

## Scholarly Activities

### Department of Physical Medicine and Rehabilitation

June-August 2018

#### REGULAR FACULTY

##### **Brenna Argall**

Journal Publication: B. Argall. Autonomy in Rehabilitation Robotics: An Intersection. Annual Review of Control, Robotics, and Autonomous Systems, 1, 441-463, 2018

##### **Andrea Domenighetti**

Summer 2018: - Mentored 3 student interns (8-10 weeks): Austin Menezes (1st year Medical Student at the University of Cincinnati College of Medicine), Fabria Jno. Baptiste (3rd year Undergraduate at the University of Maryland, Baltimore), and Wendy Gross (3rd year Undergraduate - Lake Forest College, IL).

Lab poster presentation at 2018 Gordon Research Conference Aug 5-10 (Musculoskeletal Biology and Bioengineering): "Rescuing the myogenic program in contracted muscle from cerebral palsy patients " Lydia Sibley (Domenighetti, PI).

##### **Colin Franz**

**Franz CK**, Puritz A, Jordan LA, Chow J, Ortega JA, Kiskinis E, Heckman CJ. Botulinum Toxin Conditioning Enhances Motor Axon Regeneration in Mouse and Human Preclinical Models. Neurorehabil Neural Repair. 2018 Jul 25;1545968318790020. doi: 10.1177/1545968318790020. [Epub ahead of print] PubMed PMID: 30043670.

**Franz CK**, Dalamagkas K, Jordan LA, Spill GR. Soft tissue sarcoma affecting the right shoulder of a man with paraplegia from a remote traumatic spinal cord injury: a case report. Spinal Cord Ser Cases. 2018 Jun 26;4:55. doi: 10.1038/s41394-018-0081-8. eCollection 2018. PubMed PMID: 29951280; PubMed Central PMCID: PMC6018767

Grant: Materson ERF New Investigator Research Grant.  
Project title: "Neurotrauma in a Dish" - An induced pluripotent stem cell-based assay to determine patient specific factors affecting rehabilitation outcomes.

Presented "*In Vitro* Trauma Induces TDP-43 Proteopathy and Exacerbates Motor Neuron Degeneration in ALS Patient iPSC-derived Motor Neurons", International Motoneuron Society Meeting, June 11-14, Boulder CO

## **Deborah Gaebler**

L Black, **D Gaebler-Spira**: “Nonsurgical Treatment Options for Upper Limb Spasticity”, Hand Clin 2018

Presented Cerebral Palsy, The Charleston Swallowing Conference, Chicago July 12-14

Presented Advancing PM&R, AAPM&R Pediatric Rehabilitation Think Tank, Rosemont IL, August 3-4

## **Allen Heinemann**

### Peer-Reviewed Publications

1. Pinto, D. Bockenholz, U., Holl, J.L., Hansen, P. Chang, R.W., **Heinemann, A.W.** Preferences for physical activity: A conjoint analysis involving people with chronic knee pain. Osteoarthritis and Cartilage, in press.
2. McGrath R, Hall O, Peterson M, DeVivo M, **Heinemann AW**, Kalpakjian C. The Association Between the Etiology of a Spinal Cord Injury and Time to Mortality in the United States: A 44-Year Investigation. Journal of Spinal Cord Medicine. in press.
3. **Heinemann AW**, Jayaraman A, Mummidisetty CK, et al. Experience of Robotic Exoskeleton Use at Four Spinal Cord Injury Model Systems Centers. J Neurol Phys Ther. in press.
4. Botticello AL, **Heinemann AW**. Contextualizing Disability: A Cross-sectional Analysis of the Association between the Built Environment and Functioning among People Living with Spinal Cord Injury in the United States Spinal Cord. in press.
5. Babbitt E, Cherney L, Semik P, **Heinemann AW**. Does type of aphasia impact change on the Communication Confidence Rating Scale for Aphasia (CCRSA) . Aphasiology in press.
6. Hall, O., Kaplakjian, C., McGrath, R., **Heinemann, A.W**, Devivo, M., Chadd, E., . . . Spires, M. (n.d.). The Burden of Traumatic Spinal Cord Injury in the United States: Disability-Adjusted Life Years.

### Invited Talk

1. Keynote Speaker, University of Alberta, Edmonton, June 11, 2018

### New Awards

2. Rehabilitation Research and Training Center on Employment of People with Physical Disabilities, NIDILRR, 2018-2023
3. Advanced Rehabilitation Research and Training Award – Health and Function, NIDILRR, 2018-2023.
4. Injury control Research Center-

### Proposals under Review

1. Resubmission of Defining Trajectories of Linguistic, Cognitive-Communicative and Quality of Life Outcomes in Aphasia with Leora Cherney
2. Injury Control Research Center

### Service Activities

1. Member, Committee on Functional Assessment for Adults with Disabilities, National Academies of Sciences, Engineering, and Medicine's, 2017 – present.
2. Member, Advisory Board, National Center for Medical Rehabilitation Research, 2016-2019.
3. Advisory Board, Craig H. Neilsen Award, Larry Vogel, PI. Shriners' Hospital, Chicago, IL, 2018-2021

### **Mitra Lavasani**

#### Grant Submitted

NIH-R01: Restoring Structure and Function of Aging Neuromuscular Tissues, June 2018  
Role: PI

#### Professional Activities

Invited luncheon with Dean Eric Neilson, Vice President for Medical Affairs and Lewis Landsberg Dean, at the Feinberg School of Medicine

Invited Speaker, Keystone Board Education & Volunteering Committee at Shirley Ryan AbilityLab

Invited Lab Host, Biologics Lab at Shirley Ryan AbilityLab, The Northwestern Alumni Relations and Development team

Invited Lab Host, Biologics Lab at the Shirley Ryan AbilityLab, The American Congress of Healthcare Executives group

Invited Lab Host, Biologics Lab at the Shirley Ryan AbilityLab, The National Grantmakers in Health Conference

Invited Lab Host and Tour Guide, Biologics Lab at the Shirley Ryan AbilityLab, The Davee Foundation Site Visit

**Gadi Revivo: Revivo G, Amstutz D, Gagnon C, McCormick Z:** Interdisciplinary Pain Management Improves Pain and Function in Pediatric Patients with Chronic Pain Associated with Joint Hypermobility Syndrome. *Journal of PM&R*, 2018. 06.018

### **David Ripley**

Ripley D, Driver S, Stork R, Maneyapanda M. "Pharmacology after Traumatic Brain Injury" in Eapen Blessen and David Cifu (ed.) *Rehabilitation after Traumatic Brain Injury*, Elsevier, Chennai, India. 2018

Ashley M, Ripley D. "Bioscience Frontiers in Neuromedical Interventions Following Brain

Injury“ in Mark Ashley, (ed.) Traumatic Brain Injury: Rehabilitative Treatment and Case Management CRC Press, Washington D.C. 2018

Maghrabi A, Masel B, Urban R, Ripley D. “Pituitary Dysfunction Following Brain Injury“ in Mark Ashley, (ed.) Traumatic Brain Injury: Rehabilitative Treatment and Case Management CRC Press, Washington D.C. 2018.

**Ripley, D.** & Weed, R. Life care planning for acquired brain injury. In R. Weed (Ed.) Life Care Planning and Case Management Handbook. Boca Raton: FL: CRC Press 2004, Revised 2009, Revised 2018

**Ripley D,** Ingraham B, Kochinerginsky, Maneyapanda M, Franzese K. “Hypogonadism is Associated with Lower Functional Performance During Inpatient Rehabilitation following Hypoxic Ischemic Encephalopathy.” Presentation at the International Society of Physical and Rehabilitation Medicine Conference, Paris, France, July 9, 2018

### **Debjani Mukherjee**

Sita, EE, Lloyd, RB, Brady Wagner, LC, Nguyen, VQC, Swirsky, E, **Mukherjee, D.** (2018) “The Suicidal Outpatient: Balancing Autonomy, Trust, and Responsibilities” PM&R: The journal of injury, function and rehabilitation. July: 10(7): 758-765.

**Mukherjee, D.** & Brashler, R. (in press). “In Defense of Common Human Reactions.” Commentary in American Journal of Bioethics.

**Leslie Rydberg** contributed an article “Students Look Beyond the Chart at Shirley Ryan AbilityLab for the *My Northwestern Medicine* newsletter, May 30

### **Diane Dudas Sheehan**

May 8, 2018 “Late Presentation of Developmental Hip Dislocation: A Case Report” Pediatric Orthopaedic Practitioners Society Annual Conference, Austin TX.

Ongoing teaching (repeating lecture) PM&R residents / students during Pediatric rotation at SRAL:

“Neuromuscular Scoliosis Evaluation and Management” on 5/20/18 & 7/12/18

“Comprehensive Evaluation and Practical Treatment of Children with Wounds” 6/5/18 & 7/19/18, 8/14/18

## RESEARCH FACULTY

### Anne Deutsch

#### Presentations

1. Deutsch A. Functional Abilities and Goals. Presentation at the Centers for Medicare and Medicaid Services' State Resident Assessment Instrument Coordinator Training, Annapolis, MD; June 27, 2018.
2. Deutsch A. The New Skilled Nursing Facility Quality Reporting Program Items: Sections I and J. Presentation at the Centers for Medicare and Medicaid Services' State Resident Assessment Instrument Coordinator Training, Annapolis, MD; June 28, 2018.
3. Deutsch A. National Quality Measure Development. Quality and Patient Safety course (501) Northwestern University Feinberg School of Medicine. Chicago, IL, July 23, 2018. Graduate course.
4. Deutsch A. Section I and J Updates. Presentation at the Centers for Medicare and Medicaid Services' Skilled Nursing Facility Quality Reporting Program Training, Baltimore, MD; July 31, 2018.
5. Deutsch A, Smith A. Functional Abilities and Goals. Presentation at the Centers for Medicare and Medicaid Services' Skilled Nursing Facility Quality Reporting Program Training, Baltimore, MD; July 31, 2018.

#### Service Activities

1. Member, Agency on Community Living Traumatic Brain Injury Assessment Study Technical Expert Panel

#### Policy

1. Anne was part of the research team that developed the updated the Inpatient Rehabilitation Facility Prospective Payment System patient classification system that was finalized by CMS for use beginning in October 2019 in the IRF PPS Final Rule in the Federal Register 8/6/2018: <https://www.gpo.gov/fdsys/pkg/FR-2018-08-06/pdf/2018-16517.pdf>

### Linda Ehrlich-Jones

#### Peer-Reviewed Publications

1. Gilbert AL, Lee J, Ehrlich-Jones L, Semanik PA, Song J, Pellegrini CA, Pinto D, Dunlop DD, & Chang RW. (2018). A randomized trial of a motivational interviewing intervention to increase lifestyle physical activity and improve self-reported function in adults with arthritis. *Semin Arthritis Rheum*, 47; 732-740.

### New Awards

1. Lupus Intervention Fatigue Trial (LIFT) R01, NIAMS, 8/1/2018-7/31/2023

### Proposals in Development

1. PCORI resubmission on Comparing EnhanceFitness and Walk with Ease in Older Adults with Chronic Knee Symptoms with Rowland Chang.

### Service Activities

1. American Nurses Foundation Grant Reviews, August 6<sup>th</sup> and 7<sup>th</sup>, 2018

## **Marylou Guihan**

Weaver, F.M., Miskevics, S., Gonzalez, B., Ray, C., Le, B., Etingen, B., **Guihan, M.**, Carbone, L. D. (2018). *Managing bone health in Veterans with traumatic spinal cord injuries*. Abstract accepted for the 2018 PVA Summit.

### Publications:

Zleik N, Weaver F, Harmon RL, Le B, Radhakrishnan R, Jirau-Rosaly WD, Craven BC, Raiford M, Hill JN, Etingen B, **Guihan M**, Heggeness MH, Ray C, Carbone L. Prevention and management of osteoporosis and osteoporotic fractures in persons with a spinal cord injury or disorder: A systematic scoping review. *J Spinal Cord Med*. 2018 May 10:1-25.

**Guihan M**, Richardson MSA. The problem of preventing pressure ulcers in people with spinal cord injury. *J Spinal Cord Med*. 2018 Jun 5:1-4.

Brennan MB, **Guihan M**, Budiman-Mak E, Kang H, Lobo JM, Sutherland BL, Emanuele N, Huang ES, Sohn MW. Increasing SBP variability is associated with an increased risk of developing incident diabetic foot ulcers. *J Hypertens*. 2018 May 22 [Epub ahead of print]

## **Sherri LaVela**

### Awards:

2018 APA Division of Rehabilitation Psychology Yuker Award. (awarded for 2017 paper for contribution to literature).

### Publications (published; in press, revised):

**LaVela SL**, Balbale SN, Hill JN. Experience of using Photovoice in individuals with spinal cord injury. *Topics in SCI Rehabilitation*. In Press.

Hill JN, Etingen B, Miskevics S, **LaVela SL**. Correlates of self-reported physical function in individuals with spinal cord injuries and disorders: does self-efficacy matter? *Spinal Cord*. In Press. [PMID: 28585558]

Etingen B, Locatelli SM, Miskevics S, **LaVela SL**. Examining the relationship between post-traumatic stress disorder and social participation among Veterans with spinal cord injuries and disorders. *Disability and Rehab. In Press*. 2017. [PMID: 28743195]

Hill JN, Locatelli SM, Bokhour B, Fix G, Solomon J, Muller N, LaVela SL. Evaluating broad-scale system change using the Consolidated Framework for Implementation Research (CFIR): challenges and strategies to overcome them. *Evaluate Broad-Scale System Change. BMC Research Notes*. 2018. 11(1):560. <https://doi.org/10.1186/s13104-018-3650-9>. PMID: 30075807

**LaVela SL**, Etingen B, Locatelli SM, Heinemann AW. What determines low satisfaction with life in persons with SCI/D? *Journal of Spinal Cord Medicine*. In Press.

Balbale SN, Gawron A, **LaVela SL**. Perceptions of patient-centered care among Veterans with gastroesophageal reflux disease on proton pump inhibitor therapy. *Patient Experience Journal*. (Revisions submitted)

#### Presentations:

\***LaVela SL**, Burkhart E, \*Kale I, Bombardier C. Health Provider Perspectives on Patient Experience of Grief/Loss due to SCI. Paralyzed Veterans of America Summit 2018. Dallas, TX. Platform presentation. August 28, 2018.

**LaVela SL**, \*Burkhart E, Kale I, Bombardier C. Feelings of Grief and Loss due to Injury among Veterans with SCI. Paralyzed Veterans of America Summit 2018. Dallas, TX. Platform presentation. August 28, 2018.

#### Grants Funded:

National Multiple Sclerosis Foundation. *Evaluating the Use of Acute Intermittent Hypoxia to Enhance Motor Function in Persons with Multiple Sclerosis*. PI: **LaVela**; Co-I(s): Rymer, Jayaraman, Sandhu, Motl

Department of Defense. *Perspectives and Preferences for Weight Management after Spinal Cord Injury*.

PI: **LaVela**; Co-I(s): Ehrlich-Jones, Heinemann, Applebaum, Pedersen, Pellegrini, Goldstein

Paralyzed Veterans of America Education Foundation. *Developing a Curriculum on Grief/Loss due to SCI for Health Providers*. PI: **LaVela**; Co-I(s): Bombardier, Burkhart

### **Jessica Pedersen**

#### Peer-Reviewed Presentations

1. Presperin Pedersen J. & Shea M (2018). Leaving on a Jet Plane, will I see my wheelchair again? June 13,2018, European Seating Symposium, Dublin, Ireland.

2. Presperin Pedersen J, Shea M, Kirby RL.COMIT: Collaboration on Mobility Training: A Multi-site randomized research project on wheelchair skills and maintenance. June 15,2018, European Seating Symposium, Dublin, Ireland.
3. Presperin Pedersen J. & Smith C (2018 ). Clinical Evidence for Support of Spinal Curves in Wheelchair Seating , June 15,2018, European Seating Symposium, Dublin, Ireland.

#### Service Activities

1. Clinical Task Force for Medicare and Medicaid Assistive Technology- quarterly conference call August, 2018
2. RESNA ANSI Standards Committee on Assistive Technology for Air Travel- phone conference July 2018
3. DME Chicago Task Force- Access Living/ Kristi Kirschner – Monthly meetings
4. Devices 4 the Disabled- Board of Directors
5. Governors State University OT Program- Board of Directors Meeting July 2018

## NU PROSTHETICS AND ORTHOTICS CENTER

#### Publications:

**Fatone S, Yohay, Caldwell R** (2018) Change in residual limb size over time in the NU-FlexSIV socket: A case study. *Prosthetics and Orthotics International*. May 1:309364618775445. doi: 10.1177/0309364618775445.

**Tran L, Caldwell R, Quigley M, Fatone S** (accepted June 2018) Stakeholder input on the development of a residual limb monitoring system for persons with amputation. *Disability and Rehabilitation*.

**Stefania Fatone, PhD**, and her career contributions were spotlighted in a PI Profile titled "Expanding O&P Research," *O&P Almanac*, August 2018.

Prost V, Olesnavage KM, Johnson WB, **Major MJ**, Winter V AG. Design and Testing of a Prosthetic Foot with Interchangeable Custom Springs for Evaluating Lower Leg Trajectory Error, an Optimization Metric for Prosthetic Feet. *J. Mechanisms Robotics*, 2018; 10(2): 021010.

Block Z.A., **Brinkmann J., Gard S.** (2018). The Utilization of Consensus Techniques in Education and Research in Medical Professions. Submitted to *Journal of Prosthetics and Orthotics*.

Falbo K.J., **Brinkmann J.** (2018). Characteristics of Delphi Processes in Orthotics and Prosthetics Research. Submitted to *Journal of Prosthetics and Orthotics*.



#### Presentations:

**Major MJ**, Serba C, Gordon KE. Ability to predict perturbation timing does not impact center-of-mass displacement in below-knee prosthesis users and controls. Presented at the 42nd Annual Meeting of the American Society of Biomechanics, Rochester, Minnesota, August 8-11, 2018.

**Major MJ, Shirvaikar T, Stine R, Gard SA.** Effects of Wearing an Upper Limb Prosthesis on Standing Balance. Presented at the 42nd Annual Meeting of the American Society of Biomechanics, Rochester, Minnesota, August 8-11, 2018.

Shepherd M, Azocar A, **Major MJ**, Rouse E. The difference threshold of ankle-foot prosthesis stiffness for persons with transtibial amputation. Presented at the 7th International Conference on Biomedical Robotics and Biomechatronics, Twente, the Netherlands, August 26-29, 2018.

#### Awards:

**Maureen Connelly (MPO 2019)** was the winner of the 2018 Dale Yasukawa Award. This award is eligible to currently enrolled students in the Northwestern University Masters of Prosthetics and Orthotics (MPO) program. The Yasukawa Scholarship encourages the awardee to participate in annual meetings of the American Academy of Orthotists and Prosthetists (AAOP).

#### Meetings:

NUPOC hosted *The Neuromechanics of Rehabilitation for Lower Limb Loss Symposium 2018* on June 11, 2018. About 65 interdisciplinary researchers from 9 universities and 7 nations attended the day-long symposium, which featured 6 prominent speakers, a panel discussion, and scientific poster exhibit. Matthew Major, PhD, directed his Japan Society for the Promotion of Science (JSPS) award (4/18) to help underwrite the cost of the Symposium. **Dr. Major** and **R. J. Garrick, PhD**, developed, organized and presented the symposium.

**Stefania Fatone, PhD, BPO (Hons)**, was an invited keynote speaker at the 25th Scientific Meeting of the Japanese Academy of Prosthetists and Orthotists held July 21-22, 2018, in Sapporo, Japan. Dr. Fatone presented on "The Northwestern University Flexible Sub-Ischial Vacuum (NU-FlexSIV) Socket: Development, Research and Dissemination."

**Stefania Fatone, PhD**, participated as a reviewer in the VA Merit Review Panel held on August 7, 2018.

#### Laboratory Visits/Events:

**Matthew Major, PhD**, VA Research Health Scientist and Assistant Professor of Physical Medicine and Rehabilitation, Northwestern University, provided witness testimony to the U.S. House of Representatives Committee on Science, Space, and Technology, Subcommittee on Research and Technology, Subcommittee on Energy, hearing entitled "Empowering U.S.

Veterans through Technology” on June 13, 2018, and was an invited presenter for the U.S. House of Representatives Research and Development Caucus showcase titled “Emerging Technologies in the Field of Military and Veterans Care Expo”.

The Northwestern University Prosthetics-Orthotics Center (NUPOC) hosted an interactive STEM program and site visit for 41 participants from the National Student Leadership Conference (NSLC)-Engineering Group on July 17, 2018. **R. J. Garrick, PhD**, developed, organized and moderated this educational program.

Carlos Guamán, a clinical prosthetist and P&O educator of Cochabamba, Bolivia, spent several days at NUPOC where he attended informative meetings; reviewed P&O instructional content and fabrication processes; and presented talks about prosthetics and orthotics in Bolivia.

**Stefania Fatone, PhD**, visited the University of Washington Prosthetics and Orthotics Program on August 6, 2018, where she was invited to participate in a journal club with the prosthetics and orthotics masters students who reviewed her article “Effect of Ankle-Foot Orthosis Alignment and Foot-plate length on the Gait of Adults with Poststroke Hemiplegia” published in Archives of Physical Medicine and Rehabilitation in 2009. **Stefania Fatone, PhD, BPO(Hons)**, responded to a request from former NUPOC graduate student, Angelika Zissimopoulos, PhD, who teaches a design engineering class at the University of Chicago to assist a student team develop a realistic model limb with improved biomimetic compliance and resistance. The team was working to design and improve a tourniquet model in association with Stop the Bleed, a national initiative to educate and empower citizens to reduce mortality from exsanguination among traumatically injured persons. The model was used to demonstrate correct tourniquet use.

David Foord, LL.B., PhD, Assistant Professor, University of New Brunswick, Canada, visited the Northwestern University Prosthetics-Orthotics Center (NUPOC) to gather data for his research project, Advances in Upper Limb Prosthetics, 1945 to 2018. He interviewed **Steven A. Gard, PhD, John W. Michael, MEd, CPO, and R. J. Garrick, PhD**, about the history of myoelectric R&D that was conducted at the Northwestern University Rehabilitation Engineering Program.

#### Grant Awards:

**Stefania Fatone, PhD**, was notified that an NIH R21 application on which she is a co-investigator, titled “Biomechanics and Walking in Cerebral Palsy: Ankle Foot Orthoses – Footwear Combinations”, is to be funded (PI: Kristie Bjornson, PhD, Seattle Children’s Hospital/University of Washington).

**Stefania Fatone, PhD**, was notified that a small grant application from the American Orthotic and Prosthetic Association on which she is PI, titled “Effect of Ankle-Foot Orthoses (AFOs) on Continuous Walking in Persons with Post- Stroke Hemiplegia,” is to be funded.

Ossur Americas sponsored a “NU-FlexSIV Socket Course” taught by **Stefania Fatone, PhD, BPO (Hons)**, and **Ryan Caldwell, CP**, held in Orlando, Florida on June 22-23, 2018 and another to be held in Orlando, Florida on November 9-10, 2018.

Heckert and van Lierop sponsored a “NU-FlexSIV Socket Course” taught by **Stefania Fatone, PhD, BPO(Hons)**, and **Ryan Caldwell, CP**, to be held in Eindhoven, The Netherlands on September 19-20, 2018.

Scheck and Siress sponsored a “NU-FlexSIV Socket Course” taught by **Stefania Fatone, PhD, BPO (Hons)**, and **Ryan Caldwell, CP**, to be held in Chicago, Illinois on November 2-3, 2018.

Grant Submissions:

**Stefania Fatone, PhD**, was a consultant on an application by Lynntech Inc. to the Medical Technology Enterprise Consortium to further develop/evaluate the igrab hand orthosis (PI: Ashwin Balasubramanian, PhD).

**Stefania Fatone, PhD**, was a Co-Investigator on an application to the Joint Warfighter Medical Research Program for an extension of the “The BADER Consortium II” submitted on August 13, 2018 (PI: Steven Stanhope, PhD, University of Delaware).

**Stefania Fatone, PhD**, and Larissa Pavone, MD, submitted an LOI and internal application titled “Unlocking the potential of Ankle Foot Orthoses-Footwear Combinations to improve walking with innovative therapy programs in children with Cerebral Palsy” submitted July 10, 2018, for the Hartwell Foundation Individual Research Award.

**Stefania Fatone, PhD**, was a Co-Investigator on an NIH R01 application titled “The influence of 3D printed prostheses on neural activation patterns of the primary motor cortex in children with unilateral congenital upper-limb reductions” submitted June 5, 2018 (PI: Jorge Zuniga, PhD, University of Nebraska).

**Matthew Major, PhD**, was PI and **Stefania Fatone, PhD**, was a Co-Investigator on a VA Merit Review Application titled “Hybrid Electrical-Mechanical Pump for Vacuum Suspension of Prosthetic Sockets” submitted June 15, 2018.

**Steven Gard, PhD**, was PI on a Merit Review entitled, “Optimal Selection of Prosthetic Knee and Foot Combination for Improving Walking and Standing Performance in Transfemoral Prosthesis Users,” submitted to the Department of Veterans Affairs, Rehabilitation Research & Development Service, on June 15, 2018.

Matthew Major, PhD, is the PI on a Merit Award proposal submitted to the U.S. Department of Veterans Affairs titled “Human factors Considerations for Footwear and Load Carriage in Women Veterans with Amputations”.

Grant LOI Submissions:

**Stefania Fatone, PhD**, was Co-Investigator on an LOI submitted to the DOD Orthotics and Prosthetics Outcomes Research Program titled “Consequences of socket design for hip muscle function among unilateral transfemoral amputees” on August 6, 2018 (PI: Andrew Sawers, PhD, University of Illinois at Chicago).

**Stefania Fatone, PhD**, was PI on an LOI submitted to the DOD Orthotics and Prosthetics Outcomes Research Program titled “Comparative Effectiveness of Socket Casting Methods: Improving Form and Fit” on August 6, 2018.

**Rebecca Stine, MS**, was PI on a SPiRE LOI entitled, “Development and Evaluation of a Shock Absorbing Prosthetic Ankle Mechanism,” submitted to the Department of Veterans Affairs, Rehabilitation Research & Development Service, on August 1, 2018.

Matthew Major, PhD, is a Co-Investigator on a pre-application titled “Development of 3D Printed Upper-limb Transitional Prostheses for Veterans and Military Personnel” submitted by the University of Omaha at Nebraska to the Department of Defense CDMRP Peer Reviewed Orthopaedic Research Program (PRORP).

**Steven Gard, PhD**, was PI on a pre-application submitted to the DOD Orthotics and Prosthetics Outcomes Research Program titled “Optimal Selection of Prosthetic Knee and Foot Combination for Improving Walking and Standing Performance in Transfemoral Prosthesis Users” on August 6, 2018.