Scholarly Activities  
Department of Physical Medicine and Rehabilitation  
March – May 2012

Clinical

Alan Anschel: Initiating new clinical study “Evaluation of the burden of illness among adults in the US with peripheral and central neuropathic pain”, sponsored by Pfizer.

Colleen Fitzgerald:


Presented: Pelvic Floor Dysfunction, Northwestern Department of Urology Research Retreat, March 2012

Deb Gaebler, Li-Qun Zhang: submitted a proposal to the AACPDM “Pilot multi-center evaluations of reflex and nonreflex changes in cerebral palsy using a portable device”.

Deb Gaebler, Citlali Lopez-Ortiz: submitted a proposal to the Evergreen Womens Health Program “Measures of Fitness, Activity and Self Concepts in Girls with Cerebral Palsy Involved in a Structured Dance Program”

Sue Mukherjee: Submitted a proposal to the Eleanor Prince Woods Grant Initiative at NMH on metabolic syndrome in adults with spina bifida (with Lisa Neff)

Maxine Kuroda:


Campbell SK, Gaebler-Spira D, Zawacki L, Clark A, Boyniewicz K, deRegnier R-A,


Nursing

Rosemarie King:
King, RB, Vertiz, K, Bode, R, Hahn E. “Development and Validation of a Measure of Spinal Cord Injury Skin Care Knowledge” grant submitted to NIDRR March 5, 2012.

Reviewer, Research in Nursing & Health and Disability and Rehabilitation

Member, AHA-ASA Statement writing group for Evidence for Stroke Family Caregiver Interventions.


Allied Health


Center for Aphasia Research

Presentations

Cherney, L. R. Discourse in Aphasia: Assessment and Treatment. One-day workshop presented at Baycrest Hospital, Toronto, Canada (May, 2012).

Comparing anodal and cathodal stimulation in two participants with aphasia. Poster presentation at Clinical Aphasiology Conference, Lake Tahoe, CA (May, 2012).

Patterson, J., Cherney, L. R., Raymer, A., Maher, L. Constraint-Induced language treatment: Time to rethink? Platform presentation at Clinical Aphasiology Conference, Lake Tahoe, CA (May, 2012).

Center for Bionic Medicine

Sensinger, J.S. (2012). The RIC arm. Design of Medical Devices Conference (Minneapolis)


Robert Lipschutz:
Association of Children’s Prosthetic-Orthotic Clinic (ACPOC) Meeting that was April 10 - April 14 in Banff, Alberta Canada -A NOVEL RESEARCH AND CLINICAL APPROACH TO USING GEL LINERS FOR COLLECTION OF SURFACE EMG DATA FOR MYOELECTRIC CONTROL

Robert D. Lipschutz, CP, Blair A. Lock, MSc
-UTILIZING EMG FROM INDIVIDUALS WITH LOWER LIMB AMPUTATIONS TO CONTROL POWERED PROSTHESES

Robert D. Lipschutz, CP, Heather Daley, MSc, Levi J. Hargrove, PhD, Ann M. Simon, PhD, Suzanne B. Finucane, MS, PTA -CLASSIFICATION OF EMG DATA FROM AN INDIVIDUAL WITH CONGENITAL ABNORMALITY OF THE FEMUR: A SINGLE CASE STUDY

Robert D. Lipschutz, CP, Levi J. Hargrove, PhD, Ann M. Simon, PhD, Suzanne B. Finucane, MS, PTA -SYMPOSIUM: PROSTHETIC MANAGEMENT OF PATIENTS WITH QUADRIMEMBRAL LIMB LOSS

Nicole T. Soltys, CP, Robert D. Lipschutz, CP: Advances in Rehabilitation for the Patient with a Lower Extremity Amputation - Rehabilitation Institute of Chicago, May 3 - May 5.


Center for Rehabilitation Outcomes Research

Grants Submitted:
Disability Research Consortium, subcontract to University of Minnesota (Heinemann); Multi-site Collaborative Proposals, SCI Model Systems. Three subcontracts proposed with University of Washington, University of Michigan, University of Pittsburgh (Heinemann); Field Initiated Proposal (Heinemann)

Manuscripts published:


Abstracts published:

Presentations:

Improving Medical Rehabilitation Outcomes. Lecture presented with Jason Raad at the Rehabilitation Psychology annual meeting, Ft. Worth, Texas, February 24, 2012.


Technical Reports:
Awards:

Service Activities:

Allen Heinemann
Grant Reviewer, Patient Centered Outcome Research Institute competition
HBB Innovation Award planning committee
Ability Lab Core Group + Technology / Low Voltage Core Group – Research Hospital Design

NUPOC/Rehabilitation Engineering Research Center

Publications:


Presentations:


Invited Speakers:

Stefania Fatone, PhD, BPO (Hons) was an invited speaker at the Design of Medical Devices Conference, held in Minneapolis, MN, April 10, 2012. Dr Fatone gave a presentation on “Sub-ischial Prosthetic Sockets with Vacuum-Assisted Suspension for Persons with Transfemoral Amputation.”

Craig W. Heckathorne, MS, Research Engineer, was an invited speaker at the annual meeting of the Texas Association of Orthotics and Prosthetics (TAOP), held in San Antonio, TX, April 12-14, 2012. Mr. Heckathorne presented information on the project “Assessing and Responding to the Prosthetic Needs of Farmers and Ranchers.”

Craig W. Heckathorne, MS was a guest lecture for the Biomedical Engineering Dept., Marquette University, Milwaukee, WI, on April 19, 2012. He presented on "Upper-limb Prostheses: Myoelectric Control and Electric-powered Components" in "Rehabilitation Engineering: Prosthetics, Orthotics, Seating & Positioning"

Steven Gard, Ph.D., was invited to participate in a Dept. of Veterans Affairs RR&D Center of Excellence Grant Proposal Review Panel held in Washington, D.C. on April 20, 2012.

Robert D. Lipschutz, CP, was co-organizer and presenter at Advances in Rehabilitation for the Patient with a Lower Extremity Amputation workshop, held at the Rehabilitation Institute of Chicago, May 3 -5, 2012.

Awards:
NIDRR funded research on “Spinal motion during walking in persons with transfemoral amputation with and without low back pain” presented by Stefania Fatone, PhD, BPO(Hons), and Azucena Rodriguez, PhD, was awarded the Howard R. Thranhardt Lecture Award at the 38th American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. Co-authors on this work included Rebecca Stine, MS, and Steven A. Gard, PhD. The Thranhardt Lectures have become the most popular education programs at the Academy Annual Meeting. Thranhardt Lecture finalists are identified as the best abstracts submitted by the profession, recognizing individuals who are committed to advancing orthotic and prosthetic education and research.

Laboratory Visits:
Northwestern University Prosthetics Orthotics Center hosted an all day, open Seminar featuring 3 German-speaking Orthotech traveling fellows. Morning speakers were orthopedic surgeons Martin Berli, MD (Switzerland), Christoph Thaler, MD (Austria), and Michael Pinzur, MD (Loyola University), and rehabilitation engineer Daniel Heitzmann, Dipl Ing (Germany). Afternoon speakers were Stefania Fatone, PhD, Erin Boutwell, MS, Sara Koehler, MS, Kiki Zissimopoulos, MS, Oluseeni Komolafe, PhD, Matty Major, PhD, and Azucena Rodriguez, PhD. NUPOC also hosted a didactic tour through 3 stations: CAD, upper limb prosthetics, and the Jesse Brown VA Medical Center Motion Analysis Research Laboratory.

Northwestern University Prosthetics-Orthotics Center hosted an interactive tour of research and educational facilities for Florian Dennerlein, Dipl Inform, who visited from Fraunhofer Institute, Stuttgart, Germany on March 13, 2012.
Northwestern University Prosthetics-Orthotics Center participated in Biomedical Engineering Recruit day held at the Robert McCormick School for Engineering and Applied Sciences on the Evanston campus on March 29, 2012.

Northwestern University Prosthetics-Orthotics Center hosted an educational tour for geometry students from Elm Place Middle School, Highland Park, IL, on April 2, 2012. Three learning stations demonstrated the application of geometric principles in prosthetics and computer-aided design.

Northwestern University Prosthetics-Orthotics Center hosted an educational tour to display its dedicated and multi-use facilities to Professors Lane Relyea, Jeanne Dunning, and Michael Rea (NU, Weinberg College of Arts and Sciences); and to Paul Weller and Elizabeth Hitchcock (NU Facilities Management) on April 4, 2012.

Northwestern University Prosthetics-Orthotics Center hosted a site visit at the NUPOC Special Collection for Assistant Professor Christofer Stewart, MBA, (Dominican University Graduate School of Library Information Science) on April 18, 2012. His site visit was conducted in partial fulfillment of a Practicum for Megan Carroll (Dominican University) that is jointly supervised by DU-GLIS and NU Galter Health Sciences Library staff.

Northwestern University Prosthetics Orthotics Center participated in Northwestern University’s 18th Annual Take Our Daughters and Sons to Work Day on April 26, 2012. NUPOC presented interactive opportunities for participants to use prostheses and orthoses; and to learn about careers in rehabilitation engineering.

Appointments:

John Brinkmann, CPO/L, MA, has joined NUPOC as an instructor in Prosthetics and Orthotics, as of April 2012.

Nydia Marzán-Harding, CPO/L, has joined NUPOC as a lecturer in Prosthetics and Orthotics, as of April 2012.

Grants Awarded:

Stefania Fatone, PhD and Larissa Pavone, MD (Co-PIs) were awarded a Small Grant from the Orthotic and Prosthetic Education & Research Foundation (OPERF) for their project “Improving Lower Extremity Orthotic Management of Children with Cerebral Palsy.”

Grant Proposal Submissions:

**Letter of Intent Submissions:**


**M.J. Major** "Predictive Factors of Fall Risk in Transtibial Amputees." Letter of Intent submitted to the Department of Veterans Affairs on May 1, 2012.

**Sensory Motor Performance Program**


**Dvorkin AY.** Using visuo-haptic virtual environments for assessment and rehabilitation of attention following brain injury. Department of PT, Tel Aviv University, Israel, March 25, 2012.

**Dvorkin AY.** Using visuo-haptic virtual environments for assessment and rehabilitation of attention following brain injury. Zlotowski Neuroscience Center, Ben Gurion University, Israel, March 14, 2012.

**Zev Rymer:**

Presentation for the Northwestern Advisory Council for Clinical Research (ACCR) monthly lecture: "Research at RIC: Integrating Research and Clinical Care” at Northwestern Memorial Hospital, March 16

Reviewer for Neilsen Foundation Study Section in Los Angeles, CA, March 19-20

Published “An Examination of the Motor Unit Number Index (MUNIX) in Muscles Paralyzed by Spinal Cord Injury” in *IEEE Trans Inf Technol Biomed* (Authors: Li X, Jahanmiri-Nezhad F, Rymer WZ, Zhou P), April

Published "Robustness of muscle synergies underlying three-dimensional force generation at the hand in healthy humans” in the *Journal of Neurophysiology* (Authors: Roh J, Rymer WZ, Beer RF), April

Keynote address at UNC-NCSO Rehabilitation Center Symposium: “Rehabilitation Engineering Research: A Vision for the Future” at Chapel Hill, NC, April 13
Attended Neural Control of Movement (NCM) Annual Conference in Venice, Italy, April 22-26

Symposia presentation at 7th World Congress for NeuroRehabilitation (WCNR): “Perspectives of new technologies in rehabilitation” in Melbourne, Australia, May 18, 2012


**Other Faculty**

**Keith Gordon:**
Grants Submitted:
- American Orthotic & Prosthetic Association
- Gordon and Major (coPIs)
- Pilot Grant Program: "Lateral Stability of Individual with Transtibial Amputation"

Presentations: Edward Hines, Jr. VA Hospital, Research Day, April 26, 2012

**Kristi Kirschner:**
Kirschner KL, Kothari S, Heller W, Mukherjee D, Morhardt D. Does brain injury or a brain disease constitute a sort of "death?"  *PM&R* 2012;4(1):52-8


Presented “Whose story is it?” Panel presentation with Joanne Jacobson PhD and Carol Schilling PhD at *The Examined Life: Writing, Humanities and the Art of Medicine.* Iowa City, Iowa, 4/20/12.


**Lee Miller:**
Flint RD, Ethier C, Oby ER, Miller LE, and Slutzky MW. Local field potentials allow


Abstracts: