

Scholarly Activities
Department of Physical Medicine and Rehabilitation
September-November 2014

REGULAR FACULTY

Brenna Argall:

Lectures:

Turning Assistive Machines into Assistive Robots. Northwestern University, Evanston IL.
October 29, 2014

James Atchison:

Lectures:

Interdisciplinary II- Anesthesia/ Pain Fellow Lecture (NMH) September 9, 2014

Presented at the 67th Annual Ward E. Perrin Clinical Refresher Course, "ER/ LA Opioid REMS: Achieving use while improving patient care". Lombard, IL September 12, 2014

Opioid I- Anesthesia/ Pain Fellow Lecture (NMH) October 14, 2014

Faculty and Content Developer for Pri-Med's Annual Conference Midwest Program, in collaboration with ACP and Northwestern University. Rosemont, IL October 16, 2014

Opioids II- Anesthesia/Pain Fellow Lecture (NMH) October 21, 2014

Presentations:

Presenting at the (AAFP) American Academy of Family Physicians Assembly. "Musculoskeletal Manipulation". Washington, DC, October 22, 2014

Present at the Optum Health Education – 8th Annual Medical Director Forum. Title: "Optimal strategies to Manage Chronic Musculoskeletal Pain". Las Vegas, NV, November 4, 2014

Presenting at the AAPM&R Annual Assembly. Titles: 1. Manual Medicine for Low Back Pain. 2. Interdisciplinary Functional Restoration Programs. 3. How Much is Enough...Interdisciplinary Treatment time? 4. Manual Treatment for Cervical Pain and Headache. November 12-16, 2014

Rebecca Brashler:

Teaching:

M1 Class Fall of 2014 – Foundations of Clinical Ethics (Small Group Leader)

Chih-Hung Chang:

Publications:

Cheng YY, Lin SJ, **Chang CH**, Lin CJ, Tsai CC, Su YC. Cool extremities, a diagnostic sign recorded in Shang Han Lun, still good prognosis index for septic patients in today's medical intensive care unit. Chin J Integr Med. 2014 Sep 24. [Epub ahead of print]

Grant Reviews:

Health Services Organization and Delivery Study Section (HSOD), Center for Scientific Review, National Institutes of Health

Nursing and Related Clinical Sciences Study Section (NRCS) (permanent member), Center for Scientific Review, National Institutes of Health

L. R. Cherney:

Elected to serve on the Executive Board of the Academy of Neurologic Communication Disorders and Sciences (ANCDs).

Presentations:

Babbitt, E. M., Worrall, L. E., & Cherney, L. R. (2014, November). Impact of Type and Severity of Aphasia on Outcomes in an Intensive Comprehensive Aphasia Program. Poster presented at the annual convention of the American Speech Language & Hearing Association, Orlando, FL.

THIS POSTER HAS WON A MERITORIOUS SUBMISSION AWARD, GIVEN TO ONLY 55 SUBMISSIONS OF 1600 TOTAL SUBMISSIONS. THIS POSTER ALSO WON A STUDENT RESEARCH TRAVEL AWARD, WHICH COVERS CONVENTION FEES AND TRAVEL EXPENSES.

Cherney, L. R. (2014, September). Aphasia Treatment: Implementing Best Practices into the Clinical Setting. Workshop presented at Regina Qu'Appelle Health Region, Saskatchewan, Canada.

Cherney, L. R., Harvey, R., Marciniak, C., & McCall, D. (2014, November). Lets Talk: An Update on Aphasia Treatment. Presented at the Annual Assembly of the American Academy of Physical Medicine and Rehabilitation, San Diego, FL

Cherney, L. R., Lee, J. B., & Carpenter, J. (2014, November). Enhancing written communication in people with aphasia. Miniseminar presented at the Annual Convention of the American Speech Language & Hearing Association, Orlando, FL.

Cherney, L. R., Lommen, G., Oehring, A., Persad, C., Rodriguez, A., Whiteside, J., Wozniak, L. (2014, November). Intensive Comprehensive Aphasia Programs (ICAPs): Illustrative Case Studies. Miniseminar presented at the Annual Convention of the American Speech Language & Hearing Association, Orlando, FL.

Meulenbroek, P. & Cherney, L. R. (2014, November). Assessing workplace communication in persons with moderate-severe traumatic brain injury. Miniseminar presented at the Annual Convention of the American Speech Language & Hearing Association, Orlando, FL.

Meulenbroek, P., Turkstra, L. S., & **Cherney, L. R.** (2014, October). Comparing communication and neuropsychological measures with return to skilled work after TBI. Poster presented at the 2014 American Congress of Rehabilitation Medicine (ACRM) Conference, Toronto, Canada.

Morean, D. F. & Cherney, L. R. (2014, October). Changes associated with treatment for breast cancer: A conceptual model. Poster presented at 91st annual ACRM conference; Ontario, Canada.

Pitts, L.L., Rathinasamy, M., Oswald, M., Toledo, S., Blouch, V., Ruzicka, R., & Cherney, L.R. (2014, November). Efficacy of Lingual Training Protocol in Parkinson's Disease-related Dysphagia. Oral presentation at the American Speech-Language-Hearing Association Annual Convention. Orlando, FL.

Pitts, L.L., Rogers, L., Wang, X., Harvey, R.L., & Cherney, L.R. (2014, November). Upregulation of Lingual-Palatal Pressures using Transcranial Magnetic Stimulation. Poster presented at the American Speech-Language-Hearing Association Annual Convention. Orlando, FL.

Ruzicka, R., Doyle, A., **Pitts, L.L., & Cherney, L.R.** (2014, November). Intensity-Modulated Dysphagia Treatment in Inpatient Rehabilitation. Poster presented at the American Speech-Language-Hearing Association Annual Convention. Orlando, FL.

Deborah Gaebler:

Presentations:

Cerebral Palsy- Enhancing Clinical Outcomes with Technology- Challenges and Solutions, Key Note Speaker, Summer School of Neurorehabilitation, Baiona, Spain, September 14-19, 2014

Robots to the Rescue- Assisting Evaluation and Treatment Outcomes, Panel Discussion, Baiona, Spain, September 14-19, 2014

Teachings:

Area of Scholarly Concentration Enhances Medical Education, Feinberg School of Medicine, Northwestern University, Chicago www.feinberg.northwestern.edu/news/2014/10/AoSC-update.html

Robert N. Harden:

Publications:

Manning, D.C., et al., *Lenalidomide for Complex Regional Pain Syndrome Type 1: Lack of Efficacy in a Phase II Randomized Study.* J Pain, 2014.

Mailis-Gagnon, A., et al., *Characteristics of Complex Regional Pain Syndrome in Patients Referred to a Tertiary Pain Clinic by Community Physicians, Assessed by the Budapest Clinical Diagnostic Criteria.* Pain Med, 2014.

Harden, R.N., C.E. Argoff, and D.A. Williams, *Intrathecal Opioids for Chronic Pain: A Call for Evidence.* Pain Med, 2014.

Gallizzi, M.A., et al., *Use of a Medication Quantification Scale for Comparison of Pain Medication Usage in Patients with Complex Regional Pain Syndrome (CRPS).* Pain Med, 2014.

Andres L Hendrix Jr:

Presentation:

New Lenox, IL (July 29, 2014)—The [Silver Cross Neuroscience Institute](#) will host a free *Stroke from the Heart* symposium on **Saturday, Sept. 6 for physicians, physician assistants, nurses, paramedics and allied health professionals** who are interested in increasing their knowledge of the management and treatment of acute stroke. September 2014

Allen Heinemann:

Peer reviewed publications:

Jensen SE, Butt Z, **Heinemann AW**, Magasi S, Cella D, Kuiken TA, Dumanian GA. Perceptions of the Risks and Benefits of Upper Limb Transplantation Among Individuals with Upper Limb Amputations. *Plastic and Reconstructive Surgery*, 134(5), 979-87.

Pretz C, Kozlowski A, Charlifue S, Chen Y-Y, **Heinemann AW**. Using Rasch Motor FIM Individual Growth Curves to Inform Clinical Decisions for Persons with Paraplegia. *Spinal Cord*, 52(9), 671-676.

Presentations:

1. **Heinemann AW**, Outcome measurement in USA: FIM, CARE tool and PROMIS, Keynote speaker, Regional Center of Knowledge Translation in Rehabilitation, Sunnaas Rehabilitation Hospital, Oslo, Norway, October 21, 2014.
2. **Heinemann AW**, Outcome measures in rehabilitation, The Rehabilitation Conference of the Southeastern Norway Regional Health Authority, Lillestrøm, Norway, October 22, 2014.
3. Lai J-S, Hammel J, **Heinemann AW**, Gray D, Magasi S, Tulsy DS, Hahn E, Garcia S, Jerousek S. Using the ICF's Environmental Factors Framework to Develop an Item Bank Measuring Services, Systems, and Policy Affecting Persons with Disabilities. 17 October 2014. Paper presented at the 21st Annual International Society of Quality of Life Research, 17 October 2014, Berlin, Germany.
4. **Heinemann AW**, Lai J-S, Gray D, Magasi S, Hammel J, Tulsy DS, Hahn E, Garcia S, Jerousek. Using the ICF's Environmental Factors Framework to Develop an Item Bank Measuring Built and Natural Environmental Features Affecting Persons with Disabilities. Paper presented at the 21st Annual International Society of Quality of Life Research, 17 October 2014, Berlin, Germany.
5. **Heinemann AW**, Miskovic A, Wong A, Gray D, Hollingsworth H, Lai J-S, Magasi S, Hammel J, Tulsy DS, Hahn E, Garcia S, Jerousek S. Do Environmental Factor Measures Identify Distinct or Common Elements? Paper presented at the 21st Annual International Society of Quality of Life Research, 17 October 2014, Berlin, Germany.
6. Gray D, Simon R, Perez B, **Heinemann AW**, Magasi S, Tulsy DS, Hammel J, Hahn E, Garcia S, Lai J-S, Jerousek S, Wong A. How Well Do Environmental Factor Measures Cover the International Classification of Functioning Disability and Health Domains? Paper presented at the 21st Annual International Society of Quality of Life Research, 17 October 2014, Berlin, Germany.
7. Tulsy DS, **Heinemann AW**, Semik P, Lai J-S, Carlozzi N, Kisala P. Development of an item bank to measure economic quality of life (ECQ) for individuals with disabilities. Paper presented at the 21st Annual International Society of Quality of Life Research, 16 October 2014, Berlin, Germany.

8. Tulskey DS, **Heinemann AW**. Development of a new measurement system to assess HRQOL in individuals with Spinal Cord Injury. Paper presented at the 21st Annual International Society of Quality of Life Research, 16 October 2014, Berlin, Germany.
9. **Heinemann AW**, Neumann HD, Etingen B, Miskovic A, Locatelli SM, Chen D, LaVela SL. Patient-centered care: Perceptions of individuals with spinal cord injuries. American Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada. Poster Presentation. October 10, 2014.
10. **Heinemann AW**, LaVela SL, Etingen B, Neumann HD, Miskovic A, Locatelli SM, Chen D. Perceptions of patient-centered care in individuals with spinal cord injuries/disorders. The International Spinal Cord Society Meeting. MECC, Maastricht, The Netherlands. Poster Presentation. September 4, 2014.
11. 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. Academy of Spinal Cord Injury Professionals. St. Louis, MO. Poster Presentation. September 1, 2014.
12. Chan L, **Heinemann AW**, Hoenig, H. How To Get Published: Authorship, Guidelines & Reviewing in Medical Rehabilitation. Symposium presented at the American Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada, October 9, 2014.
13. Seel R, **Heinemann AW**, Kean J, Chan L. Developing and Reporting Research Evidence That Makes a Difference in Systematic Reviews. Symposium presented at the American Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada, October 9, 2014.
14. **Heinemann AW**, Magasi S, Hammel J. Environmental Factors Item Development for Persons with Stroke, Traumatic Brain Injury and Spinal Cord Injury. Symposium presented at the American Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada, October 10, 2014.
15. **Heinemann AW**, Raad J, Segal N. Developing outcomes data management and reporting capacity for musculoskeletal rehabilitation programs. Symposium presented at the American Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada, October 10, 2014.
16. **Heinemann AW**, Magasi S, Raad J. Mediating Entities in the Knowledge Translation Cycle as Catalysts for Organizational Change Symposium presented at Congress of Rehabilitation Medicine Annual Conference. Toronto, ON, Canada, October 11, 2014.

Workshops:

Considerations in Evaluating the Effectiveness and Efficiency of Robot-Assisted Rehabilitation Therapy. Presented as part of the workshop "Maximizing clinical efficiency by harnessing technological advances," International Society of Physical and Rehabilitation Medicine, Cancun, Mexico, June 3, 2014.

Elevating the Quality of Disability and Rehabilitation Research: Mandatory Use of the Reporting Guidelines. Presented as part of the workshop, "Meet the Editors." International Society of Physical and Rehabilitation Medicine, Cancun, Mexico, June 4, 2014.

Lectures:

New Approaches to Measuring Quality of Life following Traumatic Brain Injury. RIC Academy, Chicago, IL, June 6, 2014.

Measuring, Modeling, and Managing Rehabilitation Outcomes. Mediware Annual Conference, Phoenix, AZ, June 9, 2014.

Insider Perspective on Strategies to Improve Research Capacity-Building in Disability and Rehabilitation, Keynote speaker at the National Institute on Disability and Rehabilitation Research-sponsored Advanced Rehabilitation Research Training and Switzer Fellowship Summit, Arlington, VA, July 28, 2014.

Evidence, Theory, and Experience: Implementing Evidence in to Rehabilitation Practice (with Jennifer Moore and Jason Raad), RIC Grand Rounds, September 10, 2014.

Grant submitted:

Rick Hansen Institute - Implementing SCI-QOL into Clinical Practice: Enhancing Patient Outcomes using Common Data Elements and Implementation Science (PI)
Center of Excellence for PT Research

Grants in development:

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

Professional Service:

International Spinal Cord Society, Member, 2014-

Expert Panel Member, American Physical Therapy Association's Clinical Practice Guideline Panel: Core Set of Outcome Measures for Patients with Neurologic Conditions. May, 2014-December, 2016.

Member, Institute of Medicine Standing Committee on Medical Experts to Assist Social Security on Disability Issues, 2014- present

Christina Marciniak

Liu J1, Li X, **Marciniak C**, Rymer WZ, Zhou P. *Extraction of neural control commands using myoelectric pattern recognition: a novel application in adults with cerebral palsy*. Int J Neural Syst. 2014 Jul 2:1450022. [Epub ahead of print]

Abstracts:

Elie Paul Elovic, Michael C. Munin, Petr Kaňovský, Angelika Hanschmann, Reinhard Hiersemenzel, **Christina Marciniak**. *Topline results from a randomized, placebo-controlled, Phase III study investigating the safety and efficacy of incobotulinumtoxinA in treating post-stroke spasticity of the upper limb*. PMR Volume 6 Issue 9. Supplement September 2014. Page S324

Ashwin N. Babu, MD, Leda Ghannad, MD, Richard Burnstine, MD, Susan Keeshin MD, **Christina Marciniak**, MD. *Unusual EMG Findings Associated with Colchicine Neuromyopathy: A Case Report*. PMR Volume 6 Issue 9. Supplement September 2014. Page S210-211

Invited Lectures and Workshops:

Botulinum Toxins in the Treatment of Spasticity. Rush Regional Botulinum Toxin Course for Neurology and PMR Residents, 09/13/2014

Patient Assessment for Spasticity Interventions – Workshops Rush Regional Botulinum Toxin Course for Neurology and PMR Residents, 09/13/2014

Exercise and Rehabilitation in Parkinson's Disease. Northwestern Medicine Parkinson's Disease Symposium, 10/11/2014

Exercise in Parkinson's disease: what does the data tell us about neuroprotection and neurorestoration? AAPMR Annual Meeting Course Beyond L-Dopa: Exercise as Treatment in Parkinson Disease, 11/13/2014

Oral Research Presentations:

Osteoporosis in Adults with Cerebral Palsy, Oral Research Presentation, AAPMR Annual Meeting San Diego CA. November 14, 2014

Poster Research Presentations:

J. M. Gracies¹, A. Brashear², P. McAllister³, H. Walker⁴, **C. Marciniak**⁵, F. Gul⁶, S. Edgley⁷, P. Dysport[®], Picaut⁸ *Randomized, double-blind placebo-controlled Phase III study of abobotulinumtoxinA, in the treatment of adults with upper limb spasticity. AAPMR Annual Meeting San Diego CA, November 15, 2014.*

Course Director:

Let's Talk: Update on Aphasia. AAPMR Annual Meeting. San Diego CA. November 15, 2014

Committee Updates:

American Board of Electrodiagnostic Medicine – Credentials Committee Member

Promoted to Chairperson of Panel A of the Northwestern IRB

Debjani Mukherjee:

Publications:

Novotny, W.E., Perkin, R.M., **Mukherjee, D.** & Lantos, J.D. **Ethics Rounds: Mechanical Ventilation for a Child with Quadriplegia.** *Pediatrics.* **2014 Sep; 134(3):** 593-597.doi: 10.1542/peds.2013-4161.

ISSN: 00314005

Presentations:

Wocial, L.D., Anderson, L.A., Dudzinski, D. Pearlman, R.A. & **Mukherjee, D.** **"Ethics Facilitation and Documentation in Case Consultations: An Interactive Workshop."** Invited workshop, American Society for Bioethics and Humanities, 16th annual meeting. San Diego, CA. October 16-19, 2014.

Mukherjee, D., Francis, L. Peace, W.J. & Watson, K. **"Autonomy Cuts Both Ways: Disability and End-of-Life Decision-Making."** Panel presentation at American Society for Bioethics and Humanities, 16th annual meeting. San Diego, CA. October 16-19, 2014.

Zev Rymer (with other PM&R Faculty):

Publications:

Published "Locomotor training modifies soleus monosynaptic motoneuron responses inhuman spinal cord injury" by Smith AC, Rymer WZ, Knikou M in *Exp Brain Res*. PMID: 25205562

Published "Control of motor unit firing during step-like increases in voluntary force" by Hu X, Rymer WZ, Suresh, NL in *Front Hum Neurosci*. PMID: 25309395

Published "Anomalous EMG-force relations during low-force isometric tasks in hemiparetic stroke survivors" by Suresh NL, Concepcion, NS, Madoff J, Rymer WZ in *Exp Brain Res*. PMID: 25224701

Presentations:

Lecture at Hand, Brain and Technology Conference in Ascona, Switzerland, 09/08/2014

Lecture at SSNR2014 on "How to assess and manage spasticity during rehabilitation" in Parador de Baiona, Spain, 09/16/2014

Invited talk at WeRob on "How to best use exoskeletons" with Dr. Arun Jayaraman, 09/17/2014

Gayle Spill:

Panel Presentation at the Annual American Society of Bioethics and Humanities, San Diego, CA, October 2014.

Preya Tarsney:

Kondrat, A, Spill, G., **Tarsney, P.** & Swirsky, E. "Weighing In or Wading In: The Role of a Clinical Ethicist in a Health Care Organization." Panel presentation at American Society for Bioethics and Humanities, 16th annual meeting. San Diego, CA. October 16-19, 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*. 2014; 95:2104-51.

Presentations:

Gifford D, Feldman R, Gage B, McMullen T. **Deutsch A**. Skilled Nursing Facility Prospective Payment System Part A Rehabilitation Therapy: Addressing the Controversy & Redesigning Therapy Payment. National Harbor, MD. October 5, 2014.

Neumann H, **Deutsch A**, Backus D, Shaewitz A. Navigating US Post-Acute Care Policy: Where Do I Begin? American Congress of Rehabilitation Medicine. Toronto, Ontario, October 10, 2014.

French J, Cowan RE, Simcox S, Castel C, Schmidt-Read M, **Deutsch A**, Backus D, Murray J. The Role of Research in Reimbursement. American Congress of Rehabilitation Medicine. Toronto, Ontario, October 10, 2014.

Deutsch A, Resnik L, Neumann H, Ottenbacher KJ. Best Practices for Reporting Rehabilitation Research . American Congress of Rehabilitation Medicine. Toronto, Ontario, October 10, 2014.

Pardasaney P, Pope G, Amico P, Dever J, **Deutsch A**, Gordon T, West P, Meadow A. Outpatient Therapy Expenditures in the Medicare Population: Influence of Diagnosis and Functional Mobility. Poster Presentation. American Congress of Rehabilitation Medicine. Toronto, Ontario, October 11, 2014.

Leland NE, Roberts P, **Deutsch A**, Sidelinker JC, Ensuring the Delivery of High-Quality Fall Prevention: How Rehabilitation Professionals Engage in Quality Improvement. American Congress of Rehabilitation Medicine. Toronto, Ontario, October 11, 2014.

Clohan D, **Deutsch A**, Zollar C. The Present and Future of Quality Measures and How They Impact Your Practice in the Rehabilitation Hospital Setting. American Academy of Physical Medicine and Rehabilitation Annual Assembly. San Diego, CA. November 14, 2014

Linda Ehrlich-Jones:

Peer reviewed publications:

Semanik P, Lee J, Song J, Chang R, Sohn M-W, **Ehrlich-Jones L**, Nevitt M, Kwoh K, Ainsworth B, & Dunlop D. (in press). Accelerometer monitored sedentary behavior and observed physical function loss. *American Journal of Public Health*.

Chang RW, Semanik P, Lee J, Feinglass J, **Ehrlich-Jones L**, & Dunlop D. (in press). Improving physical activity in arthritis clinical trial (IMPAACT): Study design, rationale, recruitment, and baseline data. *Contemporary Clinical Trials*.

Presentations:

Song J, Lindquist LA, Chang RW, Semanik PA, **Ehrlich-Jones LS**, Lee J, Sohn M-W, & Dunlop DD. Sedentary Behavior is a Distinct Factor from Low Level of Moderate-to-Vigorous Activity for Incident Frailty. American College of Rheumatology Annual Scientific Meeting, Boston, MA, November 17, 2014.

Lee j, Song J, Ainsworth BE, Chang RW, **Ehrlich-Jones L**, Pellegrini CA, Semanik PA, Sharma L, & Dunlop DD. Sedentary Time is an Independent Risk Factor for Incident Disability. American College of Rheumatology Annual Scientific Meeting, Boston, MA, November 18, 2014.

Semanik PA, Lee JL, Song J, Chang RW, Sohn M-W, **Ehrlich-Jones LS**, Nevitt MM, Kwoh CK, &

Dunlop DD. The Association Between Accelerometer Monitored Sedentary Behavior and Observed Physical Function Loss. American College of Rheumatology Annual Scientific Meeting, Boston, MA, November 18, 2014.

Grants submitted:

NIH/NINR R21 Ehrlich-Jones (Principal Investigator)
Smart-FIT: Smartphone Fatigue Innovations Trial in Lupus

Grants in development:

NIH/NIAMS U01Ehrlich-Jones/Ramsey-Goldman (Principal Investigators)
Activity and Nutrition Trial in Lupus to Energize and Renew (ANTLER)

Honors:

2014 Addie Thomas Service Award from the Association of Rheumatology Health Professionals

Ongoing service:

Co-Chair WFO, Northwestern University
Rheumatology Research Foundation, Member, Board of Directors

Annie Simon:

Publications:

Simon AM, Ingraham KA, Fey NP, Finucane SB, Lipschutz RD, Young AJ and Hargrove LJ. Configuring a powered knee and ankle prosthesis for transfemoral amputees within five specific ambulation modes. PLOS One, 9(6):e99387, 2014.

Shirota C, **Simon AM**, and Kuiken TA. Trip recovery strategies following perturbations of variable duration. Journal of Biomechanics, 47(11):2679-84, 2014.

Fey NP, **Simon AM**, Young AJ and Hargrove LJ. Controlling knee swing initiation and ankle plantarflexion with an active prosthesis on level and inclined surfaces at variable walking speeds. IEEE Journal of Translational Engineering in Health and Medicine, 2014.

Conference Abstracts:

Fey NP, Simon AM, Hargrove LJ. Generalizability of Control for a Powered Knee and Ankle Prosthesis on Level and Inclined Surfaces at User-Modulated Walking Speeds. Biomedical Engineering Society (BMES) 2014 Annual Meeting, San Antonio, TX, October, 2014.

Presentations:

Department of Physical Medicine and Rehabilitation Grand Rounds, Medical College of Wisconsin, "Development of a neural interface for powered lowered limb prosthetics", Milwaukee, WI.

Department of Rehabilitation Sciences, University of Pittsburgh, Pittsburgh, PA.

ADJUNCT / OTHER FACULTY

Rosemarie King:

Conference:

AHA Sessions Cardiovascular Nursing Clinical Symposium: Seminar Moderator: Recognition and Risk of Depression in Stroke Survivors and their Caregivers. Nov. 18, 2014, Chicago, IL.

Jacqueline D Neal:

Academics:

Accepted to Northwestern Searle Teaching Fellowship for this academic year.

Theresa Pape:

Grant Proposal "Cross-cutting TMS Technology with Advanced Imaging for NeuroRehabilitation Treatment Applications", Department of Defense, Defense University Research Instrumentation Program.

NORTHWESTERN UNIVERSITY PROSTHETIC - ORTHOTIC CENTER

Publications:

Fatone S and Malas B (2015) Orthotic management in stroke. In: Stein J, Harvey RL, Macko RF, Winstein CJ, Zorowitz RD (eds.) Stroke Recovery and Rehabilitation. 2nd edition. Demos Medical Publishing; New York, NY.

Tucker K, Johnson WB, **Gard S, Fatone S** (2014) Shape&Roll Foot Jr. Fabrication Manual. Northwestern University Prosthetics-Orthotics Center, Chicago IL.

<http://www.nupoc.northwestern.edu/docs/research/RERC/SRFootJrManual.pdf>

Fatone S, Johnson WB, Kwak S Using a 3D model of the AFO-Leg to explore the effects of combinations of axis misalignments. *Prosthetics Orthotics International* (in press).

Fatone S, Stine R. Capturing quality clinical videos for 2D motion analysis. *Journal of Prosthetics and Orthotics* (in press).

Boutwell E, Stine R, and Gard, S. A novel *in vivo* impact device for evaluation of sudden limb loading response. *Medical Engineering & Physics* (in press).

Presentations:

Shurr D, Dolan L, Davis L, **Robinson C.** "Applying the Evidence of Orthotic Management of AIS into Clinical Practice," Presented at the American Orthotic Prosthetic Association National Assembly, Las Vegas, NV, September 5, 2014.

Brinkmann J, Robinson C, Bondre N. "Generational differences in the O&P Workplace," Presented at the American Orthotic Prosthetic Association National Assembly, Las Vegas, NV, September 5, 2014.

Brinkmann, J, “New Perspectives in Functional Gait Biomechanics.” Presented at the Northern Plains Chapter of the American Academy of Orthotists and Prosthetists, held in Vadnais Heights, MN September 25-26, 2014.

Wu, Y, “Dilatancy Plaster-less P&O Technologies.” Presented at the Northern Plains Chapter of the American Academy of Orthotists and Prosthetists, held in Vadnais Heights, MN September 25-26, 2014.

Wong AWK, Heinemann AW, Ehrlich-Jones L, Connelly L, Semik P, **Fatone S**. “Comparison of the Orthotics and Prosthetics Users’ Survey (OPUS) and Orthotics and Focus on Therapeutic Outcomes (FOTO) Functional Status Measures for Persons with Lower Limb Amputation.” Presented at the American Congress of Rehabilitation Medicine, Toronto, ON, Canada, October 7-11, 2014.

Robinson C, Davis L. “Orthotic Management of Adolescent Idiopathic Scoliosis – One Day Certificate Program,” Presented at the American Academy of Orthotists & Prosthetists Certificate Program, Chicago, IL October 11, 2014.

Wu Y, Conner L, Robinson C. “Low Cost Dilatancy for the Manufacture of Foot Orthoses - Workshop,” Presented at the Northwestern University P&O Center, October 25, 2014.

Nepomuceno A, Major MJ, Stine R, Gard SA. “Effect of Ankle Immobilization on Able-Bodied Gait to Model Bilateral Transtibial Amputee Gait.” Presented at the Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 22 - 25, 2014.

Dr. Stefania Fatone “Improving the gait of partial foot amputees: emerging evidence in support of above-ankle interventions.” Invited Presentation, Norwegian Association of Prosthetists and Orthotists Annual Meeting, Bergen, Norway, November 1-2, 2014.

Major MJ. “Clinical and Biomechanical Measures for Evaluating Postural Control in Individuals with Lower Limb Amputation.” Presented at the Jesse Brown VA Medical Center Research Seminar, Chicago, IL, November 14, 2014.

McGovern D, **Fatone S**. “Evaluating the effects of ankle-foot-orthosis footwear-combinations (AFO-FCs) in children with Cerebral Palsy.” Presented at the Midwest Chapter of the American Academy of Orthotists and Prosthetists, One Day Fall Symposium, Hickory Hills, IL, November 15, 2014.

Boutwell E. “Effect of prosthesis stiffness on impact force during *in vivo* step loads and gait,” Presented at the Midwest Chapter of the American Academy of Orthotists and Prosthetists, One Day Fall Symposium, Hickory Hills, IL, November 15, 2014.

Borrenpohl D, **Brinkmann J** “The Long Term Effects of Gait Deviations.” Presented at the Midwest Chapter of the American Academy of Orthotists and Prosthetists, One Day Fall Symposium, Hickory Hills, IL, November 15, 2014.

Fritschen S, Mott B, **Fatone S**. "Clinical outcome measure in Orthotics & Prosthetics." Presented at the Midwest Chapter of the American Academy of Orthotists and Prosthetists, One Day Fall Symposium, Hickory Hills, IL, November 15, 2014.

Cerutti, A, Bondre N, Major MJ. "Accelerometer-based systems used to collect patient gait data in and out of the clinic." Presented at the Midwest Chapter of the American Academy of Orthotists and Prosthetists, One Day Fall Symposium, Hickory Hills, IL, November 15, 2014.

Meetings:

John Brinkmann and Chris Robinson attended the American Orthotic & Prosthetic Association National Assembly in Las Vegas Nevada, September 4-7, 2014.

Dr. Steven Gard attended the Lippincott Williams & Wilkins Journal Symposium in Philadelphia, PA, September 18-19, 2014.

Dr. Yeongchi Wu was an invited speaker at the VAMC in Minneapolis, MN, September 26, 2014, where he toured the biomedical engineering research laboratory of Andrew Hansen, PhD. At the VAMC, Dr. Wu presented "Post-operative & Pre-prosthetic Management of Residual Limbs" and "Dilatancy Prosthetic-Orthotic Technology" to medical and engineering staff.

Dr. Stefania Fatone attended the Archives of Physical Medicine and Rehabilitation (APMR) Editorial Board meeting held on October 8, 2014. The APMR Editorial Board met in conjunction with the American Congress of Rehabilitation Medicine (ACRM) 91st Annual Conference held October 7-11, 2014 in Toronto, Canada.

Defenses:

Erin Boutwell, PhD, successfully defended her doctoral dissertation, "The Effect of Systematic Variation to Transtibial Prosthesis Stiffness on Impact Loading Mechanics," in Biomedical Engineering at Northwestern University June 26, 2014.

Laboratory Visits/Events:

Matt Quigley, a recent graduate of the Masters in Clinical Prosthetics and Orthotics program at La Trobe University in Melbourne Australia, joined NUPOC as a Research Extern from October 1 to November 30, 2014. Mr. Quigley is working under the guidance of Dr. Stefania Fatone helping with focus groups to be held as part of the newly funded NIH project "Interface Monitoring System to Promote Residual Limb Health" on which Dr. Fatone is Co-PI.

Appointments:

Lilly Tran, MS, has joined NUPOC as a Research Engineer. She completed her master's degree at Columbia University in Mechanical Engineering with a focus in biomechanics; and conducted her undergraduate work in Mechanical Engineering at Syracuse University. She will contribute to multiple projects led by Drs. Fatone, Gard and Major.

Michael Cavanaugh, CPO /L, has joined the NUPOC teaching faculty as Lecturer. Mr. Cavanaugh is a graduate of NUPOC prosthetics and orthotics programs and an ABC-Certified Prosthetist Orthotist, licensed to practice in the State of Illinois. He brings 8 years of clinical experience, along with his background as an industrial engineer prior to entering the P&O field. In addition to course design and teaching experience at the University of Iowa, Mr. Cavanaugh has developed individualized teaching methods for children and young adults with autism.

Grant Submissions:

Stefania Fatone, PhD, was PI on a CDMRP Peer Reviewed Orthopedic Research Program Expansion Award proposal titled “Functional performance evaluation of the northwestern university flexible subischial vacuum (NU-FlexSIV) socket for persons with transfemoral amputation” submitted on October 24, 2014. **Drs Steven Gard** and Thomas Schnitzer are co-investigators on this proposal.

Stefania Fatone, PhD, was PI on a Peer Reviewed Orthopedic Research Program Idea Development Award proposal titled “No longer smooth: introducing striations into prosthetic socket construction to improve suspension, rotation, fit and comfort” submitted on October 24, 2014. **Dr Steven Gard** is a co-investigator on this proposal.

Stefania Fatone, PhD, was a co-investigator on an NIH R03 proposal titled “Effects of surgery on gait and balance in patients with cervical spondylotic myelopathy” submitted on October 16, 2014. Nader Dahdaleh, MD, from the Department of Neurological Surgery is the PI

Steven Gard, PhD, and **Yeongchi Wu, MD**, were co-PI’s on a proposal entitled, “Development of a Dilatancy Orthotic Fabrication System for Idiopathic Scoliosis” that was submitted to the Institute for Sustainability and Energy at Northwestern (ISEN) on November 3, 2014.

Letters of Intent:

Gard, S. “Development and Evaluation of a Shock Absorbing Prosthetic Ankle Mechanism.” Submitted to the Department of Veterans Affairs, Rehabilitation Research & Development Service, November 1, 2014.