

**Scholarly Activities**  
**Department of Physical Medicine and Rehabilitation**  
**June - August 2014**

***REGULAR FACULTY***

**Brenna D. Argall:**

Publications:

**B. D. Argall.** Modular and Adaptive Wheelchair Automation. In Proceedings of the International Symposium on Experimental Robotics (ISER), Marrakech, Morocco, June 2014.

Awards:

2014-2015 Searle Fellows program at Northwestern.

Lectures:

RSS 2014 Workshop on Women in Robotics in Berkeley CA., July 2014

**Chih-Hung Chang:**

Awards:

Archives of Physical Medicine and Rehabilitation : Outstanding Contribution in Reviewing, April 2014

**Leora Cherney:**

Publications:

Van Vuuren, S. & **Cherney, L. R.** A Virtual Therapist for Speech and Language Therapy. [Lecture Notes in Computer Science](#), Vol. 8637. Springer, 2014.

Presentations:

**Cherney, L. R.** Neuroplasticity, Technology, and the Changing “Face” of Aphasia Treatment. One-day workshop presented at Utah State University, Logan UT. June, 2014.

**Cherney, L. R.**, Lee, J. B., & Van Vuuren, S. Computer-Directed Sentence-Level Writing Treatment for Persons with Chronic Aphasia. Presented at the Mid-Year Meeting of the International Neuropsychological Society, Jerusalem, Israel, July, 2014.

**Cherney, L. R.**, Rogers, L. M., Wang, X., Hurwitz, R., Pitts, L., Babbitt, E. M., & Parrish, T. Transcranial Direct Current Stimulation: A Pilot Study of Anodal, Cathodal and Sham Stimulation in Aphasia. Presented at the Mid-Year Meeting of the International Neuropsychological Society, Jerusalem, Israel, July, 2014.

**Cherney, L. R.**, Wang, X., Rogers, L. M., & Parrish, T. Neurophysiological changes associated with anodal, cathodal and sham tDCS in chronic aphasia. Presented at the annual conference, Neurobiology of Language. Amsterdam, The Netherlands. August 2014.

Van Vuuren, S. & **Cherney, L. R.** A virtual therapist for speech and language therapy. Presented at the 14th International Conference on Intelligent Virtual Agents, Boston, MA. August, 2014.

Awards:

**Edna Babbitt** received first place in the 2014 Sarah Baskin Award for Excellence in Research in the category "PM&R Faculty" for her paper titled: **ANALYSIS OF RETROSPECTIVE DATA FROM AN INTENSIVE COMPREHENSIVE APHASIA PROGRAM.** **Leora Cherney** served as a co-author on this paper.

**Deborah Gaebler-Spira:**

Presentations:

RERC State of the Science (SOS) Symposium on : Technologies for Children with Orthopaedic Disabilities **Special Session Keynote Speaker**, Shriners Hospital, Chicago, IL August 7-8, 2014

**Allen Heinemann:**

Peer reviewed publications:

**Heinemann AW**, Dijkers MP, Ni P, Tulsy DS, Jette A. Measurement Properties of the Spinal Cord Injury-Functional Index (SCI-FI) Short Forms Archives of Physical Medicine and Rehabilitation. *Archives of Physical Medicine and Rehabilitation*, 95(7):1289-1297.

Tulsy DS, Kisala P, Victorson D, Carlozzi N, Bushnik T, Sherer M, Choi S, **Heinemann AW**, Chiaravalloti ND, Sander A, Englander J, Hanks R, Kolakowsky-Hayner S, Roth E, Gershon R, Rosenthal M., & Cella D. TBI-QOL: Development and Calibration of item banks to measure patient reported outcomes following traumatic brain injury. *Journal of Head Trauma Rehabilitation*.

Garcia S, Hahn E, **Heinemann AW**, Lai J-S, Hammel J, Magasi S, Semik P. Development of Self-Report Measures of Social Attitudes that Act as Environmental Barriers and Facilitators for People with Disabilities, *Archives of Physical Medicine and Rehabilitation*, in press.

Hart T, Kozlowski A, Whyte J, Poulsen I, Kristensen K, Nordenbo K, **Heinemann AW**. Functional Recovery After Severe Traumatic Brain Injury: An Individual Growth Curve Approach. *Archives of Physical Medicine and Rehabilitation*, in press.

Presentations:

LaVela SL, **Heinemann AW**, Etingen B, Neumann HD, Miskovic A, Locatelli SM, Chen D. Perceptions of patient-centered care in individuals with spinal cord injuries/disorders. Paralyzed Veterans of America Summit 2014. Las Vegas, NV. Oral Presentation. August 27, 2014.

Grant submitted:

RRTC on Implementing Evidence-Based Practice (PI)

PCORI, Evaluating the Clinical Feasibility and Validity of PROMIS Item Banks following Stroke (Principal Investigator)

Grants in development:

PCORI, Effectiveness and Efficiency of Robot-Assisted Rehabilitation Therapy (Principal Investigator)

**Joseph Ihm:**

Lectures:

Hands-on assistant Ultrasound Cadaver Course Rehabilitation Institute of Chicago, Chicago, Illinois March 22, 2014

“Exercise is Medicine” Lecture for M1 class, part of musculoskeletal curriculum Northwestern University Feinberg School of Medicine, Chicago, Illinois April 22, 2014

“Adult Sports and Overuse Injuries” Lecture for M1 class, part of musculoskeletal Curriculum Northwestern University Feinberg School of Medicine, Chicago, Illinois April 25, 2014

“Physical Exam of the Cervical Spine” American College of Sports Medicine Annual Meeting Orlando, Florida May 29, 2014

“Physical Exam of the Lumbar Spine” American College of Sports Medicine Annual Meeting Orlando, Florida May 30, 2014

“Basics of Reading an MRI of the Lumbar Spine American College of Sports Medicine Annual Meeting Indianapolis, Indiana May 30, 2014

**Eric Larson:**

Publications:

**Larson, EB**, Feigon, M, Gagliardo, P & Dvorkin, AY (2014). Virtual reality and cognitive rehabilitation: A review of current outcome research. NeuroRehabilitation, 34 759–772

Presentations:

Presented Larson, E. & Fischer, M. (June, 2014). Neuropsychological Testing: What the Clinician Needs to Know. Invited Presentation at Brain Injury Rehabilitation: Management and Outcomes in Different Models of Care, RIC Academy, Chicago, IL.

**Christina Marciniak:**

Publications:

Mathur SN, Chu SK, McCormick Z, Chien GC, **Marciniak** CM. Long-term Intrathecal Baclofen Outcomes after Greater than 10 years of Treatment. *PM&R*. 2014 6(6):506-513. PMID: 24355547

**Gadi Revivo:**

Poster:

McCormick Z, Chu S, Kotler D, Gagnon C, Amstutz D, Revivo G. Treatment of Pediatric Chronic Pain Associated with Joint Hypermobility: Does an Interdisciplinary Pain Program Work” presented at American Pain Society, March 2014

Dubon M, Revivo G:  
Pelizaeus-Merzbacher Disease: Two Cases in the Outpatient Rehabilitation Setting  
AAP, 2014

Lecture:  
Revivo G  
Updates in Chronic Pain Management in the Adolescent Population  
AAPM Annual Meeting, March 2014

### **RESEARCH FACULTY**

#### **Anne Deutsch**

Peer reviewed Publications:

Fyffe D, **Deutsch A**, Botticello A, Kirshblum S, Ottenbacher K. Racial and Ethnic Disparities in Functioning at Discharge and Follow-up among Patients with Motor Complete Spinal Cord Injury *Archives of Physical Medicine and Rehabilitation*. In Press

Kolski MC, O'Connor A, Van Der Laan K, Lee J, Kozlowski AJ, **Deutsch A**. Validation of a pain mechanism classification system (PMCS) in physical therapy practice. *Journal of Manual and Manipulative Therapy*. In Press.

Book Chapters:

**Deutsch A**, Farrell J. Economics and Health Policy in Rehabilitation. In: Cheryl Lehman, editor. *The Specialty Practice of Rehabilitation Nursing: A Core Curriculum, 6th edition*. Rehabilitation Nurses' Foundation, 2015 (in press).

**Deutsch A**. Quality and Accountability in Rehabilitation. In: Cheryl Lehman, editor. *The Specialty Practice of Rehabilitation Nursing: A Core Curriculum, 6th edition*. Rehabilitation Nurses' Foundation, 2015 (in press).

Presentations:

**Deutsch A**, McMullen T. Update on the Inpatient Rehabilitation Facility Quality Reporting Program. 2<sup>nd</sup> Annual Quality and Safety Summit for Inpatient Rehabilitation Hospitals. Pentagon City, VA. July 22, 2014.

#### **Linda Ehrlich-Jones**

Peer reviewed publications:

Sun K, Song J, Lee J, Chang RW, Eaton CB, **Ehrlich-Jones L**, Kwok K, Manheim LM, Semanik PA, Sharma L, Sohn M-W, & Dunlop D. (2014). Relationship of meeting physical activity guidelines with health-related utility. *Arthritis Care & Research*, 66, 1041-1047.

Hahn B, Baum C, **Ehrlich-Jones L**, Spoeri S, Doherty M, & Wolf T. (in press). Development of additional tasks for the Executive Function Performance Test. *American Journal of Occupational Therapy*.

Lee JW, Semanik PA, Song J, Chang RW, Sohn M-W, **Ehrlich-Jones L**, Kwoh, CK, Nevitt M, & Dunlop D. (in press). Sedentary behavior and physical function: Objective evidence from the Osteoarthritis Initiative, *Arthritis Care & Research*.

Grants submitted:

NIH/NINR R21 Ehrlich-Jones (Principal Investigator)

Increasing Physical Activity in Persons with Parkinson's Disease

Lupus Research Institute Ehrlich-Jones (Principal Investigator)

Smart-FIT: Fatigue Innovations Trial in Lupus

NIDRR Rehabilitation Research & Training Center on Health and Function

R3 Project Ehrlich-Jones (Co-PI)

Adaptation and Implementation of an Evidence-Based Physical Activity Program for People with Recently Acquired Mobility Disability

Ongoing service:

Co-Chair WFO, Northwestern University

Rheumatology Research Foundation, Member, Board of Directors

**Assaf Dvorkin:**

Publications:

Larson, EB, Feigon, M, Gagliardo, P & **Dvorkin, AY** (2014). Virtual reality and cognitive rehabilitation: A review of current outcome research. *NeuroRehabilitation*, *34* 759–772

**ADJUNCT / OTHER FACULTY**

**William Armstrong:**

Presentations:

William Armstrong recently attended the Annual RESNA conference in Indianapolis where he presented Shona McDonald, of South Africa, as the recipient of RESNA's Honorary Fellow Award. Mr. Armstrong had nominated Ms. McDonald for this award earlier in the year.

Shona McDonald is an entrepreneur and a driving force in the provision of Assistive Technology and advocacy for those with disabilities in South Africa

(<http://www.shonaquip.co.za/> and <http://www.uhambousa.org/>).

Lecture:

William Armstrong will be traveling to Peru on August 18<sup>th</sup> to conduct the World Health Organization's Wheelchair Service Training Program at the Instituto Nacional de Rehabilitacion in Lima. In addition to this 5-day course, Mr. Armstrong will also be

conducting a 1-day workshop for stakeholders and a 2-day workshop for health care managers. These activities are supported by USAID.

**Rosemarie King:**

Publications:

Bakas T, Clark P C, Kelly-Hayes M, **King RB**, Lutz B, Miller ET; on behalf of the American Heart Association Council on Cardiovascular and Stroke Nursing and the Stroke Council. *Evidence for Stroke Family Caregiver and Dyad Interventions: a scientific statement from the American heart Assoc. Stroke*. 2014;45

**Jacqueline Neal:**

Awards:

Searle Fellows Program 2014-2015 Academic Year

**Thomas Schnitzer:**

Publications:

McPherson JG, Edwards WB, Prasad A, Troy KL, Griffith JW, **Schnitzer, TJ**. Dual energy X-ray absorptiometry of the knee in spinal cord injury: methodology and correlation with quantitative computed tomography. *Spinal Cord*. 2014 July 15. Doi: 10.1038/sc.2014.122. [Epub ahead of print]

***NORTHWESTERN UNIVERSITY PROSTHETIC - ORTHOTIC CENTER***

Publications:

Dillon M, **Fatone S**, Morris M (2014) In Reply: Partial foot amputations may not always be worth the risk of complications. *Medical Journal of Australia*, 200(11):634-637.

**Fatone S, Johnson WB, Tucker K (2014)**. A 3D model to assess the effect of ankle joint axis misalignments in ankle-foot orthoses. *Prosthetics and Orthotics International*, published online August 5, 2014.

<http://poi.sagepub.com/content/early/2014/07/30/0309364614543551>

**Fatone S**, Dillon M, **Stine R**, Tillges R (in press) Coronal plane stability during gait in persons with unilateral Transfemoral amputation: a pilot study. *Journal of Rehabilitation Research and Development*.

**Robinson C, Major MJ**, Kuffel C, Hines K, Cole P. Orthotic management of the neuropathic foot: An interdisciplinary care perspective. *Prosthetics and Orthotics International*, 2014 (in press).

Presentations:

**Major, M., Stine, R., Heckathorne, C., Fatone, S. and Gard, S.** "Upper Body Kinematic Range-of-Motion and Variability of Transradial Prosthesis Users Performing Goal-Oriented Tasks." Poster presentation, World Congress of Biomechanics (WCB), Boston, MA, July 6-11, 2014.

Steele K, Choi H, Bjornson K, **Fatone S**, Wren T (2014) Using musculoskeletal modeling to evaluate the impacts of tuning ankle foot orthoses. World Congress of Biomechanics, July 6-11, Boston, Massachusetts.

**Stefania Fatone, PhD, and Ryan Caldwell, CP**, were invited to present an instructional course titled “Subischial Socket with Vacuum Assisted Suspension for Persons with Transfemoral Amputation” at the 19th Biennial Canadian Society for Prosthetists and Orthotists conference held in Halifax, Nova Scotia, Canada on August 7-9, 2014.

**Stefania Fatone, PhD, and Ryan Caldwell, CP**, were invited to present their instructional course “Subischial Socket with Vacuum Assisted Suspension for Persons with Transfemoral Amputation” as part of the American Academy of Orthotists and Prosthetists Webinar Series, on August 26, 2014.

#### Laboratory Visits/Events:

The **Northwestern University Prosthetics-Orthotics Center (NUPOC)** hosted an educational program and site visit for 36 graduate students of the Rush Occupational Therapy Program and a biomedical engineering student from Marquette University on July 22, 2014. R. J. Garrick, PhD, developed and facilitated the program. Steven A. Gard, PhD, presented “An Overview of NUPOC Research”; Chris Robinson, CPO, MS, MBA, ATC, FAAOP, presented “Upper Limb Orthotic Systems”; and Craig Heckathorne, MS, presented “Upper Limb Prosthetic Systems.”

Research by **Stefania Fatone, PhD**, and Australian colleagues Drs. Michael Dillon and Meg Morris, on partial foot amputation was featured in an article titled “Which part of the foot is best to go forward?” in Medical Observer Diabetes, June 17, 2014.

[http://www.medicalobserver.com.au/news/which-part-of-the-foot-is-best-to-go-forward?utm\\_medium=email&utm\\_campaign=17-06+NON-s4+Tues&utm\\_content=17-06+NON-s4+Tues+CID\\_8d8a817b1f03b939d2b025bc42071536&utm\\_source=Email%20marketing%20software&utm\\_term=Which%20part%20of%20the%20foot%20is%20best%20to%20go%20forward](http://www.medicalobserver.com.au/news/which-part-of-the-foot-is-best-to-go-forward?utm_medium=email&utm_campaign=17-06+NON-s4+Tues&utm_content=17-06+NON-s4+Tues+CID_8d8a817b1f03b939d2b025bc42071536&utm_source=Email%20marketing%20software&utm_term=Which%20part%20of%20the%20foot%20is%20best%20to%20go%20forward)

Ms. Antonia Nepomuceno has joined NUPOC as a summer research extern who will work on prosthetics projects with **Steven A. Gard, PhD, and Matthew Major, PhD**. She will assist in ongoing projects that examine gait stability in upper limb amputees and prepare devices for use in human motion analysis that will be conducted in the Jesse Brown VA Medical Center Motion Analysis Research Laboratory located on-site at NUPOC.

#### Meetings:

**Stefania Fatone, PhD, BPO (Hons)** was invited to visit the Facultad de Minas at the Universidad Nacional de Colombia in Medellin, June 9-13, 2014, to participate in the examination of two doctoral students in mechanical engineering. Dr. Fatone contributed to the examinations of Sofia Henao and Jessica Isaza in partial fulfillment of their doctor of philosophy degrees. Dr. Ramirez’ lab uses numerical models to better understand prosthetic sockets. Dr. Fatone

gave two presentations “NUPOC: 50 years of education and research in prosthetics and orthotics” and “Overview of research activities at NUPOC led by Stefania Fatone”. Drs. Fatone and Ramirez discussed potential research collaborations.

**Matty Major, PhD** attended the World Congress of Biomechanics, held in Boston, MA, July 6-11, 2014.

**Steven A. Gard, PhD, and Erin Boutwell, PhD**, attended the NIDRR Fellows and Mentors Meeting, held in Washington, DC, July 28-29, 2014.

Appointments:

**Steven A. Gard, PhD**, has been selected by the American Academy of Orthotists and Prosthetists as Editor-in-Chief of the Journal of Prosthetics and Orthotics. Dr. Gard began his tenure in July 2014.

**Matthew J. Major, PhD** has been appointed Assistant Professor of Physical Medicine & Rehabilitation at the Northwestern University Feinberg School of Medicine.

Grant Submissions:

**Stefania Fatone, PhD**, was PI on an NIH R03 proposal titled “Reliability of multi-center prescription and evaluation of orthotic management in children with Cerebral Palsy” submitted on June 16, 2014.

**Stefania Fatone, PhD**, Pranitha Gottipati, PhD, and **Rebecca Stine, MS**, were co-investigators on an application titled “Effects of surgery on gait and balance in patients with cervical myelopathy” (PI: Nader Dahdaleh, MD) submitted to NUCATS for the 2015 Dixon Translational Research Grants on July 28, 2014.

**Gard, S. and Heckathorne, C.** “Pressure-based Design of a Frame-type Transradial Socket.” Submitted to the Department of Veterans Affairs, Rehabilitation Research & Development Service, June 10, 2014.

**Gard, S.** “Development and Evaluation of a Shock Absorbing Prosthetic Ankle Mechanism.” Submitted to the Department of Veterans Affairs, Rehabilitation Research & Development Service, June 10, 2014.

Letter of Intent Submissions:

**Stefania Fatone, PhD**, submitted two letters of intent to the CDMRP Peer Reviewed Orthopedic Research Program on June 27, 2014. Dr Fatone was PI on the submission titled, “No longer smooth: introducing striations into prosthetic socket construction to improve suspension, rotation, fit and comfort” and co-investigator on the submission titled “Development of a quality register to record and assess effectiveness of prosthetic management and functional outcomes in persons with traumatic amputations” (PI: Nerrolyn Ramstrand, PhD).