.** International Conference on Cerebral Palsy and Developmental Medicine and 7th Annual Meeting of Indian Academy of Cerebral Palsy, Lucknow, India, March 8, 2013.
10. **Rehabilitation Robotics for Pediatric Applications.** IEEE International Conference on Neurorehabilitation Toledo, Spain, November 13, 2012.
11. **Structured Dance Class for Physical Rehabilitation in Children with Cerebral Palsy.** Department of Pediatrics, Upstate Medical University, Syracuse, NY, June 13, 2012.
12. **From Aspiration to Artist. A conversation about physically integrated dance in Chicago.** Roosevelt Auditorium Theater, Roosevelt University, Chicago, IL, November 9, 2011.
13. **Music and Movement Segmentation in Children with Cerebral Palsy.** Bigler Auditorium, Children's Memorial Hospital Chicago, IL, November 11, 2011.

14. **Dance for Physical Rehabilitation in Movement Disorders.** Dance Program, Theater Department, School of Communication, Northwestern University, Evanston, IL, April 1, 2011.
15. **Dance for Motor Learning and Physical Rehabilitation in Movement Disorders.** Herberger Institute for Design and the Arts. Fulton School of Engineering, School of the Arts, Media and Engineering Arizona State University, March 29, 2011.
16. **Dance for Parkinson's!** Parkinson's Disease Annual Patient and Family Symposium. New Horizons in Parkinson's Disease Research and Care, Parkinson's Disease and Movement Disorders Center, Feinberg School of Medicine Northwestern University September 11, 2010.
17. **Classical Ballet as an Adjunct to Therapy in Cerebral Palsy.** La Rabida Children's Hospital, University of Chicago, 2009.
18. **Dance for Children with Cerebral Palsy.** Department of Biomedical Engineering, College of Engineering, Marquette University, 2009.
19. **Rehabilitation Technology in Post-Stroke Locomotion: New Directions.** Society of Women Engineers Meeting, Northwestern University, January 27, 2007.
20. **Principal component analysis of muscle activity and resultant contact forces during cycling after stroke.** Robotics Laboratory, Sensory Motor Performance Program, Rehabilitation Institute of Chicago, October 10, 2006
21. **Foot force and EMG in kinematically constrained motion of the lower limb.** Sensory Motor Performance Program, March 21, 2005.
22. **Historic Perspectives on "Ballet National Folklórico de Mexico."** Munson-Williams-Proctor Arts Institute, Utica, New York, 1995.

RELEVANT PROFESSIONAL EXPERIENCE:

Research Scientist/Research Assistant Professor. 2008-2013. Directing the Dance Rehabilitation Research Program at the Rehabilitation Institute of Chicago/Northwestern University. Currently conducting basic science and clinical research in the neurosciences of motor control, motor coordination, and motor learning for children with cerebral palsy through dance, motion tracking technology and virtual reality environments in collaboration with Dr. Gaebler-Spira, the Robotics Laboratory, at the Rehabilitation Institute of Chicago (RIC). In addition, establishing an evidence based dance rehabilitation program for adults with Parkinson's disease with the collaboration of Dr. Santiago Toledo from RIC, Drs. Konrad Kording and Mark Albert from the Bayesian Behavior Laboratory, and Dr. Tanya Simuni from Northwestern's Center for Movement Disorders and Parkinson's Disease. Conducted pilot experiments on the classification of motor impairments in cerebral palsy in collaboration with Dr. Nina Suresh and Dr. Zev Rymer from the Motor Unit Laboratory. Also directs clinically oriented programs using elite dance training methodology and current research in motor control for the physical rehabilitation of children with cerebral palsy and adults with Parkinson's disease with seed funding by the National Parkinson's Foundation, and philanthropic gifts from the Anixter Foundation. Develops partnerships with the Joffrey Ballet Academy for both classes. Mentors undergraduate, graduate and post-graduate students in research methodologies and human subjects experimentation.

Faculty. 2012-present. Teaches classical ballet, classical repertory, and body conditioning faculty at Joffrey Ballet Academy, The Official School of the Joffrey Ballet. Has taught students ages 3 to adult in the Children, Youth, Adult Bridge and Pre-Professional divisions. Coaches professional and pre-professional ballet dancers in private instruction.

Dance for Movement Rehabilitation Instructor Develops techniques for movement rehabilitation of motor disorders such as cerebral palsy, developmental coordination disorder, and Parkinson's disease. Teaches weekly classes to these populations.

Visiting Artist, Rubin Award. Jan-Aug 2010. Mentored and trained Master's degree students of the Masters in Dance/Movement Therapy and Counseling Masters program in Columbia College, Chicago, IL in physical therapy applications of dance and gave seminars on dance for children for cerebral palsy and anatomy and kinesiology for dancers from a clinical point of view.

Clinical Assistant Professor. 2008-2009. Conducted research on music and movement in children with cerebral palsy. Developed a quantitative assessment tool for the kinematics of body motions in cerebral palsy using VICON motion capture technology. Governors State University. Supported by the Coleman Foundation, Chicago, IL and the Center for Independence through Conductive Education in Lagrange, IL.

Post-doctoral Fellow. NRSA/NIH Post-doctoral Fellow Individual Award F-32, 2007-2008. Northwestern University/Rehabilitation Institute of Chicago-Sensory Motor Performance Program (SMPP). Conducted research in the area of unintended muscle activity during locomotion after stroke under the mentorship of William Zev Rymer, MD, PhD. Initiated research on movement disorders on Cerebral Palsy in collaboration with Dr. Deborah Gaebler-Spira, RIC/NU using motion analysis systems such as VICON and Optitrack Shadowed physical therapists working with children with cerebral palsy. Involved in all aspects of research and grant writing. Attended weekly seminars by internationally renowned scientists in the topics of Neural Signal Processing, Robotics Rehabilitation, Body machine interfaces, Biomechanics, Bayesian Motor Control, and the Sensory Motor Performance Program Seminars. Mentored graduate students in Physical Therapy and Human Movement Sciences, Neuroscience Training Program and Biomedical Engineering graduate program. Attended teaching training seminars at Northwestern University's Searle Center for Teaching Excellence. Coordinated the bi-weekly Locomotion Laboratory Seminar.

Post-doctoral Fellow. NRSA Post-doctoral Fellow Institutional Award T-32, 2005-2007. Northwestern University/Rehabilitation Institute of Chicago (SMPP). Conducted research in the area of impaired locomotion after stroke. Other activities as above.

Maternity and family leave. 2002-2005. During this leave published three articles in peer-reviewed journals.

Research Fellow. Held the Virginia Horne Henry Fellowship 2000-2001 and the Marie L. Carns Fellowship, 1998-2000 at the department of Kinesiology, University of Wisconsin-Madison. Conducted research in the area of biomechanics and motor control of the lower limb in humans. Involved in all aspects of research: development of research questions, instrumentation design and machining, electromyography, motion analysis (Optotrak, PEAK5), force plate and force transducer measurements, software development for experiment control and data analysis (Basic, Visual Basic, Pascal, Matlab, AutoCAD, Minitab, Stats, SPSS, and Labview), publication of findings, and grant proposal writing. Mentored research practicum students in the Physical Therapy MS program.

Research Assistant. 1997-1998. Biomechanics Laboratory, Dept. of Kinesiology at the University of Wisconsin-Madison. Same as above.

Teaching Assistant. 1996-1997. Biomechanics Laboratory, Dept. of Kinesiology at the University of Wisconsin-Madison Taught the laboratory section of the undergraduate biomechanics course. Responsible for all aspects of laboratory practices: designing experiments, installing and troubleshooting experimental set-up, teaching and grading. Also, graded lecture's homework, and assisted students during office hours.

Lecturer, Classical Ballet. 1995-1996. National Technical Institute for the Deaf, at the Rochester Institute of Technology. Taught the undergraduate classical ballet course for the hearing impaired, collaborated with Michael Thomas from Stuttgart Ballet.

Dance Instructor. MA fieldwork 1993. Dance Department, State University of New York at Brockport. Taught the undergraduate Introduction to Dance course for Physical Education and Theatre majors, under the supervision of Professor Irma Pylyshenko.

Classical Ballet Instructor/Curriculum/Faculty Supervisor. 1979-1991. Ballet Academy of Coyoacán, directed by Ana Castillo, Mexico. Involved in all aspects of conservatory style training for elite ballet students and teachers training/supervision as well as in the design and implementation of the first comprehensive Mexican System for Dance Instruction (ages 5-18) based in part on the Royal Academy of Dancing Syllabus. In addition was responsible for choreographing dances for the Annual Performances of the conservatory training section of the school. The Ballet Academy of Coyoacán was the First Ballet Academy in a country outside the British Commonwealth to be affiliated to The Royal Academy of Dance.

Research and Teaching Assistant. 1989-1991. Institute of Astronomy, Center for Instrumentation, and Faculty of Sciences, at the National Autonomous University of Mexico. Assisted in implementing FORTRAN and Turbo-Pascal software for the calculation of radiative transfer in dust clouds of binary stars and optical design. Graded homework for the Optics and Optoelectronic courses.

Real and Vector Calculus Workshop Instructor. 1988-1990. School of Engineering, Panamerican University, Mexico. Assisted undergraduate engineering students with differential and integral calculus questions and exercises.

COURSES TAUGHT

Fall 2014	KIN 257	Coordination, Control and Skill Department of Kinesiology, College of Applied Health Sciences, University of Illinois at Urbana-Champaign.
Spring 2015	KIN 257	Coordination , Control and Skill Department of Kinesiology, College of Applied Health Sciences, University of Illinois at Urbana-Champaign.
Fall 2015	KIN 257 KIN 385 KIN 590	Coordination, Control, and Skill Experiences in Kinesiology Research Independent Study Department of Kinesiology, College of Applied Health Sciences, University of Illinois at Urbana-Champaign.
Spring 2016	KIN 257 KIN 385 KIN 473	Coordination, Control and Skill Experiences in Kinesiology Research Skill Acquisition Strategies Department of Kinesiology, College of Applied Health Sciences, University of Illinois at Urbana-Champaign.

HONORS AND AWARDS:

Travel Award - Cerebral Palsy International Research Foundation 2009 Award to attend the 63rd Annual Meeting of the American Academy for Cerebral Palsy and Developmental Medicine, September 2009.

Post-doctoral Fellowship. NIH/NRSA F-32, Individual Award. Northwestern University, Rehabilitation Institute of Chicago (SMPP), 2007-2008.

Post-doctoral Fellowship. NIH/NRSA T-32, Institutional Award. Northwestern University, Rehabilitation Institute of Chicago (SMPP), 2005-2007.

Virginia Horne Henry Wisconsin Distinguished Graduate Fellowship. 2000-2001. School of Education, University of Wisconsin-Madison. Highest graduate student award. Full tuition remission and full stipend award.

Vilas Professional Development Award, 2000. The Graduate School. University of Wisconsin-Madison.

Marie L. Carns Fellowship, 1999-2000 and 1998-1999. Department of Kinesiology, School of Education, University of Wisconsin-Madison. Out of state tuition remission and full stipend award.

Pylyshenko-Strasser Graduate Dance Award to the Most Distinguished Graduate Student, 1994. State University of New York, College at Brockport.

Graduate Fellowship for a doctoral degree in Optics in a Foreign Institution, 1991. National Autonomous University of Mexico. Declined.

Summer Workshop in Optics Scholarship with Professor Robert Hopkins 1990. Center for Research in Optics (CIO), Guanajuato Mexico.

Graduate Scholarship for a Masters degree in Computer Sciences 1991, National Science and Technology Council, Mexico. Declined.

Graduation Thesis Scholarship 1990-1991. Center for Instrumentation, National Autonomous University of Mexico.

High Achievement Award for the second best overall grade average 9.88/10, class of 1991. Department of Physics, Faculty of Sciences, National Autonomous University of Mexico.

INSTITUTIONAL SERVICE:

Analysis of a computer program of radiative transport in dust, 1988 Institute of Astronomy, National Autonomous University of Mexico.

Dance Club Instructor, 1992, Migrant Education Project, Research Foundation of New York.

Health Committee Chairperson 1995-1997. World Dance Alliance, the Americas Chapter.

Graduate Student Representative in the Graduate Studies Committee, 1999-2000. Department of Kinesiology, University of Wisconsin- Madison.

Coordinator of the Locomotion Laboratory Seminar, Department of Physical Therapy and Human Movement Sciences, Northwestern University, 2006-2007.

TRAINEES:

Research training for Northwestern University and the Rehabilitation Institute of Chicago Resident Fellows, Inters and Externs:

Kim Gladden, MD, 2009-2010
Laura Deon, MD, 2010
Geneva Jacobs, MD, 2010
Maria Resee, MD, 2011
Mary Dubon MD, 2012-2013

Independent study, Interns, Externs, and Co-op Students:

Matthew W. Schmidt, BS, University of Wisconsin-Madison, 1998-2001
Laila Alibigalou, PT, Northwestern University, 2006-2008
Tim Rachoy, BS, PT Governor's State University, 2008-2009
Mark Kashmer, BS, Medical Student, University of Illinois Chicago Medical College, 2009
Smita Sarkar, BS, University of Illinois-Chicago, 2009
Melissa Troyk, Exercise Physiology Major, University of Virginia, 2010
Laura Wong, BS, Medical Student Feinberg School of Medicine, 2010
Jennifer Warnick, Psychology Major, Dance Minor, Northwestern University, 2011
Wendolyn Gomez, Social Services Major, Dance Minor, Loyola University-Chicago, 2011-2012
Julia Simkowski, Bio-Medical Engineering Co-op Student Northwestern University, 2011-2012
Miriam Komisar, BS, University of Illinois College of Medicine, 2012
Katherine Burke, BS, University of Wisconsin-Madison, 2012
Khushboo Doshi, BS, Medical Student, University of Illinois Chicago Medical College, 2011-2013
Evan Kaspi, North Shore Country Day School, 2011-2013
Jessica Mork, Dance Major, Palm Beach Atlantic University, 2013
Jamila Bahrainwala, Medical extern 2013

Master's Thesis Consultant (Dance/Movement Therapy/Statistics):

Sabrina Washington, Columbia College, Chicago, 2010
Kristina Fluty, Columbia College Chicago, 2010

National Science Foundation/STEM Students:

Alexander Weiss, 2011-2012.

Dozens of volunteers in weekly dance classes for children with cerebral palsy including physical therapy students, physical, occupational and speech therapists, medical students and residents.

Students that have won awards on research projects under my supervision:

Evan Kaspi, UIUC i-Foundry , 2015

NSF/STEM Students

Alexander Weiss, 2011-2012. Illinois Junior Academy of Science State Exposition, Awarded Best Research in Health Category in State Level 2012.

Julia Simkowski, Bio-Medical Engineering “A Quantitative Comparison of Variance in Movement of Children with Cerebral Palsy” Northwestern University Office of the Provost Research Grant 2011.

Khushboo Doshi, BS, Medical Student, UIC, Rehabilitation Research Experience for Medical Students, Association of Academic Physiatrists, 2011.

Ballet students that became professional dancers/chorographers:

Tanya Perez-Salas <http://taniaperezsalas.org/principal.html>

Alejandra Cobo , San Jose Cleveland Ballet.

Isabel Sotelo, Compania Nacional de Danza, Mexico. D.F.

Vera Islas, Mariana Cobo, Ángel Mayrén, Isabel Sotelo, Vania Moysén, and Guillermo Galindo, Taller Coreográfico de la UNAM, Mexico D.F.
<http://www.tcunam.org/bienvenida.cfm>

PROFESSIONAL ORGANIZATIONS:

American Academy for Cerebral Palsy and Developmental Medicine
American Association for the Advancement of Science
International Association for Dance Medicine and Science
International Dance Teachers Association
International Society for Motor Control
Mark Morris Dance for PD
National Dance Education Organization
Society for the Arts in Healthcare
Society for Neuroscience
Society for the Neural Control of Movement

EDITORIAL AND REVIEW RESPONSIBILITIES:

Reviewer for:
Arts and Health, An International Journal for Research, Policy and Practice
Biological Cybernetics
Experimental Brain Research
IEEE Transactions on Haptics
IEEE Transactions on Systems, Man, and Cybernetics
IEEE International Conference on Robotics and Automation
Journal of Neuroscience

Motor Control
Archives of Physical Medicine and Rehabilitation
Neurorehabilitation and Neural Repair
Alzheimer's disease and Parkinsonism
Journal of Novel Physiotherapies
PlosONE

Picture

