BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Sandra L. Poliachik, Ph.D.	Neuroinformatics Support Analyst
eRA COMMONS USER NAME (credential, e.g., agency login) slpoliachik	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Virginia Polytechnic Institute & State Univ., VA	BS	1987	Mechanical Engineering
Virginia Polytechnic Institute & State Univ, VA	MS	1991	Mechanical Engineering
University of Washington, Seattle, WA	PhD	2001	Bioengineering
University of Washington, Seattle, WA	Sr. Fellow	2007	Bone Biology
University of Washington, Seattle, WA	Act Asst Prof	2010	Bone Biology Ultrasound
Seattle Children's Hospital, Seattle, WA	Analyst	2010	Neurology Diagnostics
University of Washington	Affiliate	2012	Applied Physics Laboratory

A. Personal Statement

The goal of the proposed research is to investigate the mechanisms of muscle change in FSHD, and to evaluate the effectiveness of treatment trials. Specifically, I will assist with the management and analysis of MRI data to quantify the amount of edema in specific muscles in order to evaluate the success of the treatment trial. This effort will be aided by my unique experience and training in ultrasound and radiological evaluations in musculoskeletal biology. I work closely with Drs. Friedman, Shaw, and Mr. Budech, collaborative relationships that will facilitate this work.

B. Positions and Honors

1987-9 Engineer I, Newport News Shipbuilding, Newport News VA
1991-6 Senior Engineer, The Boeing Company, Everett WA
1998-9 Instructor, Department of Diagnostic Ultrasound, Seattle University
2001-7 Senior Fellow, Orthopaedics Science Laboratories, Department of Orthopaedics and Sports Medicine, University of Washington
2004-5 Instructor, Department of Physical Science, Skagit Valley College, Mount Vernon, WA
2007-10 Acting Assistant Professor, Orthopaedics Science Laboratories, Department of Orthopaedics and Sports Medicine, University of Washington
2010-pres Neuroinformatics Support Analyst, Neurology Diagnostics, Seattle Children's Hospital
2012-pres Affiliate, Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington

Honors

2001 2nd Prize, Student Paper Contest for Biomedical Ultrasound/Bioresponse to Vibration presentation at 141st Meeting of the Acoustical Society of America, Chicago
2000 Fellowship to Physical Acoustics Summer School, supported by Office of Naval Research
2007 Finalist, Orthopaedic Research Society New Investigator Recognition Award, San Diego

C. Selected peer-reviewed publications

1. Poliachik SL, Chandler WL, Mourad PD, Bailey MR, Bloch S, Cleveland RO, Kaczkowski P, Keilman G, Porter T, Crum LA. Effect of high-intensity focused ultrasound on whole blood with and without microbubble contrast agent, Ultrasound Med Biol 1999; 25(6): 991-998. PMID: 10461729
2. Poliachik SL, Chandler WL, Mourad PD, Ollos RJ, Crum LA. Activation, aggregation and adhesion of platelets exposed to high-intensity focused ultrasound. Ultrasound Med Biol 2001; 27(11):1567-1576. PMID: 11750756

3. Srinivasan S, Agans SA, King KA, Moy NY, Poliachik SL, Gross TS. (2003). Enabling bone formation in the aged skeleton via rest-inserted mechanical loading, *Bone*, 33(6):946-55. PMID: 14678854
4. Poliachik SL, Chandler WL, Ollos RJ, Bailey MR, Crum LA. The relation between cavitation and platelet aggregation during exposure to high-intensity focused ultrasound. Ultrasound Med Biol 2004; 30(2):261-269. PMID: 14998678
5. Srinivasan S, Ausk BJ, Poliachik SL, Warner SE, Richardson T, Gross TS. Rest-Inserted Loading Rapidly amplifies the response of bone to small increases in strain and load cycles. J Appl Physiol; 102(5): 1945-1952, May 2007. PMID: 17255366
6. Poliachik SL, Agans SC, Threet D, Srinivasan S, Gross TS. Mechanical loading elevates osteoblast activity in C3H/HeJ Mice. Bone 2008;42:653-659. PMID: 18280231
7. Poliachik SL, Bain SB, Threet D, Huber P, Gross TS. Transient muscle paralysis disrupts bone homeostasis by rapid degradation of bone morphology. Bone (2009). PMID: 19857614
8. Gross TS, Poliachik SL, Prasad J, and Bain SD. The effect of muscle dysfunction on bone mass andmorphology. J Musculoskelet and Neuronal Interact 2010; 10(1):25-34. PMID: 20190377
9. Khanna PC, Poliakov AV, Ishak GE, Poliachik SL, Friedman SD, Saneto RP, Novotny EJ Jr, Ojemann JG, Shaw DW. Preserved interhemispheric functional connectivity in a case of corpus callosum agenesis. Neuroradiology. 2012 Feb;54(2):177-9. PMID: 21553342
10. Aliprantis AO, Stolina M, Kostenuik PJ, Poliachik SL, Warner SE, Bain SD, Gross TS. Transient muscle paralysis degrades bone via rapid osteoclastogenesis. FASEB J. 2011 Nov 28. PMID: 22125315
11. Friedman SD, Poliachik SL, Carter GT, Budech CB, Bird TD, Shaw DW. The magnetic resonance imaging spectrum of facioscapulohumeral muscular dystrophy. Muscle Nerve 2012; Apr;45(4):500-6. PMID: 22431082
12. Poliachik SL, Friedman SD, Carter GT, Parnell SE, Shaw DW. Skeletal muscle edema in muscular dystrophy: clinical and diagnostic implications. Phys Med Rehabil Clin N Am. 2012 Feb;23(1):107-22. PMID: 22239878
13. Wein M, Jones D, Shim J, Sulyanto R, Lazarevic V, Poliachik SL, Gross T, Glimcher L. Control of bone resorption in mice by Schnurri-3. Proc Natl Acad Sci USA. 2012 May22;109(21):8173-8 [Epub 2012 May 9]. PMID: 22573816
14. Ishak GE, Poliakov AV, Poliachik SL, Saneto RP, Novotny EJ Jr, McDaniel S, Ojemann JG, Shaw DW, Friedman SD. Tract-Based Spatial Statistical Analysis of Diffusion Tensor Imaging in Pediatric Patients with Mitochondrial Disease: Widespread Reduction in Fractional Anisotropy of White Matter Tracts. AJNR Am J Neuroradiol. 2012 Apr 12. PMID: 22499843

D. Research Support

Current

Title: SC090510 - “Focused Ultrasound Mitigates Bone Loss Following Spinal Cord Injury-Induced Paralysis”
PI: Sandra L. Poliachik, Ph.D.
Agency: Department of Defense (DOD) Spinal Cord Injury Research Program (SCIRP) of the Office of the Congressionally Directed Medical Research Programs (CDMRP)
Type: Exploration − Hypothesis Development Award (EHDA), Period: 9/10 – 9/13
The goal of this project was to assess whether focused ultrasound applied to paralyzed muscle will mitigate bone loss associated with muscle paralysis.

No Grant #: NW Friends of FSHD Research (Friedman PI) 1/01/2012-1/31/2014
Longitudinal Progression of Edema and Fatty Replacement of Lower Extremity Muscles in Facioscapulohumeral Muscular Dystrophy (FSHMD)
The goal of this study is to evaluate the longitudinal progression of STIR+ signal and fatty replacement in thigh and calf in FSHD subjects.
Role: Co-Investigator

Completed

No Grant Number: NW Friends of FSHD Research (Friedman/Shaw Co-PIs) 8/01/2008-8/1/2010
MR Evaluation of the Pattern of Involvement in Skeletal Muscle of Subjects with Facioscapulohumeral

Muscular Dystrophy (FSHMD)
Study to evaluate quantitative features in calf musculature in FSHD using MRI.
Role: Co-Investigator