Funded Research | Dissemination

Satria Ardianuari

OPERF 2022

Publication

Ardianuari, S., Cyr, K.M., Neptune, R.R., Klute, G.K., 2024. Should individuals with unilateral transtibial amputation carry a load on their intact or prosthetic side? J. Biomech. 112385. https://doi.org/10.1016/J.JBIOMECH.2024.112385.

Kiley Armstrong

Mentored Pilot Grant 2024

Presentation

Armstrong K, Lee G, Cavanaugh M, et al. Investigating O&P educators' biases toward people with disabilities. Poster presented at: AAOP Annual Meeting & Scientific Symposium; 2026; Nashville, TN.

Brian Kaluf

COPL 2017

Publication

Kaluf, Brian, Courtney Cox, and Eric Shoemaker. "Hydraulic-and microprocessor-controlled ankle-foot prostheses for limited community ambulators with unilateral transtibial amputation: Pilot study." JPO: Journal of Prosthetics and Orthotics 33.4 (2021): 294-303. https://journals.lww.com/jpojournal/abstract/2021/10000/hydraulic__and_microprocessor_controlled.7.aspx

Christopher Hovorka

COPL 2017

Presentation

American Orthotic and Prosthetic Association National Assembly, September 25-28, 2019, San Diego, CA

OPFER 2012

Publication

Hovorka CF, Kogler GF, Gregor RJ, Chang Y-H. Material properties and application of biomechanical principles provide significant motion control performance in experimental ankle foot orthosis-footwear combination. Clinical Biomechanics. 2021;82.
https://doi.org/10.1016/j.clinbiomech.2021.105285

Presentations

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Maximizing orthosis stiffness and leverage isolates control of ankle motion. 4th Annual Human Movement Variability Conference, June 16, 2019, Omaha, NE. (winner: Best Scientific Presentation, AMTI Force and Motion).

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Maximizing leverage and stiffness maximizes motion control performance of AFOs. American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. February 15-17, 2018, New Orleans, LA.

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Influencing motor behavior through orthotic constraint of lower limb motion. Georgia Society of Orthotists and Prosthetists Annual Meeting. March 3-4, 2017, Atlanta, GA.

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Motion control of a novel AFO maximizing leverage and stiffness – Gait study. American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. February 19-21, 2015, New Orleans, LA.

Hovorka CF, Hsieh K, Kogler GF, Gregor RF, Chang Y-H. Motion control of a novel AFO maximizing leverage and stiffness – Static loading study. American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. February 19-21, 2015, New Orleans, LA.

Hovorka CF, Hseih C. In vivo and in vitro validation of a custom articulated AFO. American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. February 26-28, 2014, Chicago, IL.

OPERF 2010

Publications

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Selective orthotic constraint of lower limb movement reveals new insights into neuromuscular adaptation. Frontiers in Rehabilitation Sciences Special Edition – Advances in Technology Assisted Rehabilitation. 2024:5.
doi: 10.3389/fresc.2024.1354115

Hovorka CF, Kogler GF, Gregor RJ, Chang Y-H. Relationship between muscle activation and ankle motion in an ankle foot orthosis-footwear combination. Proceedings of the International Society of Biomechanics / American Society of Biomechanics. 2019, p. 199.

Presentations

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Soleus muscle activation during AFO-footwear combination use reveals new insights on neuromuscular adaptation to constraint of ankle motion. American Orthotic and Prosthetic Association National Assembly. September 28-October 1, 2022. San Antonio, TX.

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Relationship between Tibialis Anterior muscle activation and ankle motion in an ankle foot orthosis-footwear combination. International Society for Prosthetics and Orthotics World Congress. October 5-9, 2019. Kobe, Hyogo, Japan.

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Relationship between muscle activation and ankle motion in an ankle foot orthosis-footwear combination. International / American Society of Biomechanics. July 31-August 4, 2019, Calgary, Alberta, Canada.

Hovorka CF, Kogler GF, Gregor RF, Chang Y-H. Influencing motor behavior through orthotic constraint of lower limb motion. Georgia Society of Orthotists and Prosthetists Annual Meeting. March 3-4, 2017, Atlanta, GA.

- COPL and OPERF supported education to pursue PhD studies and as part of the studies I examined approached to teaching and learning in O&P. Several publications were the result of that support such as:

  Hovorka CF. Transitioning the Orthotics and Prosthetics profession to a client-centric and values-based care model that leverages digital workflows. Canadian Prosthetics and Orthotics Journal – Special Edition – Designing the Future: 3-D Printing's Revolution in Prosthetics and Orthotics; 2023;6(2):6:1-8. https://jps.library.utoronto.ca/index.php/cpoj/article/view/42221

  Hovorka CF, Raschke SU. Orthotics and prosthetics workforce demands: Entry-level practice considerations. Journal of Prosthetics and Orthotics. 2023;35(3S):11-15. https://journals.lww.com/jpojournal/citation/2023/07002/challenges_of_and_opportunities_for_o_p_education.1.aspx

  Kogler GF, Hovorka CF. Academia's role to drive change in the Orthotics and Prosthetics profession. Canadian Prosthetics and Orthotics Journal. 2021;4(2). https://jps.library.utoronto.ca/index.php/cpoj/article/view/36673/28349

Pilot data that resulted in extramural funding and publications:

The funding from COPL and OPERF enabled collaboration with another investigator on a National Science Foundation Career Award Grant and contributed to 7 intramural university research funding awards
Hovorka CF, Kogler GF, Gregor RJ, Chang Y-H. Contribution of footwear sole shape and stiffness to maintaining effective leg rollover during gait in an Ankle Foot Orthosis-Footwear Combination. International Society for Prosthetics and Orthotics, June 16-19, 2025, Stockholm, Sweden.

Hovorka CF. (Invited Speaker). Navigating the Rapids: Leveraging digital technologies to move the Orthotics and Prosthetics profession toward client-centric values-based care. 3-D Printing in Assistive

Technology and Orthotic and Prosthetics – An Interactive Workshop. British Columbia Institute of Technology Centre for Applied Research and Innovation. September 29-30, 2023, Vancouver, British Columbia, Canada.

(Hovorka CF, Campbell R. (Session Co-Chair). FPS: Orthotics Lower Limb. AFO Neuromuscular Disease and Stroke. International Society for Prosthetics and Orthotics World Congress. April 24-27, 2023, Guadalajara, Mexico.

Hovorka CF (Session Co-Chair). Lower Limb Orthotics – Neurological Free Paper Session. International Society for Prosthetics and Orthotics World Congress. October 5-9, 2019. Kobe, Hyogo, Japan.

Noah Rosenblatt

COPL 2013

Publications

Rosenblatt, Noah J., et al. "Effects of vacuum-assisted socket suspension on energetic costs of walking, functional mobility, and prosthesis-related quality of life." JPO: Journal of Prosthetics and Orthotics 29.2 (2017): 65-72.

Rosenblatt, Noah J., and Tess Ehrhardt. "The effect of vacuum assisted socket suspension on prospective, community-based falls by users of lower limb prostheses." Gait & Posture 55 (2017): 100-103.

Presentations

N.J. Rosenblatt, T. Ehrhardt, A. Bauer, R. Caldwell, R. Fergus. Energetic cost of gait and functional mobility: a comparison of vacuum, suction, and sleeve suspensions. Midwest Chapter of the American Academy of Orthotists and Prosthetist Annual Meeting, 2015 (oral)

T. Ehrhardt, N.J. Rosenblatt, A. Bauer, R. Caldwell. The influence of Vacuum-Assisted Suspension On the Energetic Costs of Walking in Lower Limb Amputees. University of Illinois at Chicago – Recognition for Achievement, Research & Excellence, 2015 (poster)

N.J. Rosenblatt, T. Ehrhardt, A. Bauer, R. Caldwell, R. Fergus. Energetic cost of gait and functional mobility: a comparison of vacuum, suction, and sleeve suspensions. American Academy of Orthotists and Prosthetist Annual Meeting, 2015 (oral)

Kinsey Herrin

OPERF 2021

Publications

K.R. Herrin, E. Upton, and A.J. Young, "Towards meaningful community ambulation in individuals post stroke through use of a smart hip exoskeleton: a preliminary investigation," Assistive Technology, 2023. DOI: 10.1080/10400435.2023.2239555
K.R. Herrin, E. Upton, D. Molinaro, C. Ruarks, A. Ojeifoh, A. Young. “Enabling Meaningful Community Ambulation in Stroke Survivors through Use of a Smart Hip Exoskeleton,” Podium. American Academy of Orthotists and Prosthetists. Nashville, TN. March 2023.

C. Ruarks, A. Ojeifoh, E. Upton, A. Young, K.R. Herrin. “Dual-Task Paradigms in Post-Stroke Individuals using a Smart Hip Exoskeleton,” Poster. American Academy of Orthotists and Prosthetists. Nashville, TN. March 2023. [Received 3rd place Student Poster award]

C. Ruarks, A. Ojeifoh, E. Upton, A. Young, K.R. Herrin. “Dual-Task Paradigms in Post-Stroke Individuals Using a Smart Hip Exoskeleton,” Podium. Georgia Society of Orthotists and Prosthetists. Alpharetta, GA. April 2023.

OPERF 2011

Publication

K.R. Herrin and M. Geil, "A comparison of orthoses in the treatment of idiopathic toe walking: A randomized controlled trial," Prosthetics and Orthotics International, vol. 40, no. 2, pp. 262-269, 2016. DOI: 10.1177/0309364614564023

AAOP CAT : Herrin, K.R. (2014) Critically Appraised Topic: Orthoses for the treatment of idiopathic toe walking. Academy of Orthotists and Prosthetists.

Presentations

K.R. Herrin. “Idiopathic Toe Walking.” ATD Journal Club Gillette Children’s Hospital, Aug 2015.

Geil, M., Herrin, K.R., Rahnama, L., Williams, C., Jarrells, J., Poisal, M., Seargeant, E., Soulis, K. “Use of Nearly-Invisible, Non-restrictive Sensory Insoles as Treatment for Idiopathic Toe Walking: A Case Series,” Podium. American Society of Biomechanics. Atlanta, GA. August 2020.

Herrin, K.R., Barner, K. and Geil, M. “Clinical outcomes after orthotic treatment of idiopathic toe walking AFO vs. FO,” Podium. 38th American Academy of Orthotists and Prosthetists Journal of Proceedings. Atlanta, GA. March 2012.

Geil, M. and Herrin, K.R. (2012) “Is a rigid footplate as effective as an articulated AFO in controlling idiopathic toe walking?” Podium. 38th American Academy of Orthotists and Prosthetists Journal of Proceedings. Atlanta, GA. March 2012.

Pilot data that resulted in extramural funding and publications:

NIH R01 "Personalized Hip vs. Ankle Exoskeleton Assistance with Biofeedback to Enhance Mobility Post-Stroke" PIs: Aaron Young, Greg Sawicki, Trisha Kesar; Co-I: Herrin

Herrin, Kinsey, Pan, Yi-Tsen, Kesar, Trisha, Sawicki, Gregory, Young, Aaron. “Robotic Ankle Exoskeleton and Limb Angle Biofeedback for Assisting Stroke Gait: A feasibility study,” IEEE Robotics & Automation Letters. In press. December, 2024.

Jenny Kent

COPL 2019

Publications

Kent, J. A., Carnahan, K. J., & Major, M. J. (2024). Exploring the effects of increased socket-residual limb coupling integrity via vacuum assisted suspension on prosthetic control: a preliminary study in transtibial prosthesis users. Disability and Rehabilitation, 1-9.

Kent, J. A., Carnahan, K. J., & Major, M. J. (2024). Socket-residuum coupling integrity affects perception of external stimuli: Effects of altering the transtibial interface using vacuum-assisted suspension. Prosthetics and orthotics international, 48(2), 184-189.

Presentations

Kent JA, Carnahan KJ, Severe C, Moore BS, Bommareddy SS, Major MJ. Improving socket-limb coupling may have sensory and control benefits: results of a pilot study. Oral presentation. American Academy of Orthotists and Prosthetists Annual Meeting, Atlanta, GA. March 2022.

Kent JA, Quinlan, J, Carnahan K, Wolin B, Bommareddy S, Major, MJ. The effect of residuum-socket interface integrity on perception and control in individuals with a transtibial amputation. Oral presentation. AOPA National Assembly, [online]. September 2020.

Cody McDonald

COPL 2021

Under Review

McDonald CL, Mitsou L, Hoffman-Finitsis A, Brinkmann J, Bretl S. Explicit and implicit racial attitudes among clinicians, educators, and students in orthotics and prosthetics. Prosthet Orthot Int. 2024 (in review; submitted June, 2024).

Presentations

McDonald CL, Brinkmann J, Mitsou L, Hoffman-Finitsis A, Bretl S. Racial Bias in Orthotics and Prosthetics. American Academy of Orthotists and Prosthetists (AAOP) 50th Annual Meeting and Scientific Symposium, Chicago IL, March 6-9, 2024.

McDonald CL, Brinkmann J, Mitsou L, Hoffman-Finitsis A, Bretl S. Racial Bias in Orthotics and Prosthetics. American Orthotic and Prosthetic Association (AOPA) National Assembly, Indianapolis, In September 6-9, 2023.

Bretl S, Hoffmantis A, Mitsou L, Brinkman J, McDonald CL. Racial Bias in Orthotics & Prosthetics. National Society of Allied Health Annual Conference and Meeting. March 30-April 1, 2023.

OPERF 2020

Publication

McDonald CL, Balkmann GS, Hafner BJ. How do users define success with a lower limb prosthesis? A focus group study. Disability and Rehabilitation. Published online May 25, 2024:1-15. doi:10.1080/09638288.2024.2356013

Presentation

McDonald CL, Balkman G, Shrivastav S, Hafner BJ. Defining Success in Lower Limb Prosthetics: Which Outcomes Matter Most? (AAOP) 49th Annual Meeting and Scientific Symposium, Nashville TN, March 1-4, 2023.

Pilot data that resulted in extramural funding and publications

Qualitative results from the OPERF funded study entitled "Defining success in lower limb prosthetics: Which outcomes matter most?" were used as evidence to support the need for development of a new population-specific outcome measure to assess grief after amputation. This grant proposal was funded through NICHD as a five-year K01 award of $624,992 entitled, "Optimizing health outcomes by improving measurement of grief after amputation with a health equity approach." This project began Jan 1, 2025.

Qualitative research, such as was funded under OPERF, is essential to inform subsequent directions for research inquiry particularly when the intention is to conduct research that is grounded in the priorities of the limb loss community. While this data may not be traditionally considered pilot data, qualitative findings are essential for patient-centered research.

Graci Finco

COPL 2019

Publications

Finco MG, Patterson RM, Moudy SC. A pilot case series for concurrent validation of inertial measurement units to motion capture in individuals who use unilateral lower-limb prostheses. J Rehabil Assist Technol Eng. 2023;10:20556683231182322. Published 2023 Jun 29. doi:10.1177/20556683231182322

Finco MG, McDonald CL, Moudy SC. Distinguishing retrospective fallers from non-fallers in people who use a unilateral lower-limb prosthesis. POI. Accepted Feb 24, 2025. In Press.

Presentations

Finco MG, Moudy SC, Patterson R. Walking Symmetry in Lower Limb Prosthesis Users: Considerations for Clinical Practice and Future Research. American Academy of Orthotists and Prosthetists Annual Meeting and Scientific Symposium. 2021.

Finco MG, McDonald CL, Moudy SC. Distinguishing prospective fallers from non-fallers in people who use a lower-limb prosthesis. American Orthotics and Prosthetics Association. 2021.

Kyle Leister

OPERF 2017

Publication

Leister KR, Wurdeman SR. A walking bout reveals altered foot thermodynamics associated with unilateral transtibial amputation among individuals with type 2 diabetes. Prosthet Orthot Int. 2021 Apr 1;45(2):178-183.
doi: 10.1177/0309364620968642. PMID: 33280510.

Presentations

Leister, KR. (October 2017). Foot temperature differences in transtibial amputees and non-amputated type II diabetics. University of Houston Health and Human Performance Research Symposium. Houston, TX. (podium)

Leister KR. (February 2019). A walking bout among individuals with type 2 diabetes reveals altered foot thermodynamics associated with unilateral transtibial amputation. Hanger Clinic Education Fair. Las Vegas, NV. (poster) **2019 Hanger Clinic Resident Research Award Recipent**

Leister KR. (February 2019). A walking bout among individuals with type 2 diabetes reveals altered foot thermodynamics associated with unilateral transtibial amputation. Hanger Clinic Education Fair. Las Vegas, NV. (podium)

Leister KR. (March 2019). Why do diabetic amputees succumb to contralateral amputation? An investigation of foot temperature differences. American Academy of Orthotist and Prosthetist Annual Scientific Meeting. Orlando, FL. (podium)

Leister KR. (September 2019). Diabetic amputee foot temperature discrepancies. American Orthotic and Prosthetic Association National Assembly. San Diego, CA. (podium)

Jaclyn Megan Sions

OPERF 2022

Publication

Sions JM, Stauffer SJ, Horne JR, Pohlig RT. Prosthetist screening for comorbidity during routine care visits: A randomised controlled clinical trial evaluating benefits, acceptability and feasibility. BMJ Open. 2026;16(2):e108623. doi:10.1136/bmjopen-2025-108623

Presentations

Management of Adults with Lower-Limb Loss: An Update for Clinicians. Encompass Health Rehabilitation Hospital of Delaware, Middletown, DE. 11/23/24

The Value-Add of Health Screenings in Routine Prosthetic Practice: a Hands-on Guide to Implementation. American Orthotic and Prosthetic Association. National Assembly. Charlotte, NC. 9/13/24

Consideration of Post-amputation State of Mind to Curtail Negative Consequences. New Jersey Chapter of the American Academy of Orthotists and Prosthetists. Atlantic City, NJ. 11/9/23

Webinar. Low Back Pain with Lower-Limb Loss: Screening & Significance. International Society of Prosthetics and Orthotics. 1/27/23

Platform Presentation. Comorbidity Screening and Referral by Prosthetists. Sions JM, Stauffer SJ, Horne JR. 50th Academy Annual Meeting & Scientific Symposium. Chicago, IL. 3/8/24

Platform Presentation. Fidelity & Prosthetists' Perspectives from a Clinical Trial. Sions JM, Stauffer SJ, Horne JR. 50th Academy Annual Meeting & Scientific Symposium. Chicago, IL. 3/8/24

Platform Presentation. Health Screenings and Prosthetist Impact on Care-Seeking Behaviors. Stauffer SJ, Neill JW, Horne JR, Sions JM. 50th Academy Annual Meeting & Scientific Symposium. Chicago, IL. 3/8/24

Poster Presentation. Screening for Major Depressive Symptoms and Suicidal Ideation among Adults with Lower-Limb Loss in Prosthetic Clinics: A Preliminary Study. Stauffer SJ, Horne JR, Sions JM. University of Delaware College of Health Sciences Research Day. Newark, DE. 3/8/22

OPERF 2016

Publications

Arch ES, Sions JM, Horne JR, Bodt BA. Step Count Accuracy of the StepWatch and FitBit One among Individuals with a Unilateral Transtibial Amputation. Prosthet Orthot Int. 2018 Oct; 42(5):518-526. PMID: 29623810.
DOI: 10.1177/0309364618767138

Sions JM, Arch ES, Horne J. Self-reported Functional Mobility, Balance-confidence, and Prosthetic Use are Associated with Daily Step Counts among Individuals with a Unilateral Transtibial Amputation. Phys Act Health. 2018 Jun 1; 15(6):423-429. PMID: 29771620.
DOI: 10.1123/jpah.2017-0196

Beisheim EH, Seth M, Horne JR, Hicks GE, Pohlig RT, Sions JM. Sex-Specific Differences in Multisite Pain Presentation among Adults with Lower-Limb Loss. Pain Pract; 2021; 21(4):419-427. PMID: 33251680. PMCID: PMC8035227.
DOI: 10.1111/papr.12969

Presentations

Platform Presentation. Step Count Accuracy of the StepWatch and FitBit One among Individuals with a Unilateral Transtibial Amputation. Arch ES, Sions JM, Horne JR. American Academy of Orthotists and Prosthetists: 43rd Annual Meeting and Scientific Symposium: Chicago, IL. 3/4/17

Platform Presentation. Self-Report Measures Help Predict Daily Step Counts among Individuals with a Unilateral Transtibial Amputation. Sions JM, Arch ES, Horne JR. American Academy of Orthotists and Prosthetists: 43rd Annual Meeting and Scientific Symposium: Chicago, IL. 3/4/17

Platform Presentation. Socket Fit Comfort Helps to Predict Physical Activity Level among Adults with a Unilateral Transtibial Amputation. Sions JM, Arch ES, Horne JR. American Academy of Orthotists and Prosthetists: 43rd Annual Meeting and Scientific Symposium: Chicago, IL. 3/4/17

Platform Presentation. Physical Performance Predicts Cadence Variability during Community Ambulation among Individuals with a Transtibial Amputation. Beisheim EH, Arch ES, Horne JR, Sions JM. American Academy of Orthotists & Prosthetists: 45th Academy Annual Meeting & Scientific Symposium. Orlando, FL. 3/8/19

Platform Presentation. Physical Performance Predicts Cadence Variability during Community Ambulation among Individuals with a Transtibial Amputation. Beisheim EH, Arch ES, Horne JR, Sions JM. American Academy of Orthotists & Prosthetists: 45th Academy Annual Meeting & Scientific Symposium. Orlando, FL. 3/8/19

Outcome Measures in Limb Loss. University of Maryland Network & University of Maryland School of Medicine, Department of Physical Therapy and Rehabilitation Science. Update on Prosthetics and Outcome Measures. Baltimore, MD. 11/20/19

Assessment of Post-Amputation Pain: State of the Science and Integration into Prosthetic Clinical Practice. New Jersey Chapter of the American Academy of Orthotists and Prosthetists. Atlantic City, NJ. 11/4/21

Post-Amputation Pain: Practice, Provider and Patient Empowerment. Sions JM, Beisheim-Ryan EH, Stauffer S, Smith SC. Combined Sections Meeting. Orthopaedic Programming. San Diego, CA. 2/24/23

Poster Presentation. Evaluation of Accuracy of the Step Activity Monitors Among Individuals with Lower Limb Amputations. Christensen M, Sions JM, Horne J, Arch E. Summer Research Symposium. Newark, DE. 8/10/17

Pilot data that resulted in extramural funding and publications

R03HD088668 (Sions) 4/1/17-3/31/20
National Institutes of Health/Eunice Kennedy Shriver National Institute of Child Health and Human Development. $156,000
Trunk Muscle Characteristics and their Association with Balance, Functions, and Participation among Individuals with Amputations

This study found spinal muscle impairments, i.e., reduced muscle activity and increased intramuscular fat, are associated with lower-limb amputation, and that findings may differ depending on the amputation level, i.e., transfemoral- versus transtibial. Results will inform the development of future, longitudinal work evaluating whether spinal impairments predict physical function and community participation, and should be considered as potential modifiable factors in future interventional studies among adults post-amputation.

18A00364 (Hicks)9/5/18-6/30/21
National Institutes of Health/State of Delaware $79,625
ACCEL Pilot - Somatosensory Dysfunction, Prosthetic Use, and Function in Adults with Limb Loss (Sions)

With advances in prosthesis design and innovative rehabilitation interventions, we may improve outcomes for patients who experience a limb amputation. This study evaluated changes in somatosensory function post-amputation that might impact prosthesis fit, technology, and post-amputation outcomes. We found adults with non-dysvascular, transtibial-level amputation had similar vibration detection to controls with intact limbs indicating vibration is preserved in the amputated region post-amputation, and may be a mechanism for delivering prosthetic feedback. A unique relationship was found between vibration perception and balance post-amputation, in that this relationship was not found in controls; capitalizing on this relationship may be a mechanism for mitigating falls post-amputation. Further, adults with post-amputation pain have greater amputated region pain sensitivity, per pain-pressure threshold testing, as compared to pain-free peers and controls with intact limbs, indicating peripheral sensitization persists after limb healing. Peripheral sensitization may help explained reduced prosthesis comfort and use among adults with post-amputation pain, as compared to peers without post-amputation pain, and may be a critical target in post-amputation rehabilitation.

Sheila Pach

OPERF 2021

Presentation

Clinical Evaluation of a Novel Low-Cost Voluntary Closing Prosthetic Hand. Free Paper at AAOP Annual Meeting 2021

Sara Koehler-McNicholas

OPERF 2009

Publications

Koehler-McNicholas, SR, Lipschutz, RD, Gard, SA (2016) The Biomechanical Response of Persons with Transfemoral Amputation to Variations in Prosthetic Knee Alignment during Level Walking, Journal of Rehabilitation Research and Development, 53(6), 1089-1106.

Koehler, SR, Dhaher, YY, Hansen, AH (2014) Cross Validation of a Portable, Six Degree-of-Freedom Load Cell for Use in Lower-Limb Prosthetics Research, Journal of Biomechanics, 47(6), 1542-1547.

Presentations

Koehler, SR, Lipschutz, RD, Stine, RL, Gard, SA (2013) Does a Mechanically-Demanding Task Exaggerate the Effect of Prosthetic Alignment for Persons with Transfemoral Amputation? (Podium Presentation), 14th World Congress of the International Society of Prosthetics & Orthotics, February 4-7, Hyderabad, India.

Koehler, SR, Lipschutz, RD, Stine, RL, Gard, SA (2012) The Effect of Transfemoral Prosthesis Alignment Perturbations on Gait (Podium Presentation), 38th Annual Meeting and Scientific Symposium of the American Academy of Orthotists & Prosthetists, March 21-24, Atlanta, GA, USA.

Koehler, SR (2011) The Effect of Transfemoral Prosthesis Alignment Perturbations on Gait (Poster Presentation), Biomedical Engineering Research Day, Northwestern University, September 14, Evanston, IL, USA.

Koehler, SR (2010) Cross Validation of a Portable, Six Degree-of-Freedom Load Cell for Use in Lower-Limb Prosthetics Research (Poster Presentation), Biomedical Engineering Research Day, Northwestern University, September 15, Evanston, IL, USA.

Koehler, SR, Gard, SA (2009) A Quantitative Analysis of Transfemoral Prosthetic Alignment (Poster Presentation), Biomedical Engineering Research Day, Northwestern University, September 17, Evanston, IL, USA.

Pilot data that resulted in extramural funding and publications

VA Rehabilitation Research & Development Merit Award; approximately $420K

Koehler-McNicholas, SR, Lipschutz, RD, Gard, SA (2016) The Biomechanical Response of Persons with Transfemoral Amputation to Variations in Prosthetic Knee Alignment during Level Walking, Journal of Rehabilitation Research and Development, 53(6), 1089-1106.

Koehler, SR, Dhaher, YY, Hansen, AH (2014) Cross Validation of a Portable, Six Degree-of-Freedom Load Cell for Use in Lower-Limb Prosthetics Research, Journal of Biomechanics, 47(6), 1542-1547.