Scholarly Activities
Department of Physical Medicine and Rehabilitation
Quarter June-August 2015

Regular Faculty

James Atchison:
Fellow/ Resident Lectures:
6/9 - WC/ IME’s Lecture (RIC)
7/12 - Intro to Pain Physician Exam Lecture (RIC)
8/11 - Introduction to Interdisciplinary Pain Management Part 1- PGY2 & PGY3 (RIC)
8/18 - Opioids II- PGY2 & PGY3 (RIC)

Edie Babbitt:


Randy Calisoff:
Fellow/Resident Lecture: 6/15 – UDS Fellow Lecture (RIC)

Leora Cherney:


Peer Reviewed Conference Presentations

Cherney, L. R., Kaye, R. C., Hitch, R., & van Vuuren, S. Examining complexity and feedback during script training in aphasia. Poster presentation at the annual Clinical Aphasiology Conference, Monterey, CA (May-June, 2015).

Deborah Gaebler:
Faculty: Pediatric Hemiplegia Symposium, Department of PTHMS and RIC

Presenter: 1st NU Early Motor Development Research Meeting – Robotics and Cerebral Palsy, June 30
Allen Heinemann:

Peer reviewed publications


Presentations


**Heinemann AW**, Chan L. Improving the Quality of Rehabilitation Research Through the Use of Reporting Guidelines. Paper presented at the 9th World Congress of the International Society of Physical and Rehabilitation Medicine, Berlin, Germany, June 20, 2015

**Grant submitted**
Craig H. Neilsen Foundation: Implementing SCI-QOL into Clinical Practice: Enhancing Patient Outcomes using Common Data Elements and Implementation Science

NIDILRR, RRTC on Improving Measurement of Home and Community Based Services

NIDILRR, DRRP: Knowledge Translation to Promote Use of Standardized Clinical Assessments

**Professional Service**

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

Christina Marciniak:

*Publications*

**Marciniak CM**, Li X, Zhou P. An Examination of Motor Unit Number Index in Adults with Cerebral Palsy. J of Electromyography and Kinesiology. 2015 25(3), 444-450.PMID: 25840713

Klein CS, Zhou P, **Marciniak C**. Excitability properties of motor axons in adults with cerebral palsy. Frontiers in Neuroscience. *Accepted for Publication*


Elovic, Elie Paul, Michael C. Munin, Petr Kaňovský, Angelika Hanschmann, Reinhard Hiersemenzel, and **Christina Marciniak**. "Randomized, placebo-controlled trial of incobotulinumtoxinA for upper-limb post-stroke spasticity." *Muscle & Nerve* (2015). *Accepted for publication*

*Abstracts*

abobotulinumtoxinA (Dysport®) in adults with upper limb spasticity (S28. 001).” *Neurology* 84, no. 14 Supplement (2015): S28-0


Debjani Mukherjee:  


Monica Rho:  


Selected as a 2015-2017 Academy Leadership Program Fellow of the AAPMR.

Leslie Rydberg:  

Ming Wu:  

**Grant Award:** NIH/NICHD, RO1HD082216, “Constraint induced movement therapy for walking in individuals post stroke”. 08/06/2015-07/30/2020
W. Zev Rymer:

Co-Chair for an abstract session at ISB – Session on Rehabilitation: Balance 1 in Glasgow, Scotland, July 2015

Chair for symposium on Impaired Motor Control and Rehabilitation at 10th meeting of the International Society of Motor Control in Budapest, Hungary, July 25

Presenting “Spinal control of movement and force” at RIC-IIT Workshop on Robotic and Interactive Technologies for Neuroscience and Neurorehabilitation in Arenzano, Italy, August 31

Research Faculty

Linda Ehrlich-Jones:

Peer reviewed publications

Grants submitted
NIDILRR DRRP on Knowledge Translation Heinemann/Ehrlich-Jones (Principal Investigators). Knowledge Translation to Promote Use of Standardized Clinical Assessments.
Craig H. Neilsen Psychosocial Research Grant Ehrlich-Jones (Principal Investigator)
Pilot Study on Training Therapists in Motivational Interviewing to Enhance Rehabilitation Participation

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

Ongoing service
Chair WFO, Northwestern University
Rheumatology Research Foundation, Member, Board of Directors

Anne Deutsch

Presentations
**Ongoing service**
Dissertation committee member for Amit Kumar, OT. Doctoral Student, University of Texas Medical Branch, Dissertation: Comorbidities and Functional Outcomes, Successfully defended dissertation July 14, 2015

Dissertation committee member for Laura Coots. Doctoral Student, Brandeis University, Dissertation: Readmissions after Discharge from an Inpatient Rehabilitation Facility, Proposal Defense on June 30, 2015

**Policy:**


- Under several CMS contracts and an ASPE contract, Anne led the development of 4 quality measures that are now endorsed by NQF (July 23, 2015):
  - Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function; STEWARD: Centers for Medicare & Medicaid Services (CMS) - [http://www.qualityforum.org/QPS/2631](http://www.qualityforum.org/QPS/2631)
  - Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support; STEWARD: Centers for Medicare & Medicaid Services (CMS) - [http://www.qualityforum.org/QPS/2632](http://www.qualityforum.org/QPS/2632)
  - Inpatient Rehabilitation Facility (IRF) Functional Outcome Measure: Discharge Self-Care Score for Medical Rehabilitation Patients; STEWARD: Centers for Medicare & Medicaid Services (CMS) - [http://www.qualityforum.org/QPS/2635](http://www.qualityforum.org/QPS/2635)
  - Inpatient Rehabilitation Facility (IRF) Functional Outcome Measure: Discharge Mobility Score for Medical Rehabilitation Patients; STEWARD: Centers for Medicare & Medicaid Services (CMS) - [http://www.qualityforum.org/QPS/2636](http://www.qualityforum.org/QPS/2636)
Other Faculty

Ross Arena:
Publications:


Presentations:


- Addressing the non-communicable disease Epidemic through worksite health and wellness programs. XXXVI Congress of the Sao Paulo State Society of Cardiology, XXI Physical Therapy Symposium, Sao Paolo, Brazil, June 2015.

- Revisiting CPX Applications: Aligning Evidence with Clinical Practice. XXXVI Congress of the Sao Paulo State Society of Cardiology, XXI Physical Therapy Symposium, Sao Paolo, Brazil, June 2015.

Marylou Guihan:

Proposals Submitted:

Guihan (PI), Neilsen Foundation Pilot Psychosocial Research Grants, “Developing patient-centered interventions to improve wound care outcomes in SCI”

Safdar (PI), VA RR&D, “Alternative Therapies for wound Healing in Diabetes (ATHENA”), role: Co-investigator


Rubin (PI), VA HSR&D Combating Antimicrobial Resistance through Rapid Implementation of Available Guidelines and Evidence (CARRIAGE), Role: Co-investigator

Carbone and Weaver (PIs) VA HSR&D, Management of osteoporotic fractures in Veterans with Spinal Cord Injury, Role: Co-investigator.

Guihan (PI), VA HSR&D Improving Skin Health in SCI Outpatients by Implementing a Checklist"
Presentations:

PVA Summit, Jacksonville, FL 8/31/15: “Describing Veterans with Multiple Sclerosis Receiving Nursing Home Care,” Marylou Guihan, PhD; Florian Thomas, MD, MA, PhD; Zhipeng (Jenny) Huo, MS; Orna Intrator, Ph.D.

PVA Summit, Jacksonville, FL 8/31/15: “A Pilot study to evaluate the Role of the Spinal Cord Injury Pressure Ulcer Monitoring Tool (SCI-PUMT) in Clinical Decisions for Pressure Ulcer Treatment” Marylou Guihan, PhD; Susan S. Thomason DNP,RN

ASCI, New Orleans, 9/8/15, Ethics in Research – Give Credit Where Credit is Due: Jenny Kiratli; Maggi Budd; Shirley Groer; Marylou Guihan

Rosemarie King: Manuscript reviewer: Stroke

Maria Knikou:  


Diane Dudas Sheehan:  
Presentations:  
May 26, 2015 and 4/7/15 “Normal Growth and Development” PM&R residents on Pediatric rotation at the Rehabilitation Institute of Chicago  

June 16, 2015 and 4/21/15 “Neuromuscular Scoliosis Evaluation and Management” PM&R residents on Pediatric rotation at the Rehabilitation Institute of Chicago  

Other:  
Continue to serve as Chair of the APN Publication committee at Lurie Children’s  
Member of the NU Women Faculty Organization (WFO) Steering committee

Northwestern University Prosthetics and Orthotics Center

Publications:


Presentations:

Stefania Fatone, PhD, BPO (Hons), presented the Principal Investigator Perspective as part of a panel on “Navigating the Research Enterprise” on June 1, 2015. This series is a joint venture of the Faculty Affairs Office, Feinberg School of Medicine, and the NUCATS Institute providing an introduction to important aspects of transitioning from researcher-in-training to investigator leading a research team or collaborating with peers.


Vendeville K, Major MJ. Prediction of Frequent Fallers Amongst Lower Limb Prosthesis Users and Effects of Mobility Aid Use on Mobility and Balance Performance. 15th World Congress of the International Society of Prosthetics and Orthotics, Lyon, France, June 22 - 25, 2015.


Meetings:

Stefania Fatone, PhD, was interviewed by Kristoff Husted for KBIA Mid-Missouri Public Radio. “Amputee Farmers Struggle with Available Prosthetics” aired on 6/3/2015.

Matthew Major, PhD, presented "Rehabilitation Engineering Research at the Northwestern University Prosthetics-Orthotics Center for Education and Research" at the University of Salford (Manchester, UK) on July 2, 2015. He addressed the Centre for Health Sciences Research, which includes faculty and graduate students of the School of Health Sciences, and the School of Computing, Science, and Engineering. Following his talk, Dr. Major participated in several meetings to discuss ongoing and future collaborative projects.

Matthew Major, PhD, attended the 2015 Annual Student-Faculty Retreat as a faculty participant and served as a poster judge at the Medical Scientist Training Program (MSTP) on July 10-12, 2015 in Chicago, IL and Delavan, WI. The purpose of the retreat was to welcome new MD/PhD students into the program and to allow other students to present their doctoral research.

Stefania Fatone, PhD, was invited to participate as a reviewer in the VA RR&D’s Scientific Merit Review Board Meeting held on August 4, 2015, in Washington DC.

Stefania Fatone, PhD, participated as on the review committee for the best oral presentation in the category advancing clinical treatment at the 15th World Congress of the International Society for Prosthetics and Orthotics, June 22-25, Lyon, France.

Stefania Fatone, PhD, BPO (Hons), is currently involved as a member of the Clinical Content Committee planning the 2016 American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium.

Lily Tran, MS, attended the 2015 NSF Smart and Connected Health (SCH) Principal Investigators Workshop held June 30-July 1, 2015 in Arlington, VA. Lily attended on behalf of Stefania Fatone, PhD (PI) of the NIH funded project “Interface Monitoring System to Promote Residual Limb Health”.

Matthew Major, PhD, was invited to participate as a reviewer for the National Institutes of Health Small Business Innovation Research Award “Improving Health through Rehabilitation Robotic Technology (R43/R44)”

Steven Gard, PhD, participated as a reviewer in the VA RR&D’s Career Development Award Review Panel Meeting held on August 5, 2015, in Washington DC.
**Laboratory Visits/Events:**

The Northwestern University Prosthetics-Orthotics Center (NUPOC) held the “NU-FlexSiV Socket Course” (July 31-August 1 and August 21-22, 2015), the first two of a series of three hands-on continuing education courses for Certified Prosthetists. These courses were supported by a grant from the Department of Defense (PI: Stefania Fatone, PhD) and were taught by Stefania Fatone, PhD, and Ryan Caldwell, CP/L. R. J. Garrick, PhD, was registrar and course manager.

The Northwestern University Prosthetics-Orthotics Center (NUPOC) hosted two educational programs and site visits for the National Student Leadership Conference (NSLC) on August 11 and 12, 2015. R. J. Garrick, PhD, developed and managed these STEM programs.

**Grant Awards:**

Stefania Fatone, PhD, was awarded funding by the American Orthotic and Prosthetic Association as a co-investigator on “Evaluating outcomes of dysvascular partial foot and transtibial amputation: a systematic review and development of shared decision making resources” (PI: Michael Dillon, PhD, La Trobe University).

**Grant Submissions:**

Stefania Fatone, PhD, was invited to submit an application titled “No longer smooth: introducing striations into prosthetic socket construction to improve suspension, rotation, fit and comfort” to the Department of Defense on August 17, 2015 in response to the FY15 CDMRP Clinical and Rehabilitative Medicine Research Program (CRMRP) Neuromusculoskeletal Injuries Research Award.

Stefania Fatone, PhD, was a co-investigator on a National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) DRRP application titled “Knowledge Translation to promote Use of Standardized Clinical Assessments” submitted on July 6, 2015, with Allen Heinemann (PI).

Stefania Fatone, PhD, was sub-contract PI on a Defense Health Program SBIR Phase II application titled “iGRAB: Innovative Glove for Rehabilitation and Assistance using Biomimicry” submitted on June 16, 2015, with Anjal Sharma (PI) from Lynntech Inc.


Steven Gard, PhD, and Yeongchi Wu, MD, submitted a proposal entitled, “Refinement and Evaluation of Improved Method for Transfemoral Socket Fabrication” to the Department of Veterans Affairs, Rehabilitation Research & Development Service, on June 10, 2015.

Steven Gard, PhD, was a co-investigator on an application entitled, “Smart Prosthetic Interface Controlled by Feedback from Residual Limb Muscle Activity” that was submitted by Noah Rosenblatt, PhD (PI) to the Department of Defense on August 17, 2015 in response to the
FY15 CDMRP Clinical and Rehabilitative Medicine Research Program (CRMRP) Neuromusculoskeletal Injuries Research Award.

Matthew Major, PhD, submitted an application titled “Rugged, Low-Cost, Purely Mechanical Prosthetic Knees Optimized to Replicate Physiological Gait for a Variety of Terrains and Cadences” to the Department of Defense on August 17, 2015 in response to the FY15 CDMRP Clinical Rehabilitative Medicine Research Program (CRMRP) Neuromusculoskeletal Injuries Research Award.

Matthew Major, PhD, was listed as a co-investigator on an NSF Career Award titled “High performance, low-cost, passive prosthetic knees optimized to replicate physiological gait in multiple mobility scenarios” submitted July 31st, 2015.

Letters of Intent:

Stefania Fatone, PhD, submitted an LOI on June 1, 2015 to the Department of Defense titled “No longer smooth: introducing striations into prosthetic socket construction to improve suspension, rotation, fit and comfort.”


Matthew Major, PhD, submitted an LOI on August 3rd, 2015 to the Department of Veterans Affairs titled “Design of a Low-Cost Prosthetic Foot with Physiological Roll-Over and Push-Off.”

Center for Bionic Medicine (RIC)

Awards:

Hargrove LJ, Simon AM, Young A, Finucane S, Halsne E, Fey N, Ingraham K, and Kuiken TA, were awarded the 2015 US Army’s Military Health System Research Symposium TEAM Award for Outstanding Research Accomplishment by Academic collaborators.

Simon AM “Improved weight-bearing symmetry for transfemoral amputees during standing up and sitting down with a powered knee-ankle prosthesis.” RIC’s Sarah Baskin Research Award—1st Place, Faculty Category

Webinar:


Workshop:

Rouse, E. Workshop leader, for U.S. Special Operations Command: “TALOS exoskeleton control theory sprint” Tampa, FL. Rouse, July 19-22
Papers


Krausz N, Lenzi T, and Hargrove LJ. “Depth Sensing for Improved Control of Lower Limb Prostheses”, *IEEE Transactions on Biomedical Engineering*, Epub ahead of print, June 2015. DOI: [10.1109/TBME.2015.2448457](https://doi.org/10.1109/TBME.2015.2448457)


Invited Talks


Hargrove LJ, “Recent advances in Bionic Medicine: Development of a Neural Interface for Lower Limb Prostheses”, Shanghai Symposium on Neural-Machine Interfacing, June 2015, Shanghai, China

Conference Presentations:


Reissman T, Halsne E, Kuiken TA. *Clinical Evaluation of a Novel Gel Liner System Developed to Improve Use and Function of Transhumeral Myoelectric Prostheses*. International Society for Prosthetic and Orthotics (ISPO), June 22-25 2015, Lyon, France.


Spanias J, Simon AM, Ingraham KA, and Hargrove LJ, "Effect of additional mechanical sensor data on an EMG-based pattern recognition system for a powered leg prosthesis," presented at the 7th International IEEE EMBS Neural Engineering Conference, April 22-24 2015, Montpellier, France

**Grants submitted**

