The MADE Program was established in 2010. The following shows the honors and awards, grants and contracts, publications, patents, presentations, and posters for MADE projects.

HONORS AND AWARDS

Winner of Five-Minute Pitch Competition, Design of Medical Devices Conference, Minneapolis, MN - Development of an Active-Cooling System for Improving Residual-Limb Skin Care in Persons with Lower-Limb Amputation, presented by Todd Farrell, PhD - Sara Koehler-McNicholas, 2022

VA Midwest Health Care Network Star Award, Inpatient process, 1st Place Christine Olney, PhD, 2019.

Best Poster Award, Reduced Bacterial Hand Contamination with an Ergonomic Wheelchair, Paralyzed Veterans of America Healthcare Summit and Expo, Orlando, Florida, Presented by Billie Slater, 2019.

Innovation Investment Award-VHA Innovators Network-VHA Innovation Ecosystem (Awardee- Billie Slater) Prosthetic Sock Education for Self-Management and Training and (Pro-SET) - (Seed Level) 2020-2021


Innovation Investment Award-VHA Innovators Network-VHA Innovation Ecosystem (Awardee-Billie Slater) The Veteran Amputee: A Prosthetic Sock Management Tool for Fit and Comfort - (Seed Level) 2018-2019

Innovation Investment Award-VHA Innovators Network-VHA Innovation Ecosystem (Awardee-Billie Slater) The Veteran Amputee: A Prosthetic Sock Management Tool for Fit and Comfort - (Spark Level) 2018-2018

Grand Prize Winner of the 3-in-5 Competition, Design of an Ergonomic Wheelchair Drive System for Improved Shoulder Biomechanics, Design of Medical Devices Conference, Minneapolis, Minnesota, Presented by Gary Goldish, MD, 2016.

Honorary Membership – Andrew H. Hansen, PhD, American Academy of Orthotists and Prosthetists, Presented at the 41st Academy Annual Meeting and Scientific Symposium, New Orleans, Louisiana, February 20, 2015.

Research Award – Andrew Hansen, PhD, American Academy of Orthotists and Prosthetists, 2012.
GRANTS, AWARDS, and CONTRACTS

Pediatric Mobile Manual Standing Wheelchair for Children with Disabilities (PI: Hansen)
University of Minnesota Office of Discovery and Translation
The Pediatric Device Innovation Consortium
July 1, 2021 – June 30, 2022

Socket Fit Sensing and Management System (PI: McDonald)
Department of Defense RESTORE
October 1, 2020 – September 30, 2024

A Prosthetic Foot Test-Drive Strategy for Improving Stability and Falls-Related Outcomes in Veterans with Leg Amputations (PI: Morgenroth)
Department of Defense CDMRP
October 1, 2020 – September 30, 2024

Fall-Related Health Outcomes in Lower Limb Prosthesis Users: A Pragmatic Clinical Trial to Assess Effectiveness of Microprocessor-Controlled Prosthetic Knees (PI: Hafner)
Department of Defense CDMRP
October 1, 2020 – September 30, 2024

Developing Assessments and Interventions for Phantom Limb Pain in Veterans with Amputations (PI: Rich)
Veterans Administration Rehabilitation Research and Development – CDA-1
October 1, 2020 – September 30, 2022

Hybrid Electrical-Mechanical pump for Vacuum Suspension of Prosthetic Sockets (PI: Major)
Veterans Administration Rehabilitation Research and Development
April 1, 2020 – March 31, 2023

Refinement of the Comprehensive Mobile Assessment of Pressure (CMAP) System for Prevention of Pressure Injuries (PI: Olney)
Veterans Administration Rehabilitation Research and Development
April 1, 2020 – March 31, 2024

Comparative Effectiveness of Socket Casting Methods: Improving Form and Fit (PI: Fatone)
Department of Defense – Congressionally Directed Medical Research Programs
September 30, 2019 – September 29, 2022

Improving Commercial Readiness of the Multi-Purpose Arm Cycle Ergometer (M-PACE) (PIs: Olney and Goldish)
Veterans Administration Technology Transfer Program
April 1, 2019 – September 30, 2020

Improving Shoulder Health for Persons with SCI through an Ergonomic Wheelchair (PI: Looft)
Maslowski Charitable Trust
March 1, 2019 – March 1, 2021

Comparative Effect of Commercially Available Custom Dynamic Orthoses (PI: Wilken)
Department of Defense – Congressionally Directed Medical Research Programs
October 1, 2018 – September 30, 2022

Development of Personalized Mobility Interventions using Smart Sensor Resources for Lower-Limb Prostheses Users (PI: Jayaraman)
Department of Defense – Congressionally Directed Medical Research Programs
October 1, 2018 – September 30, 2022

The Bimodal Ankle for Mobility and Stability of Prosthesis Users (PIs: Wernke and Koehler-McNicholas)
National Institute on Disability Independent Living and Rehabilitation Research – SBIR
September 30, 2018 – September 29, 2021

Sensor System for Self-Management of Prosthetic Socket Fit (PI: Hansen)
Department of Defense – Congressionally Directed Medical Research Programs
August 15, 2018 – August 14, 2021

Biomimetic Slope Adaptive Foot-Ankle Prosthesis (PIs: Iversen and Hansen)
Department of Defense – STTR Phase II
July 27, 2018 – July 26, 2021

Improving Footwear Options for Women and Men Veterans with Amputations (PI: Hansen)
Veterans Administration Rehabilitation Research and Development
July 1, 2018 – September 30, 2022

Effect of Constraint-Induced Gaming Therapy in Acute Care (PI: Hansen)
Veterans Administration Rehabilitation Research and Development
July 1, 2018 – June 30, 2021

Mounted Display Virtual Reality in the Treatment of Upper Extremity Function in Acute TBI Rehabilitation: A comparison study to conventional OT treatment alone. (PI: Hansen)
Minnesota Office of Higher Education SCI and TBI Grant Program
July 1, 2018 – June 30, 2021

Moisture Management Liner and Active Cooling System for Improving Residual Limb Skin Care Expansion (PI: Myers)
Department of Defense – Congressionally Directed Medical Research Programs
April 1, 2018 – March 31, 2021

New IV Clamp to Prevent Medication Errors (PI: Goldish)
Veterans Administration Innovation Spark Funding
April 1, 2018 – September 30, 2018

Camera System Development for Pressure Injury Screening in Veterans with SCI (PI: Olney)
Veterans Administration Rehabilitation Research and Development
January 1, 2018 – June 30, 2021

Development of a Foot-Ankle Prosthesis to Improve Physical Therapy Outcomes (PI: Koehler-McNicholas)
Veterans Administration Rehabilitation Research and Development
December 1, 2017 – May 31, 2021
The Bimodal Ankle: Development and Engineering Validation of a Hydraulic Actuator (PI: Colvin)
National Institute on Disability Independent Living and Rehabilitation SBIR
September 30, 2017 – March 31, 2018

Women’s-Specific Footwear with Prosthetic Feet (PI: Russell Esposito)
Department of Defense – Congressionally Directed Medical Research Programs
September 29, 2017 – September 28, 2021

Biomimetic Slope Adaptive Foot-Ankle Prosthesis (PI: Sears)
Department of Defense – STTR Phase I
July 10, 2017 – January 9, 2018

Upper Body Dynamic Positioning System for Persons with SCI (PI: Goldish)
Minnesota Office of Higher Education
July 1, 2017 – June 30, 2019

Medical 3D Printing, System and Process for 3D Printing Prosthetic Components (PI: Hand)
Defense Logistics Agency
June 10, 2017 – June 9, 2019

Sensor System for Self-Management of Prosthetic Socket Fit (PI: Ferguson)
Veterans Administration Rehabilitation Research and Development
June 1, 2017 – December 31, 2019

Development of an Arm Cycle Ergometer for Supine Use (PI: Goldish)
University of Minnesota Office of Discovery and Translation
Clinical and Translational Science Institute
October 3, 2016 – June 30, 2018

A Prosthetic Foot Emulator to Optimize Prescription of Prosthetic Feet in Veterans and Service Members with Leg Amputations (PI: Morgenroth)
Department of Defense – Congressionally Directed Medical Research Programs
September 1, 2016 – August 31, 2021

Active Cooling Socket for Improving Residual Limb Skin Comfort and Skin Care (PI: Myers)
Department of Defense – Congressionally Directed Medical Research Programs
September 1, 2016 – August 31, 2020

Muscle Powered Exoskeleton for Standing and Walking by People with Spinal Cord Injury (PI: Durfee)
Minnesota Office of Higher Education
August 3, 2016 – June 30, 2018

Mobile Manual Standing Wheelchair (PIs: Goldish and Hansen)
Veterans Administration Rehabilitation Research and Development
October 1, 2015 – September 30, 2019

Understanding Participation in Veterans with Amputations (PI: Erbes)
Veterans Administration Rehabilitation Research and Development
November 1, 2015 – October 31, 2017

Dynamic Corrective Force Device: A Balance Measure for Amputees (PI: Johansson)
Department of Defense – Congressionally Directed Medical Research Programs
September 2015 – September 2017

Development of a Personal Use Seating Pressure Measurement System (PI: Morrow)
Department of Defense – Congressionally Directed Medical Research Programs
September 2015 – September 2018

Microclimate Evaluation of Custom Seating Systems during Wheelchair Activities (PIs: Ferguson and Olney)
Tamarack Habilitations Incorporated

Characterization of Prosthetic Feet for Weighted Walking in Service Members with Lower-Limb Amputations (PI: Schnall)
BADER Consortium, University of Delaware
April 1, 2015 – September 30, 2017

Development of Adaptive Prosthetic Ankle-Foot Systems (PI: Hansen)
Veterans Administration Rehabilitation Research and Development
October 1, 2014 – September 30, 2018

Improving Energy Return and Residual-Limb Climate in Prostheses for High-Functioning Amputees (PI: Hansen)
Department of Defense – Congressionally Directed Medical Research Programs
September 30, 2014 – March 29, 2019

Powered Walk/Run Prosthetic Ankle (PI: Holgate)
National Institutes of Health
September 20, 2014 – August 31, 2017

Self-management to improve functioning following limb loss (PIs: Turner and Czerniecki)
Veterans Administration Rehabilitation Research and Development
July 1, 2014 – June 30, 2018

Bimodal Prosthetic Ankle-Foot System for Improved Balance and Mobility (PI: Hansen)
Veterans Administration Rehabilitation Research and Development
April 1, 2014 – March 31, 2017

Further Development of a Manual Wheelchair for Improved Shoulder Biomechanics (PIs: Hansen and Goldish)
Mike Utley Foundation
January 1, 2014 – December 31, 2014

Testing and Refinement of a Hydraulic Adaptable Ankle-Foot Prosthesis (PI: Hansen)
Veterans Administration Rehabilitation Research and Development
April 1, 2013 – March 31, 2016

Development of a Mobile Manual Standing Wheelchair (PIs: Goldish and Hansen)
Paralyzed Veterans of America
January 1, 2013 – December 31, 2014
Development of a Manual Wheelchair for Improved Shoulder Biomechanics (PIs: Hansen and Goldish)  
Mike Utley Foundation  

Rocker Shoes for Natural Immobilization of the Ankle during Single Limb Support (PI: Hansen)  
Veterans Administration Rehabilitation Research and Development  
October 1, 2012 – September 30, 2014

Functional Testing of a Hydraulic Adaptable Prosthetic Ankle-Foot System (PI: Hansen)  
Fraunhofer Institute  
October 1, 2012 – December 31, 2012

Pilot Study of the Tamarack WebSeat™ Custom Wheelchair Seating System (PIs: Hansen and Goldish)  
Minnesota Veterans Medical Research and Education Foundation  

Development of a Passive Adaptive Ankle-Foot Prosthesis (PI: Hansen)  
Veterans Administration Rehabilitation Research and Development  
May 1, 2011 – April 30, 2013

Biomechanical Evaluation of Adaptable Ankle-Foot Prostheses (PI: Hansen)  
Veterans Administration Rehabilitation Research and Development  
October 1, 2010 – September 30, 2013

Effects of a Flat Prosthetic Foot Rocker Section on Standing and Walking (PI: Hansen)  
Veterans Administration Rehabilitation Research and Development  
May 1, 2009 – April 30, 2012

PEER-REVIEWED PUBLICATIONS

https://doi.org/10.1161/HYPERTENSIONAHA.121.18369.


https://doi.org/10.1371/journal.pone.0270753.


17. Daly, S., J.T. Hanson, V. Mavanji, A. Gravely, S. Lewis, J. Ashe, Looft, John M., R.A. McGovern. Using kinematics to re-define the pull test as a quantitative biomarker of the postural response. doi: [https://doi.org/10.1101/2021.05.24.21257163]


BOOK CHAPTERS


ISSUED PATENTS


3. Multi-Speed Ergonomic Wheelchair And Devices And Methods Therefor, PCT 7/684,990, March 2, 2022


INVITED INTERNATIONAL PRESENTATIONS

1. Invited Speaker – Andrew Hansen, PhD, Australian Orthotic Prosthetic Association Webinar, Paediatric Prosthetics: Navigating Development Milestones and Prescription, April 19, 2017.
2. Invited Speaker – Andrew Hansen, PhD, Standing and Stance Phase Instability in Lower Limb Prosthetics. Within the symposium – Challenges in Lower-Limb Prosthetics. OTWorld 2016 World
November 21, 2022


5. Invited Speaker – Andrew Hansen, PhD, International Society of Prosthetics and Orthotics World Congress, Effects of Rocker Shoe Radius on Ankle Movement, Roll-over Shape, and Oxygen Consumption Rate, Within the symposium – Pedorthics – Footwear – An Update of Research in Footwear, Hyderabad, India, February 5, 2013.

6. Invited Keynote Speaker – Andrew Hansen, PhD, Orthotic Education & Training Trust Lecture, Roll-over Shape as a Tool in Prosthetics and Orthotics, International Society of Prosthetics and Orthotics United Kingdom Members Society 40th Anniversary Meeting, Sheffield, United Kingdom, September 28, 2012.


INVITED PRESENTATIONS


5. Invited Speaker – Billie Savvas Slater, MAEd, Northern Plains Chapter Meeting of the American Academy of Orthotists and Prosthetists, Vadnais Heights, Minnesota, September 13, 2019


12. Invited Speaker – Andrew Hansen, PhD, 65th Annual Meeting of the American College of Sports Medicine.
Medicine, Symposium: Optimizing Function and Performance after Lower Limb Amputation, Minneapolis, Minnesota, June 1, 2018.


17. Invited Speaker – Andrew Hansen, PhD, 39th Annual Meeting of the American Society of Biomechanics, Ankle-foot Prostheses for Improved Balance and Stability during Standing and Sloped Walking, within the symposium titled Wearable active and passive leg prostheses; Can we augment performance in people with an amputation? Columbus, Ohio, August 5-8, 2015.


19. Invited Speaker – Andrew Hansen, PhD, Grand Rounds – Walter Reed National Military Medical Center, Bethesda, Maryland, November 21, 2013.


21. Invited Speaker – Andrew Hansen, PhD, Division of Rehabilitation Science, Department of Rehabilitation Medicine, University of Minnesota, Development and Commercialization of Medical Devices for Veterans: Minneapolis Adaptive Design & Engineering (MADE) Program, Minneapolis, Minnesota, May 10, 2021

22. Invited Speaker – Andrew Hansen, PhD, Northern Plaines Chapter Meeting of the American Academy of Orthotists and Prosthetists, Vadnais Heights, Minnesota, September 12, 2019.

23. Invited Speaker – Andrew Hansen, PhD, Northern Plaines Chapter Meeting of the American Academy of Orthotists and Prosthetists, Vadnais Heights, Minnesota, October 4, 2018.

24. Invited Panelist – Andrew Hansen, PhD, Graduate Women in Biomedical Engineering Career Panel, University of Minnesota, April 4, 2018.


30. Invited Speaker – Andrew Hansen, PhD, Northern Plaines Chapter Meeting of the American Academy of Orthotists and Prosthetists, Vadnais Heights, Minnesota, September 9, 2011.

31. Invited Speaker – Andrew Hansen, PhD, Sister Kenny Rehabilitation Institute, Minneapolis, Minnesota, Biologic Ankle-Foot Biomechanics as a Guide for Design of Prosthetic Ankle-Foot Devices, June 6, 2011.

32. Invited Speaker – Andrew Hansen, PhD, Region 4 Amputee System of Care Conference, Research:
CONFERENCE PRESENTATIONS


42. Fatone S, Owen E, Hansen A (2017) The Effect of Walking in Footwear with Varying Heel Sole
Differentials on Shank and Foot Segment Kinematics. 16th World Congress of International Society of Prosthetics and Orthotics, May 8-11, Cape Town, South Africa.


CONFERENCE POSTERS


4. John Looft, PhD, Juan Cave II, MSPO, CPO, LPO, and Amber Wacek, DPT, NCS. Motion Analysis: Capturing and Promoting Personalized Veteran Care. VISN 23 Grand Rounds, Minneapolis, MN United States


24. McCracken, P, Santa Ana, C, Danzl, L, Olney, C, Oddsson, L, Koehler-McNicholas, S (2019) walk2Wellness Clinical Trial (Poster Presentation), Research Day, Minneapolis VA Health Care System, May 1, Minneapolis, MN, USA.


Congress of the International Society of Prosthetics and Orthotics, February 4-7, Hyderabad, India.


PROFESSIONAL SERVICE

1. Olney, CM. Member, Minneapolis VA Research R & D Committee, 2021-present.
3. Slater, BCS ORD COVID19 Expanded Access Program, National Coordinator Group Member, 2020
5. Olney, CM. Mentor, Office of Academic Affiliation, VA Quality Scholars Program. Joined June 2021
6. Olney, CM. Committee Member, Minneapolis VA Research Strategic Planning Committee, Minneapolis VA, Minneapolis, MN 2021
7. Olney CM. Committee Chair Veterans Affairs Research Career Development Award Program, August 2021
13. Hansen AH. Rehabilitation Track Co-Chair, Design of Medical Devices Conference, University of Minnesota, 2010 – present.
15. Hansen AH. National Institutes of Health, Musculoskeletal Rehabilitation Sciences Study Section Member, 2016 – 2020.
In addition to these professional service activities, numerous MADE investigators and personnel assist with grant reviews for several federal agencies and with article reviews for a wide variety of topics.