Scholarly Activities  
Department of PM&R  
Quarter: March – May 2016

Regular Faculty

James Atchison:

Teaching:
1. 3/22- Opioids Part 1 Resident Lecture (RIC)
2. 4/5 - Opioids Part 2 Resident Lecture (RIC)
3. 4/19- Functional Capacity Evaluations and Impairment Ratings, Fellow Lecture (RIC)
4. 5/3 – Health & Society Lecture during MSK Module Entitled: “Opioid Abuse in America”. (Daniel Hale Williams Auditorium, Northwestern)
5. 5/4- Acute Vs. Chronic MSK Pain, Lecture- Phase 1A MSK Module (Northwestern)
6. 5/24- Disability, Fellow Lecture (RIC)


Leora Cherney:

Publications:


*Invited presentations:*

*Peer Reviewed Conference Presentations:*


Andrea Domenighetti:

5-8 March 2016: attended the ORS (Orthopaedic Research Society) annual meeting in Orlando and presented a talk entitled “Impaired muscle satellite cells maturation in children with cerebral palsy”.

24-25 March 2016: attended the NIH Workshop on "Basic and Translational Research in Cerebral Palsy", Rockville MD.

March 2016: Collaborator on an industry grant application entitled "Botulinum Toxin for Improving Nerve Regeneration", submitted to Ipsen (PI, Dr Colin Franz).

27 April 2016: Presented a scientific talk entitled “Epigenetic modifications of muscle in cerebral palsy” at the RIC Leadership Meeting.

Levi Hargrove:

*Papers published:*

Smith, LH, Kuiken TA, and Hargrove, TA. “Evaluation of Linear Regression Simultaneous Myoelectric Control Using Intramuscular EMG.” *IEEE Transactions on Biomedical Engineering* 63(4)L 737-746, April, 2016 (Cover Article)

*Papers Accepted:*


**Richard Harvey** – coauthor “AHA/ASA Guidelines for Adult Stroke Rehabilitation and Recovery”, *Stroke* (Accompanying commentary by Elliot Roth)

Allen Heinemann:

*Peer reviewed publications:*


Herzer K, Heinemann AW, Chen Y, González-Fernández M. Association Between Time to-Rehabilitation and Outcomes Following Traumatic Spinal Cord Injury, 
Archives of Physical Medicine and Rehabilitation, in press.


Presentations:


Grants Funded:
Department of Defense: Enhancing Quality of Orthotic Services with Process and Outcome Information

Grant submitted:
Midwest Regional Spinal Cord Injury Care System renewal Chen/Heinemann (Principal Investigators)

NIDILRR DRRP Heinemann/Ehrlich-Jones (Principal Investigators)
Knowledge Translation to Promote Use of Standardized Clinical Assessments

Grants in development:
NCMRR: Defining Trajectories of Neurologic and Quality of Life Outcomes Following Stroke
Honor:

Arun Jayaraman:

Grants Submitted;

Papers Published:

Todd Kuiken:

Conference hosted:

Papers published:

Smith, LH, Kuiken TA, and Hargrove, TA. “Evaluation of Linear Regression Simultaneous Myoelectric Control Using Intramuscular EMG.” IEEE Transactions on Biomedical Engineering 63(4)L 737-746, April, 2016 (Cover Article)

Grants submitted:
NIH Shared Instrumentation Grant (S10): Acquisition of Advanced Polyjet Multi-material 3D Printer, submitted May 16

Eric Larson:


Richard Lieber:


April 2016: University of Copenhagen Symposium in St. Christoph, Austria. Presenter - Mechanical role of connective tissue in muscle and tendon and Adaptation of intramuscular connective tissue – training, ageing and disease.

May 2016: CP Symposium – University of Delaware. Keynote speaker - Intraoperative and Laboratory Studies of Human Muscle Contractures


Christina Marciniak:

*Presentations:*


Abstracts:


Presentations: Rush Regional Botulinum Toxin Course: Botulinum Toxins in the Treatment of Spasticity April 9, 2016

Laura Miller:

Book Chapter

Committee Service
• 2016-2017 Member, Institute of Medicine’s (IOM’s) Committee on the Use of Selected Assistive Devices in Eliminating or Reducing the Effects of Impairments
• March 2016 Chair, Georgia Institute of Technology, Academic Program Review for the Applied Physiology program

Debjani Mukherjee:

Apkon S, Weiss L, Roth EJ, Mukherjee D. Cases That “Stick” or Stay with Us. PM
Monica Rho:


**Award**: May 2016: Feinberg Academy of Medical Educators Outstanding Teacher Award

Elliott Rouse:

Grants Submitted;

Papers submitted:

Invited Talks:
Northwestern University Prosthetics and Orthotics Center: New strategies for the design and control of wearable robots for the lower extremity. April 25, 2016
LA Dodgers’ Lunch and Learn, New strategies for the design and control of wearable robots for the lower extremity, May 6, 2016

Outreach:
New strategies for the design and control of wearable robots for the lower extremity at Pumping Station 1 Makerspace – a local hackerspace. Event attended by hobbyist / enthusiast electrical, mechanical and software engineers, May 9, 2016

Zev Rymer:


Member of External Review Committee for Evaluation of the Balgrist University Hospital at the University of Zurich on March 15-18, 2016

Held RERC TIDI External Advisory Board Meeting on March 25, 2016

Published “Ascending vestibular drive is asymmetrically distributed to the inferior oblique motoneuron pools in a subset of hemispheric stroke survivors by Miller DM, Baker JF, and Rymer WZ in Clinical Neurophysiology. April 2016. PMID: 26971485.
Presented an invited talk on "Origins of Muscular Weakness in Hemispheric Stroke: Applications of Advanced Technologies" at the University of Houston on April 1, 2016

Attended the Neural Control of Movement Conference (NCM 2016) in Montego Bay, Jamaica April 25-29

Attended the Rehabilitation Research Career Development Program 9th Annual Meeting in Los Angeles, CA May 18-19, 2016

Attending the NIH Rehabilitation Sciences Conference May 25-26, 2016

Diane Dudas Sheehan:

Lectures:
March 10, 2016 “Neuromuscular Scoliosis Evaluation and Management” I presented to PM&R residents during Pediatric rotation at the Rehabilitation Institute of Chicago

March 10, 2016 “Building your Career and Constructing Your Curriculum Vitae, APNs /Nurses at Lurie Children’s

March 15, 2016 “Cerebral Palsy” presented to Orthopaedic Team: APNs, RNs, Administrative Assistants at Lurie Children’s

March 24 2016 “Comprehensive Evaluation and Practical Treatment of Children with Wounds” I presented to PM&R residents/medical students during Pediatric rotation at the Rehabilitation Institute of Chicago

Teaching: Spring 2015 class Tutor for M1, Professional Development: Ethics in Action Course, NU

Service: WFO committee member

Annie Simon:

Conference papers accepted:


Vineeta Swaroop:

**Swaroop VT.** Director, American Academy of Orthopaedic Surgeons Part II 2017 Board Certification Preparatory Webinar (#3247) (March 15, 2016)

**Swaroop VT.** Director, American Academy of Orthopaedic Surgeons One Day Part II 2016 Board Certification Review Course (#3358), Rosemont, IL (May 13, 2016)

**Swaroop VT.** Director, American Academy of Orthopaedic Surgeons One Day Part II 2016 Board Certification Review Course (#3359), Rosemont, IL (May 14, 2016)

**Swaroop VT.** Beyond Typical DDH: Indications for Treatment of Hip Dysplasia/Dislocation – Myelo hip. 2016 Annual Meeting of the Pediatric Orthopaedic Society of North America in Indianapolis, IN (April 29, 2016)

**Swaroop VT.** Myelomeningocele Fetal Surgery: Does this change orthopaedic findings and treatment down the road? 2016 Annual Meeting of the Pediatric Orthopaedic Society of North America in Indianapolis, IN (April 29, 2016)

Thompson RM, Ihnow S, Dias L, **Swaroop VT.** Comparing Outcomes of Tibial Derotational Osteotomy in Cerebral Palsy vs Myelodysplasia. 2016 Annual Meeting of the Pediatric Orthopaedic Society of North America in Indianapolis, IN (April 29, 2016)

**Mary Zeigler:** “Use of the Pressure Ulcer Scale for Healing (PUSH) in Inpatient Rehabilitation: A Case Example”. Rehabilitation Nursing Journal, February 2016 (Early View)

Research Faculty

Anne Deutsch:

*Publications:*


*Presentations:*

**Deutsch A.** Functional Abilities and Goals. Presentation at the Centers for Medicare and Medicaid Services’ Inpatient Rehabilitation Facility Quality Reporting Program Training; Dallas, TX; May 18, 2016.

Deutsch A. Assessment and Quality in Rehabilitation Hospitals. PKUCare Rehabilitation Hospital, Beijing, China; May 30-31, 2016

**Professional Activities**

Member, Expert Panel, Medicare Bundled Payment Care Initiative: Heart Failure. Centers for Medicare and Medicare Services and Telligen

Member, External Advisory Committee, Center for Large Data Research & Data Sharing in Rehabilitation (University of Texas Medical Branch, Galveston, TX)

Invited Participant, Association of Rehabilitation Nurses Strategic Planning Summit. Chicago, IL

Member, National Quality Forum: Attribution Expert Panel

Linda Ehlich-Jones:

**Presentations:**


**Ehrlich-Jones L.** Individuals, Family and Community. Moderator for this session at the Rehabilitation Research at NIH: Moving the Field Forward, May 25, 2016, Bethesda, MD.

**Grants Submitted:**

NIH/NIAMS U01Ehrlich-Jones/Ramsey-Goldman (Principal Investigators)

Lupus Intervention for Fatigue Trial (LIFT)

NIDILRR DRRP Heinemann/Ehrlich-Jones (Principal Investigators)

Knowledge Translation to Promote Use of Standardized Clinical Assessments

PCORI Tier 1 Pipeline to Proposal Ehrlich-Jones (Principal Investigator)

Increasing physical activity in persons with systemic sclerosis

**Professional Activities:**

Chair WFO, Northwestern University

Member, Illinois Society of Advanced Practice Nurses Program Committee

Member, NIH Rehabilitation Scientific Planning Committee

Member, Osteoarthritis Action Alliance, Community engagement (group 2)

Member, American College of Rheumatology Quality Measures Subcommittee
Mary Lou Guihan:

**Current funding:**
Research to support an organizational culture of spiritual care in VA patient care. 
Role: Co-investigator. Funder: VA Office of Nursing Services

SCI QUERI and SCI/D National Office Partner-Centered Care Quality Improvement Program (PI: Evans), Role: Associate Director. Funder: VA QUERI

**Pending:**

**Publications:**


Northwestern University Prosthetics-Orthotics Center

**Publications:**


**Fatone S,** Johnson WB, Kwak S (2016) Using a three dimensional model of the Ankle-Foot Orthosis/leg to explore the effects of combinations of axis misalignments. Prosthetics Orthotics International, 40(2) 247-252. DOI: 10.1177/0309364614556839


**Major MJ,** Alford M. Validity of the iPhone M7 motion co-processor as a pedometer for able-bodied ambulation. Journal of Sports Sciences 2016 (in press).


*Presentations:*


Stefania Fatone, PhD, BPO (Hons), was an invited speaker at the Danske Bandagisters Meeting held in Nyborg, Denmark on April 1 and 2. Dr. Fatone presented two talks, “Subischial Socket with Vacuum Assisted Suspension for Persons with Transfemoral Amputation” and “Orthotic Management of Stroke”.

Stefania Fatone, PhD, BPO (Hons), and Ryan Caldwell, CP, FAAOP, were invited presenters at the Scheck Fair (Lombard IL) on April 8. Scheck Fair is an educational event hosted by Scheck & Siress, one of the largest O&P clinical providers with 15 locations throughout the Chicago area. Mr. Caldwell and Dr. Fatone presented “Socket-Related Research Collaborations at Northwestern University”, highlighting three research projects in which NUPOC and Scheck & Siress are collaborating.

Ryan Caldwell, CP, and Stefania Fatone, PhD, BPO (Hons), taught the NU-FlexSIV Socket Course for prosthetists at Medi, mbH in Bayreuth, Germany, on April 29 and 30, 2016. Medi, gmbH, requested and sponsored this course.

Ryan Caldwell, CP, and Stefania Fatone, PhD, BPO(Hons) attended the OT World Congress in Leipzig, Germany, May 3 through 6, 2016. Mr. Caldwell served as co-chair of a session on vacuum technology, "Prosthetics-Vacuum Sockets", where Mr. Caldwell and Dr. Fatone co-presented “Development of the Northwestern University Flexible Sub-Ischial Vacuum (NU-FlexSIV) Socket for Persons with Transfemoral Amputation”. This presentation was featured in “Just in Time for the Annual Meeting: OTWorld Session Sneak Peeks” in The O&P Edge, April 2016, http://www.oandp.com/articles/2016-04_10.asp

Major MJ. Biomechanical evaluations of locomotor stability in individuals with upper and lower limb amputations: Rehabilitation research at the Jesse Brown VA Motion Analysis Research Laboratory. Invited presentation for National VA Research Week at the Jesse Brown VA Medical Center, Chicago, IL, May 20, 2016.

Major MJ. An introduction to prosthetic legs that led to a career in Biomedical Engineering research. Invited presentation for the Annual Whitaker Grantee Enrichment Seminar, Institute of International Education, Athens, Greece, April 11-15, 2016.
**Major MJ, Scham J, Orendurff M.** Footwear effects on prosthetic feet mechanical properties with implications for gait biomechanics and clinical recommendations. Presented at the 42nd Academy Annual Meeting and Scientific Symposium, Orlando, FL, March 9 - 12, 2016.

**Major MJ, Alford M.** Validity assessment of the iPhone 5s as a pedometer for able-bodied persons. Presented at the 42nd Academy Annual Meeting and Scientific Symposium, Orlando, FL, March 9 - 12, 2016.

**Thesis Defenses:**

**Suzanne McConn,** successfully defended her Master’s thesis on May 10, 2016. The thesis was entitled “Prosthetic Influence on Gait Stability in Individuals with Upper Limb Loss.” The study compared subjects’ gait stability in two conditions: 1) when wearing an upper limb prosthesis that matched the mass and inertial characteristics of the sound limb; and 2) when walking without a prosthesis or wearing a prosthesis that did not match the sound limb’s characteristics. Stability during walking was measured using margin of stability, trunk kinematics, average step width, step length and others.

**Awards/Appointments:**

**Ryan Caldwell,** CP/L, FAAOP, received the Clinical Creativity Award at the 42nd Annual Meeting & Scientific Symposium of the American Academy of Orthotists & Prosthetists held in Orlando on March 9 - 12, 2016.

Dr **Stefania Fatone** was appointed as a member of the Department of Veterans Affairs Scientific Merit Review Board, Rehabilitation Engineering and Prosthetics/Orthotics Subcommittee (term: 3/2016-3/2020).

**Christopher Robinson, MS, MBA, CPO/L, ATC, FAAOP (D)** was recognized as an AAOP Fellow with Distinction at the 42nd Annual Meeting & Scientific Symposium of the American Academy of Orthotists & Prosthetists held in Orlando, FL on March 9 - 12, 2016.

**Laboratory Visits/Events:**

NUPOC was represented at the Northwestern University 12th Annual Lewis Landsberg Research Day, April 7, 2016, Chicago, Illinois by **Ryan Caldwell** with the poster “Development of the Northwestern University Flexible Sub-Ischial Vacuum (NU-FlexSIV) Socket for Persons with Transfemoral Amputation” and **Lily Tran** with the poster “Stakeholder Input on Development of a Residual Limb Monitoring System.” These posters were co-authored by **Dr. Stefania Fatone** and Matthew Quigley. Dr. Fatone also participated in this event as an abstract reviewer and poster judge.

**Northwestern University Prosthetics-Orthotics Center (NUPOC)** presented an educational program for 50 science students and their science teachers from Parkway South High School (Manchester, MO) on April 21, 2016. R. J. Garrick, PhD, developed this program in support of STEM (Science Technology Engineering & Mathematics) education initiatives.
Northwestern University Prosthetics-Orthotics Center (NUPOC) presented an educational program for NU Science in Society mentors and 25 science students from the Boys and Girls Science Club of Chicago with participants from John T. McCutcheon Elementary and William C. Goudy Elementary Schools and the Walt Disney Magnet School on May 17, 2016. R. J. Garrick, PhD, developed this program in support of STEM (Science Technology Engineering & Mathematics) education initiatives.

Grant Awards:

Dr Stefania Fatone is PI of the application “Longitudinal Observation of Myoelectric Upper Limb Orthosis Use among Veterans with Upper Limb Impairment” which was recommended for funding by the Orthotics and Prosthetics Outcomes Research Program (OPORP) Orthotics Outcomes Research Award (OORA).

Dr Stefania Fatone is PI of the application “No longer smooth: introducing striations into prosthetic socket construction to improve suspension, rotation, fit and comfort” which was recommended for funding by the CDMRP CRMRP NMSIRA 2015. Dr Steven Gard is a sub-PI on this application.

Dr Stefania Fatone is co-investigator on the application “Enhancing Quality of Orthotic Services with Process and Outcome Information” (PI: Allen Heinemann) which was recommended for funding by the Orthotics and Prosthetics Outcomes Research Program (OPORP) Orthotics Outcomes Research Award (OORA).

Grant Submissions:

Matthew Major is PI on a proposal titled “A self-report measure to comprehensively assess lower-limb residuum-socket interface comfort” submitted on April 27th, 2016, as a Pilot Grant proposal to the American Orthotic and Prosthetic Association.

Matthew Major is a co-investigator on a proposal titled “Evaluating Lower Leg Trajectory Error: A Novel Metric to Quantify the Mechanical Performance of Prosthetic Feet” submitted with collaborators at the Massachusetts Institute of Technology as an EARly-concept Grants for Exploratory Research (EAGER) proposal to the National Science Foundation.

Yeongchi Wu, MD, submitted an application entitled “Knowledge Translation of Dilatancy Prosthetic Orthotic Technology” to the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) Disability and Rehabilitation Research Projects (DRRP) Program on March 14, 2016.

Other Faculty

Chandramouli Krishnan:

