

Scholarly Activities
Department of Physical Medicine and Rehabilitation
March – June 2014

REGULAR FACULTY

Brenna Argall:

M. Derry and **B.D. Argall**. “Extending Myoelectric Prosthesis Control with Shapable Automation: A First Assessment.” In Proceedings of the International Conference on Human-Robot Interactions, Blieiefeld, Germany, March 2014

Presented at the 2nd USC Symposium on the Future of Robotics, April

James Atchison:

2013 Clinical and Rehabilitative Medicine Research Program (CRM RP-PM1), Peer Review Meeting- April 2-3, 2014. Panel Member/ Scientific Reviewer. (Government Project)

March 2014 AAPM Meeting- Phoenix, AZ -

3/7/14- Session: Management of Knee Osteoarthritis: What is Missing From the Treatment Guidelines. Presentation Title: Applying Interdisciplinary Principles of Pain Management to Persons with Knee OA.

3/8/14- Session: Updates in Chronic Pain Management in the Adolescent Population. Presentation Title: What Not to Miss When the Young Patient Presents with Low Back Pain.

3/9/14- Session: Physician Examination and Differentiation of Lumbar Spine, SI Joint and Hip Joint Problems. Presentation Title: Osteopathic Manipulation (Muscle Energy) Techniques for Lumbar, Sacral and Pelvis Dysfunction: Demonstration

Karina Bouffard:

Lecture on Cancer Pain, RIC Residents, April 16

Appointed Board Member, Midwest Pain Society, April 2014

Appointed Co-editor, Midwest Pain Society Newsletter, April 2014

Nenad Brkic:

Lectures:

PM&R Residents – Agitation management after TBI

NMH Medical Students – Overview of TBI (3 presentations December – March)

L. R. Cherney

Publications:

Cherney, L. R., Kaye, R. C., & Van Vuuren. (2014). Acquisition and Maintenance of Scripts in Aphasia: A Comparison of Two Cuing Conditions. *American Journal of Speech Language Pathology*. doi: 10.1044/2014_AJSLP-13-0097. [Epub ahead of print]

Presentations:

Babbitt, E. M., Cherney, L. R. & Worrall, L. Outcomes from an intensive comprehensive aphasia program (ICAP): A retrospective look. Poster presentation at the Clinical Aphasiology Conference, St. Simon's Island, GA (May, 2014).

Cherney, L. R., Rogers, L., Pitts, L., Wang, X., Hurwitz, R., Babbitt, E. M., Harvey, R., & Parrish, T. Transcranial direct current stimulation and aphasia treatment: A pilot study of anodal, cathodal and sham stimulation. Platform presentation at the Clinical Aphasiology Conference, St. Simon's Island, GA (May, 2014).

Kaye, R. C., Lee, J. B., & **Cherney, L. R.** Impact of personalization on acquisition and generalization of Script Training: A preliminary analysis. Poster presentation at the Clinical Aphasiology Conference, St. Simon's Island, GA (May, 2014).

Meulenbroek, P., & Turkstra, L. Communication deficits associated with separation of competitive work in persons with TBI. Presented at the *Ninth World Congress on Brain Injury*, San Francisco, CA (March, 2014).

Pitts, L.L. Swallowing Outcome Measures: Advancing Practice. Seminar presented at the Iowa Conference of Communicative Disorders. Cedar Falls, IA (March, 2014).

Pitts, L.L. Evaluation and Treatment of Parkinson's Disease-related Dysphagia. Seminar presented at the Iowa Conference of Communicative Disorders. Cedar Falls, IA (March, 2014).

Pitts, L.L. & Stierwalt, J.A.G. Percentage of Maximum Isometric Tongue Pressure as a Clinical Indicator of Mild Dysphagia in Parkinson's Disease. Technical presentation at the Dysphagia Research Society Annual Meeting. Nashville, TN (March, 2014).

Pitts, L.L., Rathinasamy, M., Newman, H., Oswald, M.C., Cherney, L.R., & Logemann, J.A. Lingual-Palatal Pressure Intervention for Parkinson's Disease-Related Dysphagia: A Single Subject Treatment Study. Technical presentation at the Dysphagia Research Society Annual Meeting. Nashville, TN (March, 2014).

Logemann, J.A., Pauloski, B., **Pitts, L.L.**, Larsen, K., & Simuni, T. Agreement between Patients with Parkinson's disease and their Caregivers on Subjective and Objective Measures of Swallowing Disorders. Poster presentation at the Dysphagia Research Society Annual Meeting. Nashville, TN (March, 2014).

Deborah Gaebler:

Sukai-Moulton T, Clancy T, Zhang LQ, **Gaebler-Spira D**: “Clinical Application of a Robotic Ankle Training Program for Cerebral Palsy Compared to the Research Laboratory Application: Does it Translate to Practice?” Archives of Physical Medicine and Rehabilitation, in press

He Y, Brunstrom-Hernandez JE, Thio LL, Lackey S, **Gaebelr-Spira D**, Kuroda MM, Stashinko E, Hoon AH, Vargus-Adams J, Stevenson RD, Lowenhaupt S, McLaughlin JF, Christensen A, Dosa NP, Butler M, Schwabe A, Lopez C, Roge D, Kennedy D, Tilton AH, Krach LE, Lewandowski A, Jusko WJ. Population Pharmacokinetic Analysis of Oral Baclofen in Pediatric Patients with Cerebral Palsy. *J. Pediatr.* 2014 Mar 4. pii: S0022-3476(14)00057-2. doi: 10.1016/j.jpeds.2014.01.029. [Epub ahead of print]

Marciniak C, O’Shea S, Lee J, Jesselson M, Dudas-Sheehan D, Beltran E, **Gaebler-Spira D**. Urinary Incontinence in Adults with Cerebral Palsy: Prevalence, Type, and Effects on Participation. *Journal of PMR* 2014;6:110-120

Eulah J, **Gaebler-Spira D**. Homogeneity Of Solid Ankle Foot Orthosis Design Among A Heterogenous Group Of Children With Cerebral Palsy - Anaheim, CA - March 5-8, 2014

Ghannad L, Pavone L, **Gaebler-Spira D**. Prevalence of Vitamin D Deficiency in Children and Young Adults with Disability. Academic Academy of Physiatry – Nashville, TN, February 27, 2014

Katherina K.Y. Hauner:

Hauner, K. K., Revelle, W., & Zinbarg, R. E. (in press). A latent variable model approach to estimating systematic bias in the oversampling method. *Behavior Research Methods*. PMID: 24142836

Co-presented lecture with Dr. Jordan Grafman at the Annual Interdisciplinary Stroke Course at RIC on April 11, 2014. Title of lecture: Neuropsychological Consequences of Stroke

Grants:

Julius N. Frankel Foundation (Co-I Hauner) 03/01/14 – 02/28/18
Effects of Prefrontal Transcranial Direct Current Stimulation on Cognitive Control
The major goal of this grant is to use transcranial direct current stimulation (tDCS) to target and enhance activity in the prefrontal cortex, in order to determine if increased neuronal excitability in this region of the brain will lead to reductions in impulsive behavior.

Allen Heinemann:

Kalpajian, C.Z., McCullumsmith, C.B., Fann, J.R., Richards, J.S., Stoelb, B.L., **Heinemann, A.W.**, Bombardier, C.H. Post-traumatic growth following spinal cord injury. *The Journal of Spinal Cord Medicine*, 37(2), 2014, 218-225

Wong, A. W. K., **Heinemann, A. W.**, Wilson, C. S., Neumann, H., Fann, J. R., Tate, D. S., Richards, J. S., & Bombardier, C. H. (in press). Predictors of participation enfranchisement following spinal cord injury: The mediating role of depression and moderating role of demographic and injury characteristics. *Archives of Physical Medicine and Rehabilitation*.

Wong, A. W. K., **Heinemann, A. W.**, Miskovic, A., Semik, P., & Snyder, T. M. Feasibility of computerized adaptive testing for collection of patient-reported outcomes following inpatient rehabilitation. *Archives of Physical Medicine and Rehabilitation*, 2014; 95:882-91.

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*, in press.

Tulsy DS, Kisala PA, Lai JS, Carlozzi N, Hammel J, **Heinemann AW**. Developing an Item Bank to Measure Economic Quality of Life for Individuals with Disabilities *Archives of Physical Medicine and Rehabilitation*, in press.

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*, in press.

Pretz C, Kozlowski A, Charlifue S, **Heinemann AW**, Chen Y-Y. Using Rasch Motor FIM Individual Growth Curves to Inform Clinical Decisions for Persons with Paraplegia. *Spinal Cord*, in press.

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

Keynote Speaker, University of Wisconsin, Milwaukee College of Health Sciences Research Day, May 2, 2014.

Eric Larson:

Zollman, FS, Starr, C, Kondiles, B, Cyborski, C, Larson, EB, (2014). The Rehabilitation Institute of Chicago Military Traumatic Brain Injury Screening Instrument: Determination of sensitivity, specificity and predictive value. *Journal of Head Trauma Rehabilitation*, 29(1), 99–107.

Larson, E., Zollman, F, Kondiles, B. & Starr, C. (2013). Memory deficits, postconcussive complaints and posttraumatic stress disorder in a volunteer sample of veterans. *Rehabilitation Psychology*. 58, 245-252

Dvorkin, A.Y., Ramaiya, M., Larson, E. B., Zollman, F. S., Hsu, N., Pacini, S., Shah, A. Patton, J.L. (2013) A “virtually minimal” visuo-haptic training of attention in severe traumatic brain injury. *Journal of NeuroEngineering and Rehabilitation*, 10:92.

Dvorkin, A.Y., Pacini, S., Hsu, N., & Larson, E.B. (2013). Treatment challenges with profound behaviour disturbance after traumatic brain injury: A case report. *Brain Injury*. 27(7–8): 957–961.

Larson, E.B., Feigon, M., Gagliardo, P., & Dvorkin, A.Y. (In press). Virtual reality and cognitive rehabilitation: A review of current outcome research. NeuroRehabilitation.

Presented" PTSD and Criminal Law: Background. Invited Presentation at The Veterans Club, Northwestern University Law School, Chicago, IL.

Starr, C. & Larson, E. (2014). Sleep Disturbance and Acute Changes in Cognition among Veterans with PTSD and mTBI. Poster presented at the Tenth World Congress on Brain Injury, San Francisco, CA.

Novitski, J., Larson, E., & Starr, C. (2014). Relationship between Sleep Disturbance and Cognition in Veterans with mTBI and PTSD. Poster presented at the Annual Meeting of the International Neuropsychological Society, Seattle, WA.

Christina Marciniak:

Marciniak C, O'Shea SA, Lee J, Jesselson M, Dudas-Sheehan D, Beltran EJ, Gaebler-Spira DJ. Urinary Incontinence in Adults with Cerebral Palsy: Prevalence, Type and Effects on Participation. *PM&R* 2014, February 6(6) 110-120

Laura Miller:

Miller L.A. presented Outcome Measures: Patients with UL Amputation. *American Academy of Orthotists and Prosthetist 40th Annual Meeting*, Chicago, IL, February 26-March 1, 2014.

Miller L.A., Turner, K, Finucane, S, Stubblefield, KA, Kuiken TA (2014) A Comparison Of Direct Control And Pattern Recognition Control Of A Seven Degree-of-Freedom Hand Wrist System. *American Academy of Orthotists and Prosthetist 40th Annual Meeting*, Chicago, IL, February 26-March 1, 2014.

Lock BA, Hargrove, LJ, Turner K, Finucane S, and **Miller LA**. (2014) Measuring The At-Home Pattern Recognition Prosthesis Use During Wear Time For An Above Elbow TMR Patient. *American Academy of Orthotists and Prosthetist 40th Annual Meeting*, Chicago, IL, February 26-March 1, 2014.

Turner, K , Stubblefield, KA, Finucane, S, **Miller, LA** and Lock, BA, (2014) Training Pattern Recognition Control To Upper Limb Prosthetic Users. *American Academy of Orthotists and Prosthetist 40th Annual Meeting*, Chicago, IL, February 26-March 1, 2014.

Debjani Mukherjee:

"Disability, Ableism and Emotion." Invited plenary speaker at the 10th International Clinical Ethics and Consultation Conference: La Voix Du Patient - The Patient's Voice. Faculté Paris Descartes, Paris, France, April 2014

"Mindfulness and Self-Compassion in Health Care Providers". Grand Rounds. Department of Obstetrics and Gynecology, Truman Medical Center. Kansas City, MO. May 2014.

Matthew Oswald:

McCormick Z, **Oswald M.** Feasibility of Acute Inpatient Rehabilitation of the Advanced Heart Failure Patient on Continuous Inotropic Support: Two Cases. 2014 AAP Annual Meeting, Nashville, Tennessee, February 25 - March 1, 2014.

McCormick Z, **Oswald M.** Massive Rectus Abdominis Hematoma as a Complication of Prophylactic Subcutaneous Heparin in the Inpatient Rehabilitation Setting. 2014 AAP Annual Meeting in Nashville, Tennessee, February 25 - March 1, 2014.

Course instructor for MHB 410: The Practice of Medical Humanities and Bioethics. Northwestern University. Winter quarter 2014.

Lecture on Rehabilitation and Disability Ethics to the Mercy Children's Hospital Ethics Committee, Kansas City, MO. May 2014.

Eric Perreault:

[Corticomotor excitability of arm muscles modulates according to static position and orientation of the upper limb](#)

JPM Mogk, LM Rogers, **WM Murray**, EJ Perreault, JW Stinear
Clinical Neurophysiology

[Dealing with Target Uncertainty in a Reaching Control Interface](#)

EA Corbett, KP Körding, EJ Perreault
PLOS ONE 9 (1), e86811

[Evidence for reticulospinal contributions to](#)

CF Honeycutt, M Kharouta, EJ Perreault
J. Neurosci 34 (1), 275-281

Joel Press:

Presented: "Musculoskeletal Examination of the Lumbar Spine and Pelvis" The Art and Science of the Physical Examination, March 7, 2014. North American Spine Society, Burr Ridge, Illinois

"Musculoskeletal Examination of the Cervical and Thoracic Spine" The Art and Science of the Physical Examination, March 7, 2014. North American Spine Society, Burr Ridge, Illinois

"The Past, Present, and Future of Musculoskeletal Rehabilitation" Guest Speaker, Research Day, Stanford University, Department of Physical Medicine and Rehabilitation. April 9th, 2014

David Ripley:

Ripley DL, Gerber D, Pretz C, Brenner L, Morey C, Harrison-Felix C, Wesnes K, Cusick C. Atomoxetine for Attention Deficits Following Traumatic Brain Injury: Results from a Randomized Controlled Trial. In Press, *Brain Injury*.

Ripley DL, Wierman M, Gerber D, Weintraub A, Newman J. Comment on The Decision to Provide Testosterone Supplementation to Patients with Traumatic Brain Injury. In Press, *PM&R*.

Ripley D. "Traumatic brain injury care and rehabilitation: The United States perspective." Keynote presentation, International Symposium for Traumatic Brain Injury, Royal Hospital for Neuro-Disability, London, UK. March 27, 2014.

Ripley D "Atomoxetine for Attention Deficits Following Traumatic Brain Injury: Results from a Randomized Controlled Trial." Platform Presentation. International Brain Injury Association Conference. San Francisco, CA, March 22, 2014.

Makovitch S, List C, Sarkar K, **Ripley D**. "Neuroleptic Malignant Syndrome after a Single dose of Haloperidol following TBI: A Case Report" Poster Presentation. International Brain Injury Association Conference. San Francisco, CA, March 20, 2014.

Zev Rymer (with other PM&R Faculty):

[Motor unit firing rate patterns during voluntary muscle force generation: a simulation study](#)

X Hu, WZ Rymer, NL Suresh
Journal of neural engineering 11 (2), 026015, 2014

[Accuracy assessment of a surface electromyogram decomposition system in human first dorsal interosseus muscle](#)

X Hu, WZ Rymer, NL Suresh
Journal of neural engineering 11 (2), 026007, 2014

[Asymmetries in vestibular evoked myogenic potentials in chronic stroke survivors with spastic hypertonia: evidence for a vestibulospinal role](#)

DM Miller, CS Klein, NL Suresh, WZ Rymer
Clinical Neurophysiology, 2014

[Finger-thumb coupling contributes to exaggerated thumb flexion in stroke survivors.](#)

DG Kamper, HC Fischer, MO Conrad, **JD Towles**, WZ Rymer, ...
Journal of neurophysiology, 2014

[Quantifying the Deep Tendon Reflex Using Varying Tendon Indentation Depths: Applications to Spasticity](#)

MK Chardon, WZ Rymer, NL Suresh
Neural Systems and Rehabilitation Engineering, IEEE Transactions on 22 (2 ...

[Disturbances of Motor Unit Rate Modulation are Prevalent in Muscles of Spastic-Paretic Stroke Survivors.](#)

CJ Mottram, **CJ Heckman**, RK Powers, WZ Rymer, NL Suresh
Journal of neurophysiology, 2014

[A Clinically Applicable Approach for Detecting Spontaneous Action Potential Spikes in Amyotrophic Lateral Sclerosis With a Linear Electrode Array](#)

F Jahanmiri-Nezhad, X Li, PE Barkhaus, WZ Rymer, P Zhou
Journal of Clinical Neurophysiology 31 (1), 35-40, 2014

[Anodal Transcranial Direct Current Stimulation Alters Elbow Flexor Muscle Recruitment Strategies](#)

C Krishnan, R Ranganathan, SS Kantak, **YY Dhafer**, WZ Rymer
Brain Stimulation, 2014

[Characterizations of Reflex and Nonreflex Changes in Spastic Multiple Sclerosis](#)

LQ Zhang, K Chen, SH Kang, L Wang, **J Sliwa**, BA Cohen, WZ Rymer
Journal of neuroscience methods, 2014

[Daily intermittent hypoxia enhances walking after chronic spinal cord injury A randomized trial](#)

HB Hayes, **A Jayaraman**, M Herrmann, GS Mitchell, WZ Rymer, ...
Neurology 82 (2), 104-113, 2014

[Suppression of stimulus artifact contaminating electrically evoked electromyography](#)

J Liu, S Li, X Li, C Klein, WZ Rymer, P Zhou
NeuroRehabilitation, 2014

Other activities:

- Neilsen Foundation Study Section Review, March 31-April 1, Hollywood FL
- Bloorview Research Institute External Review, May 14-16, Toronto, Ontario
- K12 RRCD Program, 2014 Annual Advisory Board Meeting, May 19-20, Galveston TX
- Neural Control of Movement (NCM), April 21-24, Amsterdam, Netherlands

Thomas Schnitzer:

Grant Award from the Department of Defense (SC120125): Prevention of Bone Loss after Acute SCI by Zoledronic Acid: Durability, Effect on Bone Strength and Use of Biomarkers to Guide Therapy

[Femoral Strength in Patients with Acute Spinal Cord Injury](#). Edwards WB, **Schnitzer TJ**, Troy KL. J Bone Miner Res. 2014 Mar 27. doi: 10.1002/jbmr.2227. [Epub ahead of print]

[Efficacy and safety of tanezumab monotherapy or combined with non-steroidal anti-inflammatory drugs in the treatment of knee or hip osteoarthritis pain](#). **Schnitzer TJ**, Ekman EF, Spierings EL, Greenberg HS, Smith MD, Brown MT, West CR, Verburg KM. Ann Rheum Dis. 2014 Mar 13. doi: 10.1136/annrheumdis-2013-204905. [Epub ahead of print]

Steven Stanos:

Lecture: 3/19 : Worker's Comp (advanced series, attended by PGY3 and PGY4;
3/26 : Opioids I (advanced series)

March 2014 AAPM Meeting – Phoenix, AZ

3/6/14- Session: Essential Tools for Treating the Patient in Pain: What Every Primary Care & Pain Specialist Needs to Know- Day 2. Presentation Title #1: Cervical and Lumbar Spine Pain:

Assessment and Physical Exam. Presentation Title #2: Shoulder and Hip Pain: Assessment and Physical Exam.

3/9/14- Advancing the Ethics of Pain Management

3/11/14- Grand Rounds- New Jersey, Saint Peters University Hospital

Title: How about: Improving outcomes for chronic pain: Functional restoration, an interdisciplinary approach.

3/21/14 Speaker: Pri-Med Annual Conference program entitled, "*SAFE Opioid Prescribing/Strategies. Assessment. Fundamentals. Education*"
Houston, TX

3/27/14 Speaker: Speaker: Pri-Med Annual Conference program entitled, "*SAFE Opioid Prescribing/Strategies. Assessment. Fundamentals. Education*", Anaheim, CA

4/24/14 Speaker: Challenges in the Assessment & Treatment in Chronic Pain . NAMCP spring forum, Orlando, FL

Preya Tarsney:

Panelist on Law and Bioethics Career Panel. American Bar Association and Loyola University Beazley Institute for Health Law and Policy. Chicago, IL. May 2014.

RESEARCH FACULTY

Anne Deutsch:

Deutsch A. Quality and Safety: Key Performance Indicators. Nancye B. Holt Management Course The Leadership and Operational Tool Box for Managing in Rehabilitation. Chicago, IL; March 11, 2014.

Deutsch A. Post Acute Care: Payment and Quality Initiatives. University at Seattle, WA, Dept. Physical Medicine and Rehabilitation. March 14, 2014.

Technical Reports: Morley M, Coomer N, Zheng NT, **Deutsch A**, Ingber M, Coots LA, Kelleher CA, Garfinkel D, Gage B. Post-Acute Care Episode Risk Adjustment Extrapolation Analyses: Final Report. <http://aspe.hhs.gov/health/reports/2014/postacute/PAC-Epi-RA-Analyses.pdf>
Report posted April 2014.

Ongoing service

Chair, ACRM Award Committee

Rehabilitation Nurses Foundation, member

Disseration Committee member, UTMB, Amit Kumar, OT Doctoral Student, University of Texas Medical Branch 2014-present; Comorbidities and Functional Outcomes

Assaf Dvorkin:

Presented: Giving the brain a (virtual) hand: Visuo-motor function following brain injury. Department of PT, University of Massachusetts, April 2, 2014

Presented: Giving the brain a (virtual) hand: Use of technology for assessment and remediation of attention following brain injury. Department of OT, University of Wisconsin Madison, March 28, 2014

Linda Ehrlich-Jones:

Grants funded

U34 AR064513 Ramsey-Goldman/Ehrlich-Jones (Principal Investigators)

05/01/14 - 04/30/16 NIH/NIAMS \$785,020

Planning Activity and Nutrition Trial in Lupus to Energize & Renew (ANTLER)

PVA Education Foundation- Ehrlich-Jones (Principal Investigator)

6/1/14-5/31/15 \$45,000

Improving Psychosocial Outcomes following SCI/D with Measurement Resources

Ongoing service

Co-Chair WFO, Northwestern University

External Committee member for doctoral dissertation, "Migraine Headache: A Family Affair? Impact on Quality of Life, Mental Health and Marital Satisfaction" by Karen Bacher, University of New Mexico, Family Studies Program.

External Committee member for doctoral dissertation, "Benchmarking Role Acquisition and Perceptions of Role Among United States Rheumatology Nurses: A Mixed Methods Study" by Sheree Campbell Carter, Georgia Baptist College of Nursing of Mercer University, Atlanta, GA.

Levi Hargrove:

JM Souza, NP Fey, JE Cheesborough, SP Agnew, **LJ Hargrove** and GA Dumanian, "Advances in Transfemoral Amputee Rehabilitation: Early Experience with Targeted Muscle Reinnervation", Current Surgery Reports

EJ Rouse, **LJ Hargrove**, EJ Perreault, TA Kuiken "Estimation of Human Ankle Impedance During the Stance Phase of Walking", IEEE Transactions of Neural Systems and Rehabilitation Engineering

RD Gregg, EJ Rouse, **LJ Hargrove**, JW Sensinger " Evidence for a time-invariant phase variable in human ankle control", PLoS One

D Tkach, A Young, L Smith, E Rouse, **LJ Hargrove** "Real-Time and Offline Performance of Pattern Recognition Myoelectric Control Using a Generic Electrode Grid With Targeted Muscle Reinnervation Patients", IEEE Transactions on Neural Systems and Rehabilitation Engineering

AJ Young, LH Smith, EJ Rouse, **LJ Hargrove**, "A comparison of the real-time controllability of pattern recognition to conventional myoelectric control for discrete and simultaneous movements", Journal of NeuroEngineering and Rehabilitation

Patents:

BA Lock, **LJ Hargrove**, SYSTEMS AND METHODS FOR AUTOCONFIGURATION OF PATTERN-RECOGNITION CONTROLLED MYOELECTRIC PROSTHESES, US Patent 20,140,032,462

LJ Hargrove, presented “The Bionic Man”, The 2014 Consumer Electronic Show’s Digital Health Summit, Las Vegas, Jan. 2014.

LJ Hargrove, Association of Professional Engineering and Geoscientists of New Brunswick, Young Professional Achievement Award

Mehdi Mirbagheri:

Niu X, Varoqui D, Kindig M, Mirbagheri MM, “Prediction of gait recovery in spinal cord injured individuals trained with robotic gait orthosis, J Neuroeng Rehabil. 2014; Mar 24, 11(1):42

Varoqui D, Niu X, Mirbagheri MM, “Ankle voluntary movement enhancement following robotic-assisted locomotor training in spinal cord injury, J Neuroeng Rehabil. 2014; Mar 27

Annie Simon:

Simon AM, Finucane SB, Ingraham KA, Fey NP, Halsne EG, Hargrove LJ. Transfemoral amputees performing sit to stand with a powered knee and ankle prosthesis. Presented at the American Academy of Orthotists and Prosthetists 40th Annual Meeting and Scientific Symposium, Chicago, IL, 2014.

Finucane SB, Simon AM, Ingraham KA, Fey NP, Lipschutz RD, Young AJ, Halsne EG, Hargrove LJ. Training for transfemoral amputees ambulating on a powered lower limb prosthesis. Presented at the American Academy of Orthotists and Prosthetists 40th Annual Meeting and Scientific Symposium, Chicago, IL, 2014.

ADJUNCT / OTHER FACULTY

Rosemarie King: 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*. In Press.

Kristi Kirschner:

Keynote for “Changes in National Health Care and Its Impact on Stroke Rehabilitation,” RIC Academy course, Prognosis, Progress, and Practice in Stroke Rehabilitation: Adapting to Changes in Healthcare, Chicago IL, April 10, 2014.

--FSM M1 Plenary: Musculoskeletal Clinical Correlation: Patients with Disabilities, April 28,2014 (with Judy Panko Reis)

1. Kirschner KL. “Bad girls” from the world of disability. Atrium, the Report of the Northwestern Medical Humanities and Bioethics Program, Issue 12 ; Winter 2014; 23-27. <http://bioethics.northwestern.edu/docs/atrium/atrium-issue12.pdf>

Kirschner KL, Bristo M, Blauwet CA, Frontera W, Tolchin DW, Stein MA, Hoppe KM, Wu SH. The Convention on the Rights of Persons With Disabilities: What Is at Stake for Physiatrists and the Patients We Serve. *PM&R* 2014; 6(4); 356-362.

Theresa Pape: book chapter “Medical Neurorehabilitation”, Selzer et al: *Textbook of Neural Repair & Rehabilitation 2E – Volume 2*.

Theresa Savage:

Lecture on ethics for Northwestern Memorial Annual Advanced Practice Nursing Conference, Northwestern Memorial Hospital. April 2014.

Lecture on Disability Ethics to philosophy students (honors course) at Loyola University, Chicago campus. March 2014

Diane D. Sheehan and **Shubra Mukherjee:** *Comprehensive Evaluation and Practical Treatment of Children with Wounds*, Ann & Robert H. Lurie Children’s of Chicago Child’s Doctor: Online CME Rounds: April 2014

NORTHWESTERN UNIVERSITY PROSTHETIC - ORTHOTIC CENTER

Publications:

Dillon, M., **Fatone S**, Morris, M. (2014) Partial Foot Amputation may not Always be Worth the Risk of Complications. *Medical Journal of Australia*, March 17, 200 (5): 253-254.

Johnson, W.B., Fatone S, Gard, S.A. (2013) Modeling effects of sagittal-plane hip joint stiffness on reciprocating gait orthosis-assisted gait. *Journal of Rehabilitation Research and Development*, Vol. 50, No. 10, pp. 1449-1456.

Zissimopoulos, A., Fatone S, Gard, S.A. (2014) The effect of ankle-foot orthoses on self-reported balance confidence in persons with chronic poststroke hemiplegia. *Prosthetics and Orthotics International*, Vol. 38(2) 148–154.

Zissimopoulos, A., Stine, R., Fatone, S., Gard, S.A. (2014) Mediolateral foot placement accuracy during ambulation in individuals with chronic post-stroke hemiplegia. *Gait and Posture*, 39:1097–1102.

Koehler, S. R., Dhaher, Y. Y., & Hansen, A. H. (2014). Cross-validation of a portable, six-degree-of-freedom load cell for use in lower-limb prosthetics research. *J Biomech*, 47(6), 1542-1547.

Zissimopoulos, A., Fatone, S., Gard, S.A. (in press) Effects of an Ankle-Foot Orthosis on Mediolateral Foot Placement Ability during Post-Stroke Gait. *Prosthetics and Orthotics International*.

Presentations:

Yeongchi Wu, MD, was an invited presenter at the 2014 Annual Georgia Society of Orthotists and Prosthetists held in Atlanta, GA, April 3-5, 2014. Dr. Wu presented a talk, "A Priori of O&P Casting Technology", and a 90-minute workshop on "Plasterless Casting Techniques for O&P Applications."

Kwak S, Johnson WB, Fatone S (2014) The Consequences of Ankle Foot Orthosis Joint Misalignment Using a 3D Model. National Conference on Undergraduate Research, April 3-5, Lexington, Kentucky.

Caldwell R, Komolafe O, Fatone S (2014) Clinical outcomes using a new subischial socket with vacuum assisted suspension: the NU-FlexSIV. World Congress OTWorld 2014, May 13-16, Leipzig, Germany.

Conner L, and Wu, Y (2014) Development of a Low-Cost Dilatancy-Based System for orthotic Fabrication. 10th Annual Lewis Landsberg Research Day, Northwestern University, April 3, Chicago, IL.

Major MJ, Kluger D, Fatone S, Gard SA (2014) The effect of trunk flexion on lower limb kinetics of able-bodied gait. 10th Annual Lewis Landsberg Research Day, Northwestern University, April 3, Chicago, IL.

Educational Tours:

NUPOC hosted the 9th group of the Initiative '93 Technical Orthopedics German-Speaking Travel Fellowship for a day-long symposium of scientific and technical exchange on March 3, 2014. Founded during the 1992 International Society of Prosthetics and Orthotics (ISPO) World Congress that was held in Chicago, the goals of Initiative '93 are to promote skills among German-speaking orthopedists; promote training in Orthopedics & Trauma Surgery; support a Chair of Technical Orthopaedics at the University of Münster; and publish articles in the Journal of Orthopaedics and Traumatology. Steven A. Gard, PhD, Stefania Fatone, PhD, William Johnson, PhD, Erin Boutwell, MS, Craig Heckathorne, MS, and Yeongchi Wu, MD, presented on their research.

Northwestern University Prosthetics-Orthotics Center (NUPOC) hosted an interactive educational program and tour for science teachers and 50 Advanced Placement science students from Parkway South High School (Manchester, MO) on April 10, 2014. R. J. Garrick, PhD, developed this program in support of STEM (**S**cience **T**echnology **E**ngineering & **M**athematics) education initiatives. Steven A. Gard, PhD, Chris Robinson, CPO/L, and Yeongchi Wu, MD presented didactic modules.

Laboratory Visits/Events:

Stefania Fatone, PhD, BPO (Hons), **Ryan Caldwell**, CP/L, FAAOP, and the research and education programs at NUPOC were featured in an article that is circulated to Scheck & Siress corporate members, their practitioners and consumers describing the many ways that

NUPOC and Scheck & Siress interact in their ongoing commitment to the education of P&O professionals. <http://blog.scheckandsiress.com/index.php/scheck-siress-prosthetist-ryan-caldwell-cpl-faaop-contributes-nupoc-research-2/>

NUPOC research by **Stefania Fatone, PhD**, and **Craig Heckathorne, MS**, on the prosthetic needs of farmers and ranchers with amputation was featured in an article “When State-of-the-Art is Second Best” in NovaNEXT, March 5, 2014.
http://www.pbs.org/wgbh/nova/next/tech/durable-prostheses/?utm_source=facebook&utm_medium=pbsofficial&utm_campaign=nova_next

Research by **Stefania Fatone, PhD**, and Australian colleagues Drs. Michael Dillon and Meg Morris, on partial foot amputation was featured in an article “Uncertainty in diabetes amputations” in MJA InSight, March 17, 2014.
<https://www.mja.com.au/insight/2014/9/uncertainty-diabetes-amputations>

The NUPOC ERGO Soiree and an instructional course by **Stefania Fatone, PhD**, and **Ryan Caldwell, CP**, were featured in an article “The Academy Celebrates 40 Years” in The O&P Edge, April, 2014, as being among the most well attended at the recent meeting of the American Academy of Orthotists and Prosthetists. http://www.oandp.com/articles/2014-04_13.asp **Brian Robillard, MS**, earned his Master’s degree in biomedical engineering on March 5, 2014. Advised by **Dr Stefania Fatone**, Brian conducted research at NUPOC that culminated in his thesis, “Design of a Process for Fabricating Prosthetic Sockets with Additive Manufacturing Technology.” Brian has accepted a post as Associate Consultant at Mars & Co.

Meetings:

Dr. Steven Gard participated in a Rehabilitation Engineering Research Center (RERC) proposal review panel for the National Institute on Disability and Rehabilitation Research (NIDRR) in April 2014.

Grant Awards:

Principal Investigators Yongang Huang, PhD, **Stefania Fatone, PhD**, John Coleman, PhD, Todd Anderson, PhD were awarded a collaborative research grant from the National Institute of Health to develop an “Interface Monitoring System to Promote Residual Limb Health.” This 4 year grant is scheduled to start June 1 2014.

Grant Submissions:

Drs. Matthew Major and Keith Gordon of the Department of PT&HMS (Co-PIs) submitted a proposal to the Orthotic and Prosthetic Education and Research Foundation (OPERF) entitled “Effects of Prosthetic Ankle-Foot Stiffness on Lateral Stability of Below-Knee Prosthesis Users” on January 17, 2014.

Dr Stefania Fatone collaborated on an application to the Shriners Hospitals for Children for a Clinical Research Grant on “Ankle-Foot Orthoses Footwear Combinations: The Impact of Biomechanical Optimization.” (Principal Investigator: Jeremy Bauer, MD). Submitted April

15, 2014.

Gard, S. and Heckathorne, C. “Pressure-based Design of a Frame-type Transradial Socket.” Submitted as a Field-Initiated Project to the National Institute on Disability and Rehabilitation Research (NIDRR), February 28, 2014.

Gard, S. and Casanova, H. “Evaluation of a Vacuum-Based Impression and Alignment Device (V-BIAD).” Submitted as a Field-Initiated Project to the National Institute on Disability and Rehabilitation Research (NIDRR), February 28, 2014.

Gard, S. and Wu, Y. “Development and Evaluation of an Improved Method for Prosthetic Alignment.” Submitted as a Field-Initiated Project to the National Institute on Disability and Rehabilitation Research (NIDRR), February 28, 2014.

Letter of Intent Submissions:

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, May 1, 2014.

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