

Curriculum Vitae for Theresa Hayes Cruz

Home

655 West Irving Park Road, Unit 3116
Chicago, IL 60613
P: 973-464-7554
t-hayes3@northwestern.edu

Office

345 East Superior Street, Room 1409
Chicago, IL 60611
P: 312-238-1685
F: 312-238-2208

Education/Training

Institution and Location	Degree	Year	Field of Study
Northwestern University Evanston/Chicago, IL	PhD	Winter 2008* Anticipated	Biomedical Engineering
Northwestern University Evanston/Chicago, IL	MS GPA 3.8/4.0	2006	Biomedical Engineering
Rutgers, The State University of New Jersey Piscataway, NJ	BS GPA 3.9/4.0	2003	Biomedical Engineering With Highest Honors

Employment History:

- 2003-present Graduate Student, Rehabilitation Institute of Chicago/Northwestern University
- Developed and executed research studies to understand neuromechanical changes post-stroke.
 - Identified abnormal constraints on torque production by subjects with chronic stroke under isometric and overground gait conditions.
 - Successfully earned grants, presented findings orally and in writing, and maintained Institutional Review Board records
- 2002-2003 Research Assistant, Human Performance and Movement Analysis Laboratory at Kessler Medical Rehabilitation Research and Education Corporation, West Orange, NJ
- Collected and processed kinematic, kinetic, and electromyographic data for studies on subjects with spinal cord injuries, stroke, and traumatic brain injury.
- 2001 Research Assistant for Steven Petrucelli, Ph.D., CTO of Measurement Specialties, Inc and Professor of Biomedical Engineering, Rutgers University
- Collected data to compare methods of body fat percentage calculations

Teaching Experience

- 2006-2007 General Tutor, 15 hrs/wk for undergraduate engineering courses
- 2005 Teaching Assistant, Biothermodynamics
- 2004 Grader, Biothermodynamics

Professional Memberships:

- 2007-present Society for Neuroscience
- 2007-present American Society of Biomechanics
- 2000-present Biomedical Engineering Society
- 2001-2004 Society of Women Engineers

Honors and Awards:

- Sarah Baskin Award for Excellence in Research – First Place 2007
- Tau Beta Pi Engineering Honor Society
- Cap & Skull Honor Society
- Golden Key International Honor Society
- Rutgers University - School of Engineering Honors Program Graduate, Dean's List All Semesters, Outstanding Scholar Award, Edward J. Bloustein Distinguished Scholar

Peer-reviewed Publications

Cruz TH, Dhaheer YY. Evidence of abnormal lower limb torque coupling after stroke: an isometric study. *Stroke*. 2008 Jan;39(1):139-47. Epub 2007 Dec 6.

Cruz TH, Dhaheer YY, Differential effects of lower limb motor deficits on overground gait post-stroke *Pending Publication*

Lewek MD, **Cruz TH**, Moore J, Dhaheer Y, Hornby TG. Alterations in joint kinematics following locomotor training in individuals with chronic stroke. *Pending publication*

Platform Presentations

Hayes TE. Torque Coupling Post Stroke: Implications for Gait. *Annual Meeting of the American Society of Biomechanics 2007*

Hayes TE. Altered Neuromechanical Output Following Stroke: Evidence From Interjoint Synergies. *Biomedical Engineering Society Annual Meeting, 2006*.

Poster Presentations

Cruz TH, Dhaheer YY. Torque Synergies Impact Stroke Function. *Society for Neuroscience Annual Meeting, 2007*.

Hayes TE, Patton J, Dhaheer YY. Evidence for Restricted Control Options in the Lower Limbs of Stroke Subjects. *Society for Neuroscience Annual Meeting, 2006*.

Hayes, TE, Dhaheer, YY. Torque Constraints for the Modeling of Pathological Gait. *Dynamic Walking II Conference, 2006*.

Hayes TE, Lewek M, Dhaheer YY. Evidence for Restricted Torque Output in Hemiplegic Gait. *NIH – NINDS Medical Rehabilitation Research Training Workshop. 2005*.

Dhaheer YY, **Hayes TE**, Rymer WZ, Hornby TG. Swing-Phase Frontal Plane Kinetics in Normal and Stroke Populations. *Society for Neuroscience Annual Meeting, 2004*.

Research Support

Title: Altered neural templates post-stroke: Associating fundamental factors from isometric tasks and functional gait

Role: Principal Investigator

American Heart Association #0810161Z

Dates: 1/1/08 - 12/31/08

Title: Co-contraction muscle synergies in chronic stroke subjects: Influence on circumduction

Role: Principal Investigator

American Heart Association #0610062Z

Dates: 1/1/06 - 12/31/07

Title: Gait abnormalities in individuals with stroke: Implications to rehabilitation

Role: Graduate Student

Principal Investigator: Yasin Dhaheer, PhD

Department of Education - National Institute on Disability and Rehabilitation Research

H133G040065

Dates: 10/1/04 - 9/30/07

Title: Pathophysiology and Rehabilitation of Neural Dysfunction

Role: Graduate Student.

Principal Investigator: William Zev Rymer, MD PhD

National Institutes of Health – National Institute of Child Health and Human Development –

#5T32HD007418-15

Dates: 10/1/04 – 12/31/05