

CURRICULUM VITAE

MATTHEW J. PETERSON, PhD

BUSINESS ADDRESS

HSR&D Center of Innovation on Disability and Rehabilitation Research (CINDRR)
8900 Grand Oak Circle
Tampa, FL 33637-1022
Matthew.Peterson1@va.gov

EDUCATION

2009 Doctor of Philosophy, Biomedical Engineering, University of Florida, Gainesville, FL, Dissertation: Pressure Ulcer Prevention Research
2007 Master of Engineering, Biomedical Engineering, University of Florida, Gainesville, FL
2004 Bachelor of Science (summa cum laude), Biomedical Engineering, Saint Louis University, St. Louis, MO, Senior Project: Mouse Fetal Membranes: Pipet Aspiration

PROFESSIONAL EXPERIENCE

2016 – present Senior Clinical Project Manager, Exactech, Gainesville, FL
2010 – present Research Biomedical Engineer, HSR&D Center of Innovation on Disability and Rehabilitation Research (CINDRR), Department of Veterans Affairs, James A. Haley Veterans' Hospital, Tampa, FL
2016 – present Courtesy Assistant Professor, Department of Biomedical Engineering, University of Florida, Gainesville, FL
2013 – present Courtesy Assistant Professor, Department of Computer Science and Engineering, University of South Florida, Tampa, FL
2013 – 2016 Courtesy Assistant Professor, Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, FL
2009 – 2010 Postdoctoral Researcher, Department of Anesthesiology, University of Florida, Gainesville, FL
2004 – 2009 Graduate Research Assistant, Department of Biomedical Engineering, University of Florida, Gainesville, FL, Department of Anesthesiology, University of Florida, Gainesville, FL

ONGOING FUNDED RESEARCH

Source: DOD SCIRP Investigator-Initiated Research Award (SC150099)

Title: An Automated Pressure Ulcer Monitoring System to Improve Pressure Ulcer Healing Outcomes for Veterans with SCI

Dates: 2016 – 2019

Award: \$624,287

Role: Principal Investigator

The goal of the proposed three-year study is to automate pressure ulcer (PrU) measurement to track PrU healing progress for Veterans with SCI through development and evaluation of a computer aided PrU Monitoring System (PrUMS). PrUMS will provide a fast, easy, objective, and low-cost measure of the SCI-PUMT and wound volume. Given the high prevalence and cost of PrUs in SCI, an objective, valid, and reliable measurement of PrU healing is needed for improving the consistency, quality, and effectiveness of clinical care.

COMPLETED FUNDED RESEARCH

Source: Rehabilitation Research & Development (RR&D) Service (F0796-R)

Title: Active and passive gait perturbation systems to improve fall risk assessment

Dates: September 2012 – September 2015

Award: \$826,178

Role: Principal Investigator

The goals of this study were to design, construct, and test novel active and passive gait perturbation systems to evaluate fall avoidance and recovery ability. This was the first multiple-perturbation system (slip, trip, drop away surface, translating floor surface) used to evaluate fall recovery. This system evaluated the subject's ability (kinetics, kinematics, and gait parameters) to recover from impending falls to offer rehabilitation strategies to prevent future falls.

Source: DOD CDMRP SCIRP Hypothesis Development Award (SC090613)

Title: Spinal Cord Injury (SCI) Survey to Determine Pressure Ulcer Vulnerability in the Outpatient Population

Dates: October 2010 – December 2015

Award: \$133,221

Role: Principal Investigator

The purpose of this study was to identify risk factors that result in pressure ulcers in spinal cord injured patients, including ultrasound imaging to measure anthropometric skin thicknesses.

Source: VHA National Center for Patient Safety

Title: Evaluation of protective properties of commercially available medical helmets

Dates: October 2014 – September 2015

Award: \$75,000

Role: Principal Investigator

The major goals of this project were to evaluate the protective properties of commercially available medical helmets to determine which helmets were best able to

attenuate impacts and prevent head and traumatic braininjuries (e.g., concussions, subdural hematomas) from falls from standing height.

Source: SCI QUERI Locally Initiated Project

Title: Skin self-inspection for pressure ulcer prevention in SCI

Dates: May 2013 – February 2014

Award: \$25,000

Role: Co-Principal Investigator with Harrow

The purpose of this project was to conduct a comprehensive review of low-cost technology devices for use in skin self-inspection in SCI subpopulations, based on disability and body habitus, and performed laboratory-based trials to assess human factors and the ability to detect erythema and Stage I pressure ulcers.

Source: VA Central Office (SPTOF00A1)

Title: Threats to skin integrity associated with the use of patient handling slings in Veterans with SCI

Dates: 2011-2013

Award: \$600,000

Role: Principal Investigator|

The purpose of this study was to evaluate pressure ulcer risk with use of patient handling slings in persons with SCI, identify anatomical areas at high risk, and provide clinical guidance for daily use to be implemented in VA SCI Centers.

Source: Rehabilitation Research & Development (RR&D) Service

Title: Service Dogs for Veterans with Post Traumatic Stress Disorder (PTSD)

Dates: 2011-2014

Award: \$950,000

Role: Co-Investigator (PI: Groer)

The purpose of this study was to evaluate the use of service dogs for veterans who have been diagnosed with PTSD.

Source: Rehabilitation Research & Development (RR&D) Service

Title: Supplemental funds for purchase of pressure ulcer prevention and detection research equipment

Dates: March 2011

Award: \$85,000

Role: Principal Investigator

The purpose of this funding was to purchase interface pressure mapping equipment and high-frequency, high-resolution ultrasound imaging equipment for pressure ulcer prevention and early detection research.

ARTICLES IN PEER-REVIEWED JOURNALS

2018 Barks L, Garvan C, Crane B, Peterson MJ, Brown LM, Powell-Cope G. Reliability and criterion-related validity of the seated posture scale. *Rehabilitation Nursing*. 2018; Epub ahead of print.

2016 Thomason SS, Powell-Cope G, Peterson MJ, Guihan M, Wallen ES, Olney CM, Bates-Jensen B. A multi-site quality improvement project to standardize the assessment of pressure ulcer healing in veterans with spinal cord injuries/disorders. *Advances in Skin and Wound Care*. 2016;29(6):269-276.

2015 Peterson MJ, Jongprasithporn M, Carey SL. Evaluation of Fall Recovery and Gait Adaptation to Medial and Lateral Gait Perturbations. *Biomedical sciences instrumentation*. 2015;51:198-205.

Peterson MJ, Kahn JA, Kerrigan MV, Gutmann JM, Harrow JJ. Pressure Ulcer Risk of Patient Handling Sling Use. *Journal of Rehabilitation Research and Development*. 2015;52(3):291-300.

2013 Peterson MJ, Gravenstein N, Schwab WK, van Oostrom JH, Caruso LJ. Patient repositioning and pressure ulcer risk—Monitoring interface pressures of at-risk patients. *Journal of Rehabilitation Research and Development*. 2013;50(4):477-88.

2010 Peterson MJ, Schwab W, van Oostrom JH, Gravenstein N, Caruso LJ. Effects of turning on skin-bed interface pressures in healthy adults. *Journal of Advanced Nursing*. 2010;66(7):1556-1564.

2008 Peterson MJ, Schwab W, McCutcheon K, van Oostrom JH, Gravenstein N, caruso LJ. Effects of elevating the head of bed on interface pressure in volunteers. *Critical Care Medicine*. 2008;36(11):3038-3042.

PRESENTATIONS AT NATIONAL AND INTERNATIONAL MEETINGS

2018 2018 Orthopaedic Research Society (ORS) Annual Meeting, New Orleans, Louisiana, March 10-13, 2018.

Peterson MJ, Knisely A, Aldridge J, Dunitz S: Early Clinical Outcomes of a Neck Preserving Femoral Hip Stem.

Peterson MJ, Najmabadi Y, Robinson R: Early Clinical Performance and Implant Fixation of a 3D-Printed Acetabular Cup.

Dai Y, Peterson MJ, Wurm K: Validation of Full-Length Lower Limb Radiographs for TKA Postoperative Coronal Alignment.

Monzon DG, Peterson MJ, Casteulani AC: 6-years Minimum Follow-Up Of A Contemporary Femoral Hip Stem: Assessing The Clinical And Radiographic performance And The Impact Of Design On Trunnionosis. Annual Congress. 19th European Federation of National Associations of Orthopaedics and Traumatology (EFORT) Congress. Barcelona, Spain, May 30-June 1, 2018.

Dai Y, Peterson MJ, Wurm K: Accuracy and reliability of full-length lower limb radiographs in the measurement of coronal alignment. Annual Meeting. The 18th Annual Meeting of the International Society for Computer Assisted Orthopaedic Surgery (CAOS), Beijing, China, June 6-9, 2018.

2017 International Society for Technology in Arthroplasty (ISTA) 2017, 30th Annual Congress, Seoul, South Korea, September 20-23, 2017

Peterson MJ, Knisely A, Aldridge J, Dunitz S, Barnes B: Early Clinical Performance of a Neck Preserving Femoral Hip Stem.

Dai Y, Peterson MJ, Wurm K: Accuracy and reliability of full-length lower limb radiographs in the measurement of coronal alignment.

Dai Y, Jung A, Hamad C, Peterson MJ: Preoperative Coronal Alignment in Total Knee Arthroplasty: As Assessment on Patients from Three Countries.

Stulberg B, Huddleston J, Giordano G, Hamad C, Rueff M, Angibaud L, Peterson MJ: Early Alignment Results of a Navigated Revision Total Knee Application.

2015 Peterson MJ, Jongprasithporn M, Carey SL: Evaluation of Fall Recovery and Gait Adaptation to Medial and Lateral Gait Perturbations. Annual Meeting. 2015 Rocky Mountain Bioengineering Symposium, Salt Lake City, Utah, April 10-12, 2015.

Peterson MJ, Jongprasithporn M, Carey SL: Gait Adaptations To Unexpected Drop-Away Flooring Perturbations. Annual Conference. The American Society of Biomechanics, Columbus, Ohio, August 5-8, 2015.

Peterson MJ, Jongprasithporn M, Carey SL: Evaluation of Fall Recovery and Gait Adaptation to Tripping Perturbations. Annual Meeting. Biomedical Engineering Society, Tampa, Florida, October 7-10, 2015.

2014 Peterson MJ, Harrow J: Skin self-inspection for pressure ulcer prevention in SCI: an evaluation of devices. Annual Meeting. Paralyzed Veterans of America, Summit 2014, Las Vegas, Nevada, August 26-28, 2014.

Peterson MJ, Gutmann J, Harrow J, Kerrigan M, Kahn J: Identifying Pressure Ulcer Risk of Patient Handling Sling Use with Interface Pressure Mapping. Annual Meeting. Expert Scientific Meeting (ESM) 2014, Boston, Massachusetts, July 2-6, 2014.

Peterson MJ, Kerrigan M, Gutmann J, Gower K, Kahn J: Pressure Ulcer Risk of Patient Handling Sling Use. Annual Meeting. Safe Patient Handling Conference East, Orlando, Florida, March 24-28, 2014.

2013 Peterson MJ, Gutmann J, Harrow J, Kerrigan M, Kahn J: Pressure Ulcer Risk of Patient Handling Sling Use for Veterans with SCI. Annual Meeting. Academy of Spinal Cord Injury Professionals, Las Vegas, Nevada, September 2-4, 2013.

2011 Peterson MJ, Lloyd J, Gutmann J: Threats to Skin Integrity Associated with Use of Patient-Handling Slings. Annual Meeting. Academy of Spinal Cord Injury Professionals, Las Vegas, Nevada, September 5-7, 2011.

Peterson MJ, Gravenstein N, Schwab W, van Oostrom JH, Caruso L: Patient Repositioning and Pressure Ulcer Risk—Monitoring Interface Pressures of ICU

Patients. Biennial Conference. National Pressure Ulcer Advisory Panel, Las Vegas, Nevada, February 25-26, 2011.

2010 Peterson MJ, Gravenstein N, Schwab W, van Oostrom JH, Caruso L: Monitoring the skin-bed interface pressure profiles of intensive care unit patients at risk for pressure ulcer formation. Annual Patient Safety Congress. National Patient Safety Foundation, Orlando, Florida, May 17-19, 2010.

2006 Peterson MJ, Schwab W, McCutcheon K, Gravenstein N, Caruso L: Head elevation to reduce ventilator associated pneumonia and skin-ICU bed interface pressures. Annual Meeting. American Society of Anesthesiologists, Chicago, Illinois, October 14-18, 2006.

Peterson MJ, Schwab W, McCutcheon K, Gravenstein N, Caruso L: Side turning does not reliably reduce skin-bed interface pressure. Annual Meeting. American Society of Anesthesiologists, Chicago, Illinois, October 14-18, 2006.

Peterson MJ, Schwab W, McCutcheon K, Gravenstein N, Caruso L: Head elevation to reduce ventilator associated pneumonia and skin-ICU bed interface pressures. Annual Meeting. American Society of Critical Care Anesthesiologists, Chicago, Illinois, October 13, 2006.

Peterson MJ, Schwab W, McCutcheon K, Gravenstein N, Caruso L: Side turning does not reliably reduce skin-bed interface pressure. Annual Meeting. American Society of Critical Care Anesthesiologists, Chicago, Illinois, October 13, 2006.

PRESENTATIONS AT REGIONAL MEETINGS

2010 Peterson MJ, Gravenstein N, Schwab W, van Oostrom JH, Caruso L: Monitoring the skin-bed interface pressure profiles of intensive care unit patients at risk for pressure ulcer formation. Department of Veterans Affairs Research Symposium. VISN 7 and VISN 8 Research in the Southeast - RFPs to Outcomes: Translating Research to Practice, Orlando, Florida, July 21-23, 2010.

LOCAL PRESENTATIONS

2015 Peterson MJ, Jongprasithporn M, Carey S: Active Gait Perturbations to Improve Fall Risk Assessment: Young Adult Results. VA Research Day, Tampa, Florida, May 20, 2015.

2014 Peterson MJ, Jongprasithporn M, Carey S: Active and Passive Gait Perturbation Systems to Improve Fall Risk Assessment: Protocols and Preliminary Results. VA Research Day, Tampa, Florida, June 19, 2014.

2013 Peterson MJ, Kerrigan M, Gutmann J, Gower K, Kahn J: Pressure Ulcer Risk of Patient Handling Sling Use. VA Research Day, Tampa, Florida, April 25, 2013.

2012 Groer S, Bryant S, McGovern S, Barks L, White K, Peterson MJ, Byrd R, Longs M, Sutton B, Barnett B, Lapcevic A, McCranie M, Gibson CA: Service Dogs for Veterans with PTSD. VA Research Day, Tampa, Florida, April 26, 2012.

2011 Peterson MJ, Gravenstein N, Schwab W, van Oostrom JH, Caruso L: Patient Repositioning and Pressure Ulcer Risk—Monitoring Interface Pressures of ICU Patients. VA Research Day, Tampa, Florida, April 14, 2011.

2011 Peterson MJ, Lloyd J, Gutmann J: Threats to Skin Integrity Associated with Use of Patient-Handling Slings. VA Research Day, Tampa, Florida, April 14, 2011.

WHITE PAPERS

2017 Peterson MJ, Dunitz S, Najmabadi Y: The Novation® Element® Femoral Stem—Assessing Short-Term Clinical Performance Including the Impact of Design on Trunnionosis. Exactech, Inc. 044H Rev. A 2017 0417.

2017 Peterson MJ, Robinson R, Najmabadi Y: Assessing Short-Term Clinical Performance of Novation® Crown Cup® and Novation® InteGrip® Acetabular Cups with Emphasis on the Impact of Additive Manufacturing Techniques. Exactech, Inc. 045H Rev. A 2017 0417.

2017 Peterson MJ, Feskanin H, Najmabadi Y: Assessing the Long-Term Clinical Performance of Connexion GXL® Polyethylene Acetabular Liners in Total Hip Arthroplasty. Exactech, Inc. 046H 2017 0317.

BOOK CHAPTERS

2008 Peterson MJ, Fitzgerald KE, Caruso LJ. Prevention of Pressure Injuries in the Intensive Care Unit. In: Gabrielli A, Layon AJ, Yu M, eds. Civetta, Taylor, and Kirby's Critical Care. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2008:2495-2502.

COMMITTEES

2016 University of South Florida IRB Committee Member—VA representative
2014 – 2016 Co-Chair, Spinal Cord Injury Research Initiative

James A. Haley Veterans' Hospital & CINDRR

2013 – 2016 Research & Development Committee Member, James A. Haley Veterans' Hospital

2012 – 2015 Member, Pressure Ulcer Workgroup

Spinal Cord Injury Quality Enhancement Research Initiative (SCI QUERI)

2011 – 2013 Chair, Meeting of the Minds Seminar

HSR&D/RR&D Center of Excellence: Maximizing Rehabilitation Outcomes

PROFESSIONAL MEMBERSHIPS

2017 – present Orthopaedic Research Society

HONORS AND AWARDS

2013 Scholar, 2013 NIH Mobile Health (mHealth) Summer Training Institute, University of California Los Angeles (UCLA), Los Angeles, CA
2012 Scholar, 10th Annual Intensive Workshop on Grant Writing, Preparation, and Submission in Rehabilitation Research Enhancing Rehabilitation Research in the South, Charlottesville, VA
2011 Young Investigator Poster Award National Pressure Ulcer Advisory Panel, Biennial Conference, Las Vegas, NV
2010 Patient Safety Research Finalist National Patient Safety Foundation
2004 – 2008 Alumni Fellowship, full tuition waiver and yearly stipend University of Florida, Gainesville, FL
2004 Alpha Chi National College Honor Society
2004 Golden Key National Honor Society
2002 Mathematics Award, Department of Mathematics, Saint Louis University, St. Louis, MO
2001 Calculus Award, Department of Mathematics, Saint Louis University, St. Louis, MO
2000 – 2004 Dean's Scholarship, tuition waiver Saint Louis University, St. Louis, MO

TEACHING EXPERIENCE

2005 – 2006 Graduate Teaching Assistant, Department of Biomedical Engineering, University of Florida, Gainesville, FL, Courses taught: Biomedical Engineering Seminar, Problem Based Learning, Clinical Preceptorship
2003 – 2004 Teaching Assistant, Department of Biomedical Engineering, Saint Louis University, St. Louis, MO, Courses taught: Biomaterials
2001 – 2004 Teaching Assistant, Department of Chemistry, Saint Louis University, St. Louis, MO, Courses taught: Chemistry Laboratory

THESIS COMMITTEES

2012 – 2013 Julie Kahn, Committee Co-Chair, Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, FL

EDITORIAL ACTIVITIES

2015 – present NIH Peer Reviewer: Nursing and Related Clinical Sciences Study Section, ad-hoc reviewer
2015 Ad-hoc Reviewer, Rehabilitation Nursing Journal
2014 – present Ad-hoc Reviewer: Journal of Rehabilitation Research and Development, Journal of Wound Care, Chronic Wound Care Management and Research, and The Scientific World Journal
2012 Ad-hoc Reviewer, American Journal of Critical Care
2011 – present Editorial Review Board, Journal of Nursing Education and Practice
2009 Ad-hoc Reviewer, Critical Care Medicine