

A L I C I A M A R I E K O O N T Z

BIOGRAPHICAL

Work (Primary Appointment)

Research Biomedical Engineer
Human Engineering Research Laboratories
VA Pittsburgh Healthcare System
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Personal

E-Mail Address(1): akoontz@pitt.edu

Associate Professor
Department of Rehabilitation Science and Technology
University of Pittsburgh
5044 Forbes Tower
Pittsburgh, PA 15260
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EDUCATION

08/2001 PhD in Rehabilitation Science (Rehabilitation Engineering)
University of Pittsburgh, Pittsburgh, PA
06/1994 MS in Biomedical Engineering (Rehabilitation Engineering)
Wright State University, Dayton, OH
06/1993 BS in Biomedical Engineering
Wright State University, Dayton, OH

CERTIFICATIONS

06/2004 Rehabilitation Engineering Technologist (RESNA)
10/1996 Assistive Technology Professional (RESNA)
05/1993 Engineer in Training (EIT)

APPOINTMENTS AND POSITIONS

12/2014 - present Associate Director of Research
Center of Excellence in Wheelchairs and Related Engineering
Human Engineering Research Laboratories
4/2010 – present Associate Professor
Department of Rehabilitation Science and Technology
University of Pittsburgh, Pittsburgh, PA
4/2001 – present Co-Director, ASPIRE Internship Program
Human Engineering Research Laboratories

VA Pittsburgh HealthCare System, Pittsburgh, PA

10/2000 – present Research Biomedical Engineer, Principal Investigator
 Human Engineering Research Laboratories
 VA Pittsburgh HealthCare System, Pittsburgh, PA

6/2004 – present Graduate Student Faculty
 Department of Rehabilitation Science and Technology
 University of Pittsburgh, Pittsburgh, PA

6/2009 - 12/2014 Associate Director of Education & Outreach
 Center of Excellence in Wheelchairs and Related Engineering
 Human Engineering Research Laboratories

1/2008 – 3/2010 Adjunct Associate Professor
 Department of Rehabilitation Science and Technology
 University of Pittsburgh, Pittsburgh, PA

9/2001 – 12/2007 Adjunct Assistant Professor
 Department of Rehabilitation Science and Technology
 Department of Bioengineering
 University of Pittsburgh, Pittsburgh, PA

10/1999 – 9/2000 Rehabilitation Research Trainee
 VA Pre-Doctoral Fellow
 Human Engineering Research Laboratories
 Pittsburgh, PA

9/1997 – 9/1999 Research Assistant
 University of Pittsburgh
 Human Engineering Research Laboratories
 Pittsburgh, PA

10/1994 – 5/1998 Program Coordinator/Rehabilitation Engineer
 HealthSouth Harmorville Rehabilitation Hospital
 Assistive Technology Program
 Pittsburgh, PA

6/1994 – 9/1994 Rehabilitation Engineer Intern
 Deaton Ashcraft Group, Inc.
 Technology in Motion
 Dayton, OH

3/1994 – 8/1994 Rehabilitation Engineer Intern
 St. Elizabeth Rehabilitation Center
 Dayton, OH

- 1/1994 – 3/1994 Adapted Computer Lab Assistant
 Office of Disability Services
 Wright State University
 Dayton, OH
- 1/1992 – 9/1992 Research Engineer Intern
 Becton Dickinson Vascular Access Dayton Technology Center
 Dayton, OH

MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

- 10/2000 Sigma Xi
- 5/1993 – present Rehabilitation Engineering and Assistive Technology Society of North America
- 1/1999 – 2003 American Society of Biomechanics
- 5/1993 Order of the Engineer
- 5/1993 Tau Beta Pi

HONORS AND AWARDS

- 2014 Bruce Baker Faculty Travel Award - University of Pittsburgh
- 2004 Distinguished Teaching Award – University of Pittsburgh, Department of
 Rehabilitation Science and Technology
- 2001 American Society of Biomechanics Grant-In-Aid Award
- 2000 American Society of Biomechanics Student Travel Award for the Annual Conference
 in Chicago, IL, July 19-22, 2000
- 1999 – 2000 VA Pre-Doctoral Associated Health Rehabilitation Research Fellowship for
 Academic Year
- 1997 – 1999 NIDRR Training Grant-Pre-doctorate Award: School of Health and Rehabilitation
 Sciences - University of Pittsburgh
- 1993 – 1994 Graduate School Fellowship in Rehabilitation Engineering (1993-1994)- Wright State
 University (WSU)
- 1994 Summa Cum Laude, Wright State University (graduate)
- 1993 Magna Cum Laude, Wright State University (undergraduate)
- 1992 – 1993 CSC (WSU campus funded scholarship)
- 1992 – 1993 Biomedical Engineering Merit Scholarship
- 1992 – 1993 Distinguished Senior Award in Biomedical Engineering
- 1991 – 1992 Engineering and Science Foundation Scholarship
- 1990 – 1991 Millie Waddell Scholarship WSU Academic Scholarship

SCIENTIFIC PAPER AWARDS

1. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for Kulich H**, Bass S, **Koontz AM**. Accessibility barriers affecting independent wheelchair transfers in the community. Proceedings of the RESNA 2014 Annual Conference, June 11-14, 2015, Denver, CO.
2. *Supervisor*, Winner, PVA Student Scientific Paper Competition for Pynn K**, Tsai C-Y, **Koontz AM**. The relationship between lead hand positioning and proper wheelchair transfer techniques. Proceedings of the RESNA 2014 Annual Conference, June 11-15, 2014, Indianapolis, IN.
3. *Supervisor*, Winner, PVA Student Scientific Paper Competition for Hogaboom NS, Oyster ML, **Koontz AM**, Boninger ML. Ultrasonic changes of the median nerve indicative of carpal tunnel syndrome are related to hand placement during transfers. Proceedings of the RESNA 2014 Annual Conference, June 11-15, 2014, Indianapolis, IN.
4. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for McCutcheon J**, Hwang S, Tsai C-Y, **Koontz AM**. The feasibility of using Kinect for Transfer Assessment. Proceedings of the RESNA 2014 Annual Conference, June 11-15, 2014, Indianapolis, IN.
5. 2014 Cooper-Dion Johnson Best Student Conference Paper Award, Rehabilitation Science and Technology, University of Pittsburgh for: Hogaboom NS, Oyster ML, **Koontz AM**, Boninger ML. Ultrasonic changes of the median nerve indicative of carpal tunnel syndrome are related to hand placement during transfers. Proceedings of the RESNA 2014 Annual Conference, June 11-15, 2014, Indianapolis, IN.
6. *Supervisor*, 2014 Cooper-Dion Johnson Best Student Journal Paper Award, Rehabilitation Science and Technology, University of Pittsburgh for: Toro ML, **Koontz AM**, Cooper RA. The Impact of Transfer Setup on the Performance of Independent Transfers, Human Factors: The Journal of the Human Factors and Ergonomics Society, 2013 June; 55(3): 567-580.
7. *Supervisor*, Finalist and Winner, PVA Student Scientific Paper Competition for Meess K**, Tsai C-Y, **Koontz AM**. Trunk movement in different seated pivot wheelchair transfer techniques. Proceedings of the RESNA 2013 Annual Conference, June 22-24, 2013, Seattle, WA.
8. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for Tsai C-Y and **Koontz AM**. The effects of wheelchair orientation on upper limb biomechanics for a commode transfer. Proceedings of the RESNA 2013 Annual Conference, June 22-24, 2013, Seattle, WA.
9. *Supervisor*, Winner, PVA Student Scientific Paper Competition for Jerome GM, Toro Hernandez ML, **Koontz AM**, Cooper RA. The impact of transfer setup on hand positioning during independent transfers. Proceedings of the RESNA 2012 Annual Conference, June 30-July 2, 2012, Baltimore, MD.
10. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for Tsai C, Kankipati P, Hoelmer C**, **Koontz AM**. The feet free moment and ground reaction force in wheelchair

transfer: a pilot study. Proceedings of the RESNA 2012 Annual Conference, June 30-July 2, 2012, Baltimore, MD.

11. *Supervisor*, Winner, PVA Student Scientific Paper Competition for Lin Y-S., **Koontz AM**, Worobey L, Boninger ML. Effect of muscle fatiguing tasks on subacromial space in manual wheelchair users. Proceedings of the RESNA 2012 Annual Conference, June 30-July 2, 2012, Baltimore, MD.
12. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Toro-Hernandez ML, **Koontz AM**, Cooper RA, The impact of transfer setup on the performance of independent transfers: Preliminary results, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, Toronto, ON, Canada, June 5-8, 2011.
13. *Supervisor*, Winner, Dion Johnson Award, Rehabilitation Science and Technology, University of Pittsburgh for: Toro-Hernandez ML, **Koontz AM**, Cooper RA, The impact of transfer setup on the performance of independent transfers: Preliminary results, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, Toronto, ON, Canada, June 5-8, 2011.
14. Honorable Mention, Excellence in Research Writing Award, Association of Academic Physiatrists for: Collinger JL, Fullerton B, Impink BG, **Koontz AM**, Boninger ML, Validation of Greyscale Based Quantitative Ultrasound: Relationship to Established Clinical Measures of Shoulder Pathology, American Journal of Physical Medicine and Rehabilitation, 89(5), 390-400, 2010.
15. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for: Toro-Hernandez ML, **Koontz AM**, Kankipati P, Naber M, Cooper RA, Independent Wheelchair Transfer: A Systematic Literature Review, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, Las Vegas, NV, CD-Rom, June 26-30, 2010.
16. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for: Kankipati P, **Koontz AM**, Lin YS, Lower Extremity Weight Balancing During Three Lateral Level Wheelchair Transfer Techniques, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, Las Vegas, NV, CD-Rom, June 26-30, 2010.
17. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for: Timcho E**, Collinger JL, Rice I, **Koontz AM**, Effects of Surface and Speed on Biomechanics Variables During Steady-State Wheelchair Propulsion, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, CD-Rom, June 23-27, 2009.
18. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Kankipati P, **Koontz AM**, Boninger ML, Lin YS, Hand and Shoulder Joint Kinetic Analysis of Three Types of Lateral Wheelchair Transfers, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, CD-Rom, June 23-27, 2009.

19. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Brindle E**, Gagnon D, **Koontz AM**, Cooper RA, Is Upper Limb Muscular Demand Different Between Wheelchair Transfers from the Preferred versus Non-Preferred Side?, Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference, CD-Rom, June 23-27, 2009.
20. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Kankipati P, **Koontz AM**, Turkovich M, Shoulder Joint Loading for Three Types of Lateral Wheelchair Transfers, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
21. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Wang H, **Koontz AM**, Collinger JL, Boninger ML, Influence of Gripping Moments during Wheelchair Propulsion on Natural Surfaces, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
22. *Supervisor*, Winner, PVA Student Scientific Paper Competition for: Gagnon D, Boninger ML, Collinger JL, Impink BG, **Koontz AM**, Do Stroke Characteristics Change During a High-Intensity 12-minutes Corridor Wheelchair Propulsion Test in Experienced Manual Wheelchair Users?, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
23. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for: Turkovich M, **Koontz AM**, Cowan R, Rice I, Boninger ML. The Effect of Shoulder Position on Pushrim Forces during Overground Manual Wheelchair Propulsion, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
24. Honorable Mention, PVA Student Scientific Paper Competition for: Ambur V, Ding D, Smailagic A, Siewiorek D, French B, **Koontz AM**. Accelerometry-Based Classification of Wheelchair Propulsion Patterns Using Machine Learning Techniques, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
25. Honorable Mention, PVA Student Scientific Paper Competition for: Hiremath S, Ding D, **Koontz AM**, Estimating Temporal Parameters of Wheelchair Propulsion based on Hand Acceleration, Proceedings of the Annual RESNA Conference, Arlington VA, CD-ROM, June 26-30, 2008.
26. *Supervisor*, Honorable Mention, PVA Student Scientific Paper Competition for: Yarnall M, **Koontz AM**, Yang Y, Price R, Boninger ML, Wrist Range of Motion During Lateral Transfers Among Persons with Paraplegia, Proceedings of the 28th Annual RESNA Conference, Atlanta, GA, June 25-27, 2005, CD-ROM.
27. Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Mercer JL, Boninger ML, **Koontz AM**, Pearlman J, Boninger D, Cooper RA, Effect of Weight on Wheelchair Propulsion Over Various Surfaces, Proceedings of the 28th Annual RESNA Conference, Atlanta, GA, June 25-27, 2005, CD-ROM.

28. *Supervisor*, Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Yang Y, **Koontz AM**, Kanaly J, Boninger ML, Cooper RA, Start-up propulsion biomechanics using a prototype ergonomic pushrim, Proceedings of the 28th Annual RESNA Conference, Atlanta, GA, June 25-27, 2005, CD-ROM.
29. *Supervisor*, Winner, Dion Johnson Award, Rehabilitation Science and Technology, University of Pittsburgh for: Yang Y, **Koontz AM**, Kanaly J, Boninger ML, Cooper RA, Start-up propulsion biomechanics using a prototype ergonomic pushrim, Proceedings of the 28th Annual RESNA Conference, Atlanta, GA, June 25-27, 2005.
30. 2005 Liberty Mutual Best Paper Award presented by Elsevier Ltd. for: **Koontz AM**, Cooper, RA, Boninger, ML, Souza AL, and Fay BT. Scapular orientation in a virtual wheelchair push. International Journal of Industrial Ergonomics, 33(3), 237-248, 2004
31. *Supervisor*, Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Yang Y, **Koontz AM**, Boninger ML, Cooper RA. Influence of gripping moments on mechanical efficiency of wheelchair propulsion. Proceedings of the RESNA 2004 Annual Conference, Orlando, FL, June 19-22, 2004.
32. Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Ambrosio F, Boninger ML, **Koontz AM**, Cooper RA, Dvorznak M, Ambrosio, A. A model-based criterion for assessing appropriateness of wheelchair setup. Proceedings of the RESNA 2004 Annual Conference, Orlando, FL, June 19-22, 2004.
33. *Supervisor*, Winner, Whitaker Foundation Student Scientific Paper Competition Award: Chaves E., **Koontz AM**, Garber S, Cooper RA, Williams AL: Clinical evaluation of a wheelchair mounted robotic arm. Proceedings of the RESNA 2003 Annual Conference, Atlanta, GA, June 20-23, 2003.
34. *Supervisor*, Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Yang Y, **Koontz AM**, Cooper RA, Boninger ML: The effect of hand contact speed on wheelchair propulsion kinetics. Proceedings of the RESNA 2003 Annual Conference, Atlanta, GA, June 20-23, 2003.
35. *Supervisor*, Winner, Whitaker Foundation Student Scientific Paper Competition Award for: Yang Y, **Koontz AM**, Cooper RA, Boninger ML: Trunk movement adaptations during wheelchair propulsion at two speeds and load conditions. Proceedings of RESNA 2002 Annual Conference, Minneapolis, MN, 2002.
36. Winner, Whitaker Foundation Student Scientific Paper Competition Award for: **Koontz AM**, Boninger ML, Cooper RA, Fay BT, Dietzer J: Scapular orientation in a virtual wheelchair push. Proceedings of the RESNA 2001 Annual Conference, Reno, NV, June 21-25, 2001.
37. Winner, Whitaker Foundation Student Scientific Paper Competition Award for: **Koontz AM**, Cooper RA, Boninger ML, Baldwin MA. Comparison of side-to-side wheelchair propulsion forces using an ARMA modeling technique. Proceedings of the Rehabilitation Engineering and

PUBLICATIONS

* Denotes student papers with Koontz listed as corresponding author

** Denotes undergraduate student researcher

Peer-Reviewed Journal Publications

1. Hogaboom NS, Huang BL, Worobey LA, **Koontz AM**, Boninger ML. Cross-sectional investigation of acute changes in ultrasonographic markers for biceps and supraspinatus tendon degeneration after repeated wheelchair transfers in people with spinal cord injury. American Journal of Physical Medicine & Rehabilitation. *in press*.
2. Tsai C-Y*, Boninger ML, Hastings J, Cooper RA, Rice LA, **Koontz AM**. The Immediate Biomechanical Implications of Transfer Component Skills Training on Independent Wheelchair Transfers. Archives of Physical Medicine and Rehabilitation. 2016 Apr 12. [Epub ahead of print] PMID: 27084267.
3. **Koontz AM**, Tsai C-Y, Hogaboom NS, Boninger ML. Transfer component skill deficit rates among veterans who use wheelchairs. Journal of Rehabilitation Research and Development, 2016; 53(2): 279-294.
4. Hogaboom NS, Diehl JA, Oyster ML, **Koontz AM**, Boninger ML. Ultrasonigraphic median nerve changes after repeated wheelchair transfers in persons with paraplegia and their relationship with subject characteristics and transfer skills. Physical Medicine and Rehabilitation. 2016; 8(4):305-313.
5. Worobey LA, Lin Y-S, **Koontz AM**, Boninger ML. Dynamic three-dimensional ultrasound to evaluate scapular movement among manual wheelchair users and healthy controls. Topics in Spinal Cord Injury Rehabilitation 2015; 21(4): 303-12.
6. Crytzer TM, Jerome GM, Cooper RA, **Koontz AM**. Identifying research needs for wheelchair transfers in the built environment. Disability and Rehabilitation: Assistive Technology, Epub 2015 May 19:1-7.
7. Yang Y-S, **Koontz AM**, Chen C-R, Fang W-C, Chang J-J. Effect of a wheelie training method with the front wheels on a ramp in novice able-bodied participants: a randomized control trial. Assistive Technology, 2015; 27(2): 121-7.
8. Kankipati P*, Boninger ML, Gagnon D, Cooper RA, and **Koontz AM**. Upper limb joint kinetics of three sitting pivot wheelchair transfer techniques in individuals with spinal cord injury. Journal of Spinal Cord Medicine, Epub 2014 Aug 17.

9. Tsai C-Y*, Boninger ML, **Koontz AM**. The relationship between independent transfer skills and upper limb kinetics in wheelchair users. Biomed Research International, Epub 2014 Aug 5.
10. Lin Y-S*, Boninger, ML, Worobey L, Farrokhi S, **Koontz A**. Effects of repetitive shoulder activity on the subacromial space in manual wheelchair users. Biomed Research International, Epub. 2014 July 20.
11. Lin Y-S*, Boninger ML, Day KA**, **Koontz AM**. Ultrasonographic measurement of the acromiohumeral distance in spinal cord injury: Reliability and effects of shoulder positioning. Journal of Spinal Cord Medicine, Epub 2014 June 26.
12. Worobey LA, Udofa IA, Lin YS, **Koontz AM**, Farrokhi SS, and Boninger ML. Reliability of freehand three-dimensional ultrasound to measure scapular rotations. Journal of Rehabilitation Research and Development, 2014; 51(6): 985-94.
13. Tsai C-Y*, Rice LA, Hoelmer C**, Boninger ML, **Koontz AM**. Basic Psychometric Properties of the Transfer Assessment Instrument (Version 3.0), Archives of Physical Medicine and Rehabilitation, 2013 Dec; 94(12):2456-64. Epub 2013 May 16.
14. Toro ML*, **Koontz AM**, Cooper RA. The Impact of Transfer Setup on the Performance of Independent Transfers, Human Factors: The Journal of the Human Factors and Ergonomics Society, 2013 June; 55(3): 567-580.
15. Yang Y, **Koontz AM**, Yeh S-J, Chang J-J. The Effect of Backrest Height on Wheelchair Propulsion Biomechanics for Level and Uphill Conditions, Archives of Physical Medicine and Rehabilitation, 2012 Apr; 93(4):654-9. Epub 2012 Feb 10.
16. **Koontz AM**, Worobey L, Rice I, Collinger JL, Boninger ML, Comparison Between Overground and Dynamometer Manual Wheelchair Propulsion, Journal of Applied Biomechanics, 2012 Aug; 28(4):412-9. Epub 2011 Nov 14.
17. **Koontz AM**, Lin YS, Kankipati P, Boninger ML, Cooper RA, Development of a Custom Measurement System for the Biomechanical Evaluation of Independent Wheelchair Transfers, Journal of Rehabilitation Research and Development, 2011 48(8), 1015-1028.
18. **Koontz AM**, Kankipati P, Lin Y-S, Cooper RA, Boninger ML, Upper Limb Kinetic Analysis of Three Sitting Pivot Transfer Techniques, Clinical Biomechanics, 2011 Oct; 26(6), 923-929. Epub June 12, 2011.
19. Karmarkar A, Dicianno BE, Matthews JT, **Koontz AM**, Teodorski E, Cooper RA, Demographic Profile of Older Adults Using Wheeled Mobility Devices, Journal of Aging Research, 2011 Jun 14. [Epub ahead of print].
20. **Koontz AM**, Toro ML, Kankipati P, Naber M**, Cooper RA, An Expert Review of the Scientific Literature on Independent Wheelchair Transfers, Disability and Rehabilitation: Assistive Technology, 2012; 7(1):20-9. Epub 2011 May 18

21. McClure L, Boninger ML, Ozawa H, **Koontz AM**, Reliability and Validity Analysis of the Transfer Assessment Instrument, Archives of Physical Medicine and Rehabilitation, Mar; 92(3), 499-508, 2011. Epub Jan 31 2011.
22. Cooper RA, **Koontz AM**, Ding D, Kelleher AR, Rice I, Cooper RM, Manual Wheeled Mobility: Current and Future Developments from the Human Engineering Research Laboratories, Disability and Rehabilitation, 32(26), 2210-2221, 2010.
23. **Koontz AM**, Brindle E**, Kankipati P, Feathers D, Cooper RA, Design Features that Impact the Maneuverability of Wheelchairs and Scooters, Archives of Physical Medicine and Rehabilitation, 91(5), 759-764, 2010.
24. Collinger JL, Fullerton B, Impink BG, **Koontz AM**, Boninger ML, Validation of Greyscale Based Quantitative Ultrasound: Relationship to Established Clinical Measures of Shoulder Pathology, American Journal of Physical Medicine and Rehabilitation, 89(5), 390-400, 2010.
25. Gagnon D*, **Koontz AM**, Brindle E**, Boninger ML, Cooper RA, Does Upper Limb Muscular Demand Differ Between Preferred and Non-Preferred Sitting Pivot Transfer Directions in Individuals With Spinal Cord Injury?, Journal of Rehabilitation Research and Development, 46(9), 1099-1108, 2009.
26. **Koontz AM**, Roche BM**, Collinger JL, Cooper RA, Boninger ML. Manual wheelchair propulsion patterns on natural surfaces, Archives of Physical Medicine and Rehabilitation, 90(11), 1916-1923, 2009.
27. Gagnon D, **Koontz AM**, Mulroy SJ, Nawoczinski D, Butler-Forslund E, Granstrom A, Nadeau S, Boninger ML, Biomechanics of Sitting Pivot Transfers Among Individuals With a Spinal Cord Injury: A Review of the Current Knowledge, Topics in Spinal Cord Injury Rehabilitation, 15(2), 33-58, 2009.
28. Yang Y*, **Koontz AM**, Triolo R, Cooper RA, Boninger ML, Biomechanical Analysis of Functional Electrical Stimulation on Trunk Musculature During Wheelchair Propulsion, Neurorehabilitation and Neural Repair, 2009 Sep;23(7):717-25. Epub 2009 Mar 4.
29. Cowan R, Nash MS, Collinger JL, **Koontz AM**, Boninger ML, Impact of Surface Type, Wheelchair Weight, and Axle Position on Wheelchair Propulsion by Novice Older Adults, Archives of Physical Medicine and Rehabilitation, 90, 1076-83, 2009.
30. Collinger JL, Boninger ML, **Koontz AM**, Price R, Sisto SA, Tolerico M, Cooper RA. Shoulder biomechanics during the push phase of wheelchair propulsion: A multi-site study of individuals with paraplegia, Archives of Physical Medicine and Rehabilitation, 89(4), 667-676, 2008.
31. **Koontz AM**, Yang Y, Price R, Tolerico ML, DiGiovine CP, Sisto SA, Cooper RA, Boninger ML. Multi-site comparison of wheelchair propulsion kinetics in persons with paraplegia. Journal of Rehabilitation Research and Development, 44(3), 449-458, 2007.

32. Price R, Ashwell ZR, Chang MW, Boninger ML, **Koontz AM**, Sisto SA. Upper Limb Joint Power and its Distribution in Spinal Cord Injured Wheelchair Users: Steady Self-Selected Speed vs. Maximal Acceleration Trials, Archives of Physical Medicine and Rehabilitation, 88(4), 456-63, 2007.
33. Cooper RA, Boninger ML, Spaeth DM, Ding D, Guo S, **Koontz AM**, Fitzgerald SG, Cooper R, Kelleher AR, Collins DM, Engineering Better Wheelchairs to Enhance Community Participation, IEEE Transactions on Neural Systems and Rehabilitation Engineering, 14(4), 438-455, Dec. 2006.
34. **Koontz AM**, Yang Y, Boninger DS, Kanaly J, Cooper RA, Boninger ML, Dieruf K, Ewer L. Investigation of the performance of an ergonomic handrim as a pain-relieving intervention for manual wheelchair users. Assistive Technology, 18(2), 123-143, 2006.
35. Yang Y*, **Koontz AM**, Triolo RJ, Mercer J, Boninger ML. Surface electromyography activity of trunk muscles during wheelchair propulsion. Clinical Biomechanics, 21(10), 1032-1041, 2006.
36. Mercer JL, Boninger ML, **Koontz AM**, Ren D, Dyson-Hudson T, Cooper RA. Shoulder joint kinetics and pathology in manual wheelchair users, Clinical Biomechanics, 21(8), 781-789, Oct. 2006.
37. DiGiovine CP, **Koontz AM**, Boninger ML. Advances in manual wheelchair technology. Topics in Spinal Cord Injury Rehabilitation, 11(4), 1-14, 2006.
38. **Koontz AM**, Cooper RA, Boninger ML, Yang Y, Impink BG, van der Woude LHV. A kinetic analysis of start-up manual wheelchair propulsion on select indoor and outdoor surfaces. Journal of Rehabilitation Research and Development, 42(4), 447-458, 2005.
39. Boninger ML, **Koontz AM**, Sisto SA, Dyson-Hudson TA, Chang M, Price R, Cooper RA. Pushrim biomechanics and injury prevention in spinal cord injury: recommendations based on CULP-SCI investigations. Journal of Rehabilitation Research and Development, 42(3), Supplement 1, 9-20, 2005.
40. Boninger ML, Impink BG, Cooper RA, **Koontz AM**. Relationship between median and ulnar nerve function and wrist kinematics during wheelchair propulsion. Archives of Physical Medicine and Rehabilitation, 85(7), 1141-5, 2004.
41. Fay BT, Boninger ML, Fitzgerald SF, Souza AL, Cooper RA, **Koontz AM**. Manual wheelchair pushrim dynamics in persons with multiple sclerosis. Archives of Physical Medicine and Rehabilitation, 85(6), 935-942, 2004.
42. **Koontz AM**, Cooper, RA, Boninger, ML, Souza AL, and Fay BT. Scapular orientation in a virtual wheelchair push. International Journal of Industrial Ergonomics, 33(3), 237-248, 2004.
43. Boninger ML, Dicianno BE, Cooper RA, Towers JD, **Koontz AM**, Souza AL. Shoulder injury,

wheelchair propulsion and gender. Archives of Physical Medicine and Rehabilitation, Archives of Physical Medicine and Rehabilitation, 84(11), 1615-20, 2003.

44. Cooper RA, Boninger ML, Brienza DM, van Roosmalen L, **Koontz AM**, LoPresti E, Spaeth DM, Bertocci GE, Guo S, Bunning ME, Schmeler M, Geyer MJ, Fitzgerald SG, Ding D. Pittsburgh wheelchair and seating biomechanics research program. Journal of the Society of Biomechanism Japan, 17(3), 144-157, 2003.
45. Corfman TA, Cooper RA, Boninger ML, **Koontz AM**, Fitzgerald SG. Range of motion and stroke frequency differences between manual wheelchair propulsion and pushrim-activated power-assisted wheelchair propulsion. Journal of Spinal Cord Injury Medicine, 26, 135-140, 2003.
46. **Koontz AM**, Cooper, RA, Boninger, ML, Souza AL, and Fay BT. Shoulder kinematics and kinetics during two speeds of wheelchair propulsion. Journal of Rehabilitation Research & Development , 39[6], 635-649, 2002.
47. Souza AL, Shimada SD, **Koontz AM**. Ground reaction forces during the power clean. Journal of Strength & Conditioning Research, 16(3):423-7, 2002.
48. Cooper RA, DiGiovine,CP, Boninger ML, Shimada,S.D, **Koontz AM**, Baldwin,MA. Filter frequency selection for manual wheelchair biomechanics. Journal of Rehabilitation Research & Development, 39(3):322-336, 2002.
49. Boninger ML, Souza AL, Fitzgerald SG, Cooper RA, **Koontz AM**, and Fay BT. Propulsion patterns and pushrim biomechanics in manual wheelchair propulsion. Archives of Physical Medicine & Rehabilitation, 83: 718-723, 2002.
50. Shimada SD, Cooper RA, Boninger ML, **Koontz AM**, Corfman TA. Comparison of three different methods to represent the wrist during wheelchair propulsion. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 9(3): 274-282, 2001.
51. **Koontz AM**, Cooper RA, Boninger ML, Baldwin MA. An autoregressive modeling approach to analyzing wheelchair propulsion forces. Medical Engineering & Physics, 23:285-291, 2001.
52. Boninger ML, Baldwin MA, Cooper RA, **Koontz AM**, Chan LC. Manual wheelchair pushrim biomechanics and axle position. Archives of Physical Medicine and Rehabilitation, 81;608-613, 2000.
53. Boninger ML, Cooper RA, Baldwin MA, Shimada SD, **Koontz AM**. Wheelchair pushrim kinetics, weight and median nerve function. Archives of Physical Medicine and Rehabilitation, 80;910-915, 1999.

Peer Reviewed Abstracts and Conference Proceedings

1. **Koontz AM** and Tsai C-Y. Immediate effects of transfer component skills training on upper limb biomechanics. Paralyzed Veterans of America's Annual Conference, Summit 2016, August 30-Sept 1, 2016, Orlando, FL.
2. Wei, L, Hyun WK, Tsai C-Y and **Koontz AM**. Can the Kinect detect differences between proper and improper wheelchair transfer techniques? Proceedings of the RESNA/NCART 2016 Annual Conference, July 10-14, 2016, Arlington, VA.
3. Worobey L, Hogaboom N, Rice LA, and **Koontz AM**. Why technique is important, how to teach it, and does training change it? American Congress of Rehabilitation Medicine 93rd Annual Conference, October 30-November 4, 2016, Chicago, IL.
4. Bass S and **Koontz AM**. Techniques used to optimize wheelchair propulsion startup. Proceedings of the ASB 2015 Annual Conference, Columbus, OH, August 4-8, 2015.
5. Hogaboom NS, Lin Y-S, Worobey LA, **Koontz AM**, Boninger ML. Wrist compressive forces affect the median nerve response to wheelchair propulsion and other markers for carpal tunnel syndrome in people with paraplegia. Proceedings of the ASB 2015 Annual Conference, Columbus, OH, August 4-8, 2015.
6. Kulich H**, Bass S, **Koontz AM**. Accessibility barriers affecting independent wheelchair transfers in the community. Proceedings of the RESNA 2015 Annual Conference, June 11-14, 2015, Denver, CO.
7. Wei L, Tsai C-Y, Bass S, **Koontz AM**. Differences in the upper limb mechanical demands between wheelchair to bench and bench to wheelchair sitting-pivot transfers. Proceedings of the RESNA 2015 Annual Conference, June 11-14, 2015, Denver, CO.
8. Kulich H**, Bass S, **Koontz AM**. The effects of grab bar presence on independent wheelchair transfer height and technique. Proceedings of the RESNA 2015 Annual Conference, June 11-14, 2015, Denver, CO.
9. **Koontz AM**, Tsai C-Y, Sherman ZA**, Boninger ML. Transfers skill deficits among veterans who use wheeled mobility devices, Proceedings of the 31th International Seating Symposium, February 26-28, 2015, Nashville, TN.
10. Hogaboom NS, Oyster ML, **Koontz AM**, Boninger ML. Transfers affect changes in ultrasonographic markers for biceps tendon degeneration, Proceedings of the 31th International Seating Symposium, February 26-28, 2015, Nashville, TN.
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142. Guo S., Cooper RA, Boninger ML, Collins J, **Koontz AM**. Techniques of data collection from two SMART^{Wheels}. Proceedings of the RESNA 2001 Annual Conference, Reno, NV, June 21-25, 2001, pp. 274-276.
143. Fay BT, Boninger ML, Cooper RA, **Koontz AM**. Considering gender differences in manual wheelchair propulsion kinetics: Use of a pushrim force ratio. Proceedings of the RESNA 2001 Annual Conference, Reno, NV, June 21-25, 2001, pp. 277-279.

144. Ma L, Boninger ML, **Koontz AM**, Fay BT, Cooper RA. Mechanical energy change within the segments of upper extremity during wheelchair propulsion. Proceedings of the RESNA 2001 Annual Conference, Reno, NV, June 21-25, 2001, pp. 307-309.
145. **Koontz AM**, Cooper RA, VanRoosmalen L. Anthropometrics in Wheelchair Mobility Studies. Anthropometrics of Disability: An International Workshop, Buffalo, NY, May 31 – June 2, 2001, pp. 13-1 to 13-5.
146. Dicianno BE, Boninger ML, Towers JD, **Koontz AM**, Cooper RA. Wheelchair propulsion forces and MRI evidence of shoulder injury. Abstracts of the Academic Physiatrists Annual Meeting, Hilton Head, SC, May 2001.
147. **Koontz AM**, Boninger ML, Cooper RA. The role of the shoulder during wheelchair propulsion. Proceedings of the Seventeenth International Seating Symposium, Orlando, FL, February 22-24, 2001.
148. **Koontz AM**, Boninger ML, Cooper RA, Fay BT. Relating shoulder joint forces and range of motion during wheelchair propulsion. Proceedings of the 24th Annual Meeting of the ASB, Chicago, IL. July 19-22, 2000.
149. Fay BT, Boninger ML, Cooper RA, **Koontz AM**. Gender differences in the kinetic features of manual wheelchair propulsion. Proceedings of the 24th Annual Meeting of the ASB, Chicago, IL. July 19-22, 2000.
150. **Koontz AM**, Cooper RA, Boninger ML, Fay BT, Baldwin MA. Shoulder joint forces and moments during two speeds of wheelchair propulsion. Proceedings of the RESNA 2000 Annual Conference, Orlando, FL, June 24-July 2, 2000.
151. Collins JD, Boninger ML, **Koontz AM**, Cooper RA, Songfeng G. Visual frequency feedback and its effect on wheelchair propulsion kinetics. Proceedings of the RESNA 2000 Annual Conference, Orlando, FL, June 24-July 2, 2000.
152. Fay BT, Boninger ML, Cooper RA, **Koontz AM**, Fitzgerald SG. Gender-based anthropometric differences of manual wheelchair users. Proceedings of the 23rd Annual RESNA Conference, Orlando, FL, June 28-July 2, 2000.
153. Souza AL, Boninger ML, **Koontz AM**, Fay BT, Cooper RA. A kinetic analysis of propulsion patterns in manual wheelchair users. Proceedings of the 23rd Annual RESNA Conference, Orlando, FL, June 28-July 2, 2000.
154. Souza AL, Boninger ML, **Koontz AM**, Fay BT, Cooper RA. Classification of stroke patterns in manual wheelchair propulsion. Proceedings of the 23rd Annual RESNA Conference, Orlando, FL, June 28-July 2, 2000.

155. **Koontz AM**, Boninger ML, Baldwin MA, Cooper RA, Fay BT. Wrist flexor muscle activity during wheelchair propulsion. Proceedings of the 2nd National VA Rehabilitation Research and Development Conference-“The Next Generation”, Washington D.C., February 20-22, 1999.
156. Fay BT, Boninger ML, Baldwin MA, **Koontz AM**, Cooper RA. Maximum contraction measurement at the wrist. Proceedings of the 2nd National Department of VA Rehabilitation Research and Development Conference, Washington, D.C., February 20-22, 2000;142.
157. Cooper RA, Boninger ML, Fitzgerald SF, **Koontz AM**, Prevention and Treatment of Repetitive Strain Injuries Among Manual Wheelchair Users, Proceedings APEC Workshop on Technology with Humanistic Concerns for Disabilities, Taipei, Taiwan, pp. 99-110, 2000.
158. **Koontz AM**, Boninger ML, Baldwin MA, Cooper RA. EMG activity of wrist muscles during wheelchair propulsion. Proceedings of the 1st Joint Meeting of BMES & EMBS, Atlanta, GA, October 13-16, 1999.
159. Baldwin MA, Boninger ML, **Koontz AM**, Fay BT, Cooper RA. Comparison of propulsion kinetics and forearm EMG between two wheelchair pushrim designs. Proceedings of the 1st Joint Meeting of BMES & EMBS, Atlanta, GA, October 13-16, 1999; Abstract, 105.
160. Fay BT, Boninger ML, Cooper RA, Baldwin MA, **Koontz AM**. Wrist kinematics and indicators of carpal tunnel syndrome during manual wheelchair propulsion. Proceedings of the 1st Joint Meeting of BMES & EMBS, Atlanta, GA, October 13-16, 1999; Abstract, 108.
161. **Koontz AM**, Boninger ML, Towers J, Cooper RA, Baldwin MA. Wheelchair propulsion forces and MRI evidence of shoulder impairment. Proceedings of the 23rd Annual Meeting of the ASB, Pittsburgh, PA, October 21-23, 1999.
162. **Koontz AM**, Cooper RA, Boninger ML, Baldwin MA. Comparison of side-to-side wheelchair propulsion forces using an ARMA modeling technique. Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) 1999 Annual Conference, Long Beach, CA, June 25-29, 1999.
163. Baldwin MA, Boninger ML, **Koontz AM**, Cooper, RA. Relating wheelchair setup to propulsion biomechanics. Proceedings of the RESNA 1999 Annual Conference, Long Beach, CA, June 25-29, 1999.
164. O'Connor TJ, Cooper RA, Baldwin MA, **Koontz AM**, Boninger ML, Dvorznak MJ. Calculation of work and power during wheelchair propulsion of individuals with paraplegia. Proceedings of the RESNA 1999 Annual Conference, Long Beach, CA, June 25-29, 1999.
165. Fay BT, Boninger ML, Cooper RA, **Koontz AM**, Baldwin MA. Gender differences in the kinematic features of manual wheelchair propulsion. Proceedings of the RESNA 1999 Annual Conference, Long Beach, CA, June 25-29, 1999.

166. **Koontz AM** and Cooper RA. Comparison of manual wheelchairs, using ANSI/RESNA standards. Proceedings of the Fifteenth International Seating Symposium, Orlando, FL, March 4-6, 1999.
167. **Koontz AM**, Boninger ML, Baldwin MA, Cooper RA. Effect of vinyl coated pushrims on wheelchair propulsion kinetics. Proceedings of the RESNA 1998 Annual Conference, Minneapolis, MN, June 26-30, 1998.
168. O'Connor TJ, Boninger ML, Baldwin MA, Cooper RA, Shimada SD, **Koontz AM**. Biomechanical comparison of wheelchair basketball players and non-basketball players. Proceedings of the RESNA 1998 Annual Conference, Minneapolis, MN, June 26-30, 1998.

Book Chapters

1. Digiovine CP, **Koontz AM**, Berner, T, and Schmeler M. Wheelchairs and Seating Systems (Chapter 14) in Physical Medicine and Rehabilitation, 5th Edition, Randall Braddom MD, MS, Editor, Elsevier Limited, UK, 2016.
2. Cooper RA, Boninger ML, **Koontz AM**, Spaeth DM, Dvorznak MJ, Cooper R, Dobson A. Biomechanics of and Interfaces for Wheelchair Mobility in Textbook of Rehabilitation Engineering, Toshiyasu Yamamoto, Ph.D., Editor, Ishiyaku Publishers Inc., Tokyo, Japan, *in press*.
3. **Koontz AM**, Karmarkar A, Spaeth DM, Schmeler MR, and Cooper RA. Prescription of Wheelchairs and Seating Systems (Chapter 17) in Physical Medicine and Rehabilitation, 4th Edition, Randall Braddom MD, MS, Editor, Elsevier Limited, UK 2011.
1. **Koontz A.** and Shea M. Wheelchair Skills in Spinal Cord Injuries: Management and Rehabilitation, S.A. Sisto, E. Druin, and M. Sliwinski, *Editors*, Mosby Elsevier, St. Louis, MO. 2009.
2. **Koontz A.** and Druin E. Transfer Techniques in Spinal Cord Injuries: Management and Rehabilitation, S.A. Sisto, E. Druin, and M. Sliwinski, *Editors*, Mosby Elsevier, St. Louis, MO. 2009.
3. **Koontz AM**, Pearlman J, Impink BG, Cooper RA, Boninger ML, Wilkinson M**. Wheelchairs, in Introduction to Rehabilitation Engineering, Taylor & Francis Group, LLC, London, UK. 2007.
4. **Koontz AM**, McCrory JL, Cham R, Yang Y and Wilkinson M**. Rehabilitation Biomechanics, in Akay M, ed. Wiley Encyclopedia of Biomedical Engineering, John Wiley and Sons Inc., Hoboken, NJ, 2006.
5. **Koontz AM**, Ding D, Spaeth DM, Schmeler MR, Cooper RA. Prescription of Wheelchairs and Seating Systems (Chapter 18) in Physical Medicine and Rehabilitation 3rd Edition, Randall

Braddom MD, MS, *Editor*, Elsevier Limited, UK, 2006, pp. 381-411.

6. **Koontz AM**, Ambrosio, F, Souza AL, Buning ME, Arva, J, Cooper RA. Chapter 21: Strength and Disability *in* Muscle Strength, ed. Shrawan Kumar, PhD, DSc, F.Erg.S, *Editor*, CRC Press LLC, Boca Raton, FL, 2004, pp. 485-518.
7. Boninger ML, Cooper RA, Fay B, **Koontz AM**. Chapter 38: Musculoskeletal Pain and Overuse Injuries, Spinal Cord Medicine: Principles and Practice, Vernon Lin, M.D., Editor, Demos Medical Publishing, New York, NY, 2003, pp. 527-534.

Doctoral Thesis

Koontz AM, Expanding the models used to evaluate wheelchair propulsion and shoulder biomechanics, University of Pittsburgh, Doctoral thesis, 2001.

Editorials

1. **Koontz AM**, Ding D, Jan Y-K, de Groot S, Hansen A. Wheeled Mobility, Special Issue, Biomed Research International, 2015; doi: 10.1155/2015/138176. Epub 2015 Apr 1.

Other Publications

1. **Koontz AM**, Kulich H, and Ding D. Research Update, Paraplegia News, 69(1), January 2015, 40-42.
2. Tsai C-Y and **Koontz AM**. Commode Conundrum, Paraplegia News, 67(9), September 2013, 14-16.
3. Donsky P. Measuring the stress of wheelchair transfers, Pinnacle of Rehabilitation Care, publication by the Shephard Center, Atlanta, GA. Summer 2012. Featured *Tech Talk* article on the **Koontz et al.** JRRD publication: Development of a Custom Measurement System for the Biomechanical Evaluation of Independent Wheelchair Transfers.
4. Boninger ML and **Koontz AM**. Guidelines on upper limb function, Paraplegia News, 60(3), March 2006, 42-44.
5. **Koontz AM**, Boninger ML. Redesigning the Wheelchair pushrim for injury prevention, Canadian Adaptive Seating and Mobility Association Newsletter, 2005.
6. Boninger ML, Waters RL, Chase T, Dijkers MPJM, Gellman H, Gironda RJ, Goldstein B, Johnson-Taylor S, **Koontz A** and McDowell S, Preservation of upper limb function following spinal cord injury: a clinical practice guideline for healthcare professionals. Consortium for Spinal Cord Medicine, 2005.
7. **Koontz AM**, Boninger ML. [What is the Best Way to Propel a Wheelchair?](#), Canadian Adaptive Seating and Mobility Association Newsletter, Number 2, 2004.
8. **Koontz AM** and Boninger ML. Proper propulsion. Rehab Management, 16(6) July 2003, pp. 18-21.

9. **Koontz AM** and Rizzo L. Controlling his environment (Cover Story). Team Rehab Report, March 1998, pp. 26-30.

RESEARCH

Role Grant Number Source of Funds	Title of Project	Total Project Period	Amount (Direct Costs)
PI, Sub-Contract Award RE2 SBIR Phase 2 Department of Defense	Biomechanical Exoskeleton Simulator System	Recommended for Funding	\$40,193
PI on Sub-Award DOD CRM RP-SCIRP Clinical Trials	Restoration of Reaching and Grasping Function in Individuals with Spinal Cord Injury Using MyndMove Neuromodulation Therapy	Recommended for Funding	\$251,246
Co-PI EEC 1560174 NSF Research Experience for Undergraduates (REU)	American Student Placements and Internships in Rehabilitation Engineering (ASPIRE) – Competed Renewal Award	4/1/2016 – 3/31/2019	\$351,506
PI 3064 Paralyzed Veterans of America Research Foundation Clinical Trial Award	Effect of Vibration Exercise on Upper Limb Strength, Function, and Pain	4/1/2016-3/31/2018	\$138,686
PI, Sub-Contract Award Next Health R44HD085702 SBIR Direct to Phase 2 National Institutes of Health	Development and Evaluation of an Automated Transfer Technology	9/18/2015 - 8/31/2017	\$301,901
PI Stryker Medical, Corporate Sponsored Research, VA Research Foundation of Pittsburgh (VRFP)	An Ergonomic Comparison of Three Types of Patient Transport Wheelchairs	7/1/2015 - 8/31/2016	\$46,400

PI VA CPPF VA VISN 4 Pilot Program (\$50k)	Effects of Wheelchair Seat Position and FootPrint Length on Ramp Propulsion Biomechanics	10/1/2014-9/30/2016	\$50,000
PI F1580-P VA SPiRE Program VA Rehab R&D Services	Feasibility of Microsoft Kinect for Assessment of Independent Wheelchair Transfers	5/1/2015-4/30/2017	\$198,911
Co-Investigator F1454-R VA Merit Review Program	Assessment of an Experimental Robotic Assisted Transfer Device	11/1/2014-10/31/2018	\$1,097,211
Fellowship Mentor OPERF Fellowship Award Orthotic and Prosthetic Education and Research Foundation	Functional Electrical Stimulation Use in Trans-Tibial Amputations: a Pilot Study	2/1/2015-1/31/2016	\$5,000
Associate Director of Research and Project Leader B6789C VA RR&D Service Center of Excellence	Center of Excellence on Wheelchairs and Associated Rehabilitation Engineering (center renewal)	7/1/2014-6/30/2019	\$4,500,000
Co-Director Disability and Rehabilitation Research Project (DRRP) H133A130025 Adminstration for Community Living Health and Human Services NIDILRR	Self-Management Assistance Through Technology (SMART)-Virtual Coaches for Wheelchair Users	10/1/2013-9/30/2018	\$1,187,500
Co-PI EEC 1262670 NSF Research Experience for Undergraduates (REU)	American Student Placements and Internships in Rehabilitation Engineering (ASPIRE) – Competed Renewal Award	3/1/2013 – 2/29/2016	\$363,724
Principal Investigator on Sub-Contract Award SBIR 1R43HD070519-01A1 NIH	Development of an Alternative Manual Drive System for Wheelchair Mobility	7/1/2012 – 12/30/2014 (no cost extension)	\$127,660
Co-Investigator 90SI5008 Adminstration for Community Living	Spinal Cord Injury Model System (competitive renewal award)	10/1/2011 – 9/30/2016	\$301,650

Health and Human Services NIDILRR			
Co-PI US Access Board (Project #84.133E) via NIDRR RERC Supplement (H133E070024)	Data Collection Tool for Researching Transfer (Phase II)	9/1/2011 – 3/31/2014	\$132,000.00
PI B71491 VA RR&D Service Merit Review Program	Biomechanical Validation of the Transfer Assessment Instrument (TAI)	3/1/2011-2/28/2014	\$500,351.00
Co-PI US Access Board (Project#84.133E) via NIDRR RERC Supplement (H133E070024)	Data Collection Tool for Researching Transfer (Phase I)	9/1/2009– 8/31/2011	\$73,600.00
CoI B6789C VA RR&D Service Center of Excellence	Center of Excellence on Wheelchairs and Associated Rehabilitation Engineering (center renewal)	7/1/2009 – 6/30/2014	\$5,000,000
Co-PI EEC 0849878 NSF Research Experience for Undergraduates (REU)	American Student Placements and Internships in Rehabilitation Engineering (ASPIRE) – Competed Renewal Award	5/1/2009 – 4/30/2013	\$320,400
PI B6252R VA R&D Service Merit Review Program	Longitudinal Study of Acute and Chronic Upper Limb Pathology Following SCI	4/1/09 – 3/31/14	\$1,028,500
Consultant 2486 Paralyzed Veterans of America Design and Development	Development of a Wheelchair Propulsion Monitoring Device	2/1/07 – 1/31/09	\$138,000
Co-PI 070213 US Access Board via NIDRR RERC Supplement	The Prototype Anthropometric Database Project	11/1/2006–10/31/2007	\$38,460
PI A4489R VA RR&D Service Merit Review Program	Investigation of Transfer Techniques to Minimize Shoulder Joint Loading	10/1/2006 – 9/30/2009	\$370,550

Co-PI EEC 0552351 NSF Research Experience for Undergraduates (REU)	American Student Placements and Internships in Rehabilitation Engineering (ASPIRE)	5/1/2006 – 4/30/2009	\$240,900
PI E3589V VA RR&D Service Career Development	Research Career Development Award: Investigation of Transfer Biomechanics	7/1/2004 – 6/30/2007	\$314,300
CoI F2181C VA RR&D Service Center of Excellence	Center of Excellence on Wheelchairs and Associated Rehabilitation Engineering	4/1/2004 – 3/31/2009	\$4,285,000
Co-PI B3057T VA RR&D Service Merit Review Program	Longitudinal Collaborative Investigations of Arm Pain in Paraplegia	10/1/2003-9/30/2008	\$681,900
PI B3079R VA RR&D Service Merit Review Program	Biomechanical Evaluation of Independent Transfers	10/1/2003 – 9/30/2004	\$50,000
PI B3292H VA RR&D Service Career Development	Associate Investigator Award	10/1/2003 – 9/30/2005	\$56,900
PI for Pittsburgh VA COE B3043C VA RR&D Service COE Collaboration Project	Effects of Trunk Stimulation on Seated Wheelchair Function after SCI	6/1/2002 – 5/31/2004	\$150,000
PI for Pittsburgh VA COE B2674C VA RR&D Service COE Collaboration Project	The Development of a Dynamic Shoulder Model to Evaluation Function During Activity	4/1/2001 – 3/31/2003	\$150,000
Research Assistant B2290T VA RR&D Service Merit Review Program	Arm Pain in People with Paraplegia During Wheelchair Propulsion	10/1/2000 – 9/30/2003	\$454,300
Research Assistant B2311T VA RR&D Service Merit Review Program	Clinical Evaluation of a Wheelchair Mounted Robotic Arm	10/1/2000-4/30/2002	\$50,000

TEACHING

University of Pittsburgh Courses - RST

Fall 2015

HRS 2774 Rehabilitation Biomechanics (3 credits), Graduate Level Course

Spring 2001–Fall 2009; Fall 2013 to **Present** (taught both Fall and Spring Terms)

HRS 3000 – Doctoral Seminar - Assistive Technology Journal Club (1 credit) (Section Instructor)

Spring 2007 – **Present** (offered every other year);

*Taught Spring 2012 (off-year) by popular request

HRS 3705 – Wheelchair Biomechanics (1 credit), Graduate Level Course

Spring 2010 - Spring 2013 (taught both Fall and Spring Terms)

HRS 2717 (37566) – Rehabilitation Science and Technology (RST) Seminar (1 credit)

University of Pittsburgh Courses - BioE

BIOE 1002 - Bioengineering Intramural Internship

Served as research faculty advisor for the following undergraduate bioengineering students and their projects:

- 2013 Zach Sherman, Bioengineering, ‘Transfer method and its affect on hand placement during independent wheelchair transfers’
Steven Donaho, Bioengineering, ‘Effects of wheelchair setting on shoulder tendon characteristics after intense wheelchair propulsion’
- 2012 Stephanie Quatchak, Bioengineering, ‘Biomechanical demands of intense overground propulsion’
Kevin Day, ‘Effects of positioning on the acromiohumeral distance following upper extremity fatiguing exercises’
- 2011 Claire Hoelmer, ‘Transfer Assessment Instrument Reliability and Validity Across Media’
- 2008-2009 Eric Brindle, ‘Is Upper Limb Muscular Demand Different Between Wheelchair Transfers from the Preferred versus Non-Preferred Side?’
Elizabeth Timcho, ‘Effects of Surface and Speed on Biomechanics Variables During Steady-State Wheelchair Propulsion’
- 2006-2007 Bailey Roche, ‘Wheelchair Propulsion Patterns over Natural Surfaces’
Brooke Odle, ‘Upper body kinematics of Lateral Transfers among Persons with Paraplegia’
- 2004-2005 Alexandra Jefferds, ‘A Preliminary Study on the Biomechanics of Level Transfers as Performed by Persons with Paraplegia’
- 2002-2003 Martha Loehr, ‘Utilizing Figure – Human Modeler™ in the Analysis of Shoulder Kinetics and Kinematics During Wheelchair Propulsion’
- 2003-2004 Erin Aghamehdi, ‘Construction of a Custom Measurement System for Analysis of Wheelchair Transfers’

BIOE 1160/1161 - Bioengineering Senior Design

Served as primary faculty advisor for the following undergraduate bioengineering students:

2005-2006 Design of a Wheelchair-Mounted Transfer Assist Device
Team: Michael Anderson, Andrew Feola, Jill Marion, and Bryan Shelly

Independent Studies (UPitt)

Fall 2008 – Hongwu Wang, MS, ‘Influence of Gripping Moments during Wheelchair Propulsion on Natural Surfaces’, Department of Rehabilitation Science and Technology, UPitt

Fall 2010 – Yen-Sheng Lin, MS, ‘Association between Wheelchair Propulsion Kinetics and Trunk Kinematics’, Department of Rehabilitation Science and Technology, UPitt

Guest Lecturer

12/10/2015 Design for Disability - Course: BIOE 2725 Design for Injury Prevention- University of Pittsburgh

11/15/10, 3/28/11, 11/14/11 Development of the Transfer Assessment Instrument (TAI) –
3/26/12, 11/19/13, 4/8/13 Course: HRS 2901 Introduction to Research Methodology –
University of Pittsburgh

3/1/05 Wheelchair Biomechanics – Course: Introduction to
Biomechanics (undergraduate level) – Carnegie Mellon University

3/15/03, 1/21/04 3D Kinematics of Human Motion – Course: HRS 3705
Wheelchair Biomechanics (graduate level) – University of
Pittsburgh

4/1/03, 3/30/04, 2/22/05 Rehabilitation Biomechanics – Course: Introduction to
Biomechanics (undergraduate level) – Carnegie Mellon University

HERL Internship Program: Summer Lecture Series

“Adaptive Sports”, Summer Terms: 2015, 2014, 2013

“Introduction to Assistive Technology”, Summer Term: 2004-2006, 2009, 2010-2012

“Careers in Rehabilitation Technology and Advanced Degree Options and Certifications”, Summer Term: 2004-2007.

“Presenting your Research”, Summer Term: 2004-2006

Instructional Courses, Workshops, Seminars, Short Courses

“Manual Wheelchairs and Propulsion Biomechanics”, presented at the HERL Wheelchair and Seating Workshop”, VA Pittsburgh HealthCare System, Pittsburgh, PA, March 22 and April 12, 2007.

“Clinical Practice Guidelines for Preservation of Upper Limb Function Following a Spinal Cord Injury”, presented at the International Seating Symposium, Pre-Conference Workshop, March 7, 2007.

“Manual Wheelchairs and Propulsion Biomechanics”, presented at the Seating and Mobility Workshop, University of Pittsburgh, Jan. 11, 2002, July 12, 2002, Jan. 10, 2003, Sept. 12, 2003, March 26, 2004, October 1, 2005, April 1, 2005.

“Manual Wheelchair Set-up”, presented at the International Seating Symposium Pre-Conference Workshop, January 22, 2005.

“New Thinking in Wheeled Mobility and Seating”, World Congress of the International Society of Prosthetics and Orthotics, Hong Kong, Hong Kong, August 1-6, 2004.

“Epidemiology of Secondary Injury and Relevant Anatomy”, presented at the International Seating Symposium Pre-Conference Workshop, February 26, 2003.

“Manual Wheelchair Set-up” presented at the International Seating Symposium Pre-Conference Workshop, February 26, 2003.

"Assessment and Implementation of Multiple Assistive Technology Needs: Processes and Problems", presented at the RESNA 1997 Annual Conference, Pittsburgh, PA, June 20-24, 1997.

"Factors to Consider When Evaluating and Implementing a Computer Based AAC Integrated System with the Active Adult", presented and paper accepted for the Technology and Persons with Disabilities Annual Conference (CSUN), Los Angeles, CA, March 18-23, 1997.

"Use of Assistive Technology in Vocational Evaluation and the Workplace", presented at the Office of Vocational Rehabilitation Governor's Conference, Hershey, PA, October 9, 1996.

"Use of Assistive Technology in Evaluation of Individuals with Most Severe Disabilities", presented at the National Rehabilitation Association 1996 Annual Training Conference and Exhibits, Norfolk, VA, September 5-8, 1996.

"A Rehabilitation Hospital's Approach to Assistive Technology in Vocational Assessment", presented at the National Rehabilitation Counselors Association 13th Annual Professional Development Symposium, Little Rock, AK, March 8-10, 1996.

Invited Lectures

“Biomechanical Analysis of Sitting Pivot Wheelchair Transfers”, American Society of Biomechanics Annual Conference, Long Beach, CA August 10-13, 2011.

“Manual Wheelchair Propulsion and Use – State of the Art” (Tutorial), co-taught with Dr. Lucas LH van der Woude, The International Association of Science and Technology for Development (IASTED) International Conference on Assistive Technologies (AT 2008), Baltimore, MD, April 16-18, 2008.

“Gadgets and Gizmos – Advances in Mobility”, presented at the American Academy of Physical Medicine and Rehabilitation Annual Assembly, Boston MA, September 27-30, 2007.

“Evidence-Based Guidelines for Optimal Manual Wheelchair Selection, Setup, and Propulsion Techniques”, Rex H. Newton Ground Rounds at HealthSouth Harmarville Rehabilitation Center, Pittsburgh, PA, January 25, 2007.

“My CDA Experience – VA Rehab R&D Service”, presented in the workshop entitled, ‘Veterans Affairs (VA) Research Career Development Awards and Aging Research Workshop’, 58th Annual Scientific Meeting of the Gerontological Society of America, Dallas, TX, November 19, 2006.

“Mobility-Related Assistive Technologies: From Concept to Practice”, Physical Therapy Ground Rounds at Northwestern University, Chicago, IL, November 9, 2006.

“State-of-the-Science in Wheelchair Technology”, presented at VA Research Week, VA Central Office, March 31, 2005

“Manual Wheelchair Selection and Transfer Techniques”, State-of-the-Science Workshop: Wheelchair Research & Clinical Practice Featuring Wheelchair Skills Training, Walter Reed Army Hospital, Washington, D.C., January 14, 2005.

“Preserving Upper Limb Function in Individuals with Disability: A Clinical Guideline”, Promoting Mobility and Function: A Model System’s Approach, UPMC Rehabilitation Network and U.of Pitt School of Medicine, Dept. of PM&R, Oct. 29, 2004.

“Wheelchair Research at HERL”, presented at the University of Pittsburgh, Bioengineering New Student Orientation, August, 2001 – 2004.

Broadcasts

“Practical Tips for Protecting the Upper Limbs of Wheelchair Users”, Broadcasted Live on 9/13/2005, VA Employee Education System.

Post-doctoral Students Supervised

9/1/2015 - present Jonathan Slowik, PhD
PhD in Mechanical Engineering, The University of Texas at Austin
MS in Mechanical Engineering, The University of Texas at Austin
BS in Mechanical Engineering, Massachusetts Institute of Technology

8/2012 – 3/2014 Seonhong Hwang, PhD
PhD in Biomedical Engineering, Yonsei University, South Korea
MS in Biomedical Engineering, Yonsei University, South Korea
BS in Physical Therapy, Yonsei University, South Korea

9/2010 – 5/2011 Laura McClure, PhD, MPT, ATP
PhD in Rehabilitation Science, University of Pittsburgh

11/2007 – 6/2008 Dany Gagnon, PhD (co-supervised with Michael Boninger, MD)
PhD in Rehabilitation Science, University of Montreal

Doctoral Students Supervised (Thesis Research)

Lin Wei (committee chair)

BS Life Science, National Dong Hwa University, 2006

MS Mechanical Engineering, University of Pittsburgh, 2013

MS Biotechnology, National Dong Hwa University, 2009

PhD Rehabilitation Science, University of Pittsburgh (in progress)

Sara Peterson (committee chair)

AAS Prosthetic Technology, Century College, 1990

BA Human Service Administration, 1998

MBA Organizational Leadership, Baker College of Graduate Studies, Flint, MI, 2007

PhD Rehabilitation Science, University of Pittsburgh (in progress)

Sarah Bass (committee chair)

BS Bioengineering, Penn State University, 2013

PhD Rehabilitation Science, University of Pittsburgh (in progress)

NSF IGERT Fellowship Awardee (Sept 2013)

Hervens Jeannis (committee member)

BS Computer Engineering, Syracuse University, 2009

MS Systems Engineering, University of Maryland, 2011

PhD Rehabilitation Science, University of Pittsburgh (in progress)

Chung-Ying Tsai (committee chair)

BS Physical Therapy, National Yang-Ming University, Taipei, Taiwan, 2005

MS Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan, 2007

PhD Rehabilitation Science, University of Pittsburgh, December 2014

First Position: Physical Therapist, Evergreen Medical PLLC, New York

Brooke Odle (committee member)

BS Bioengineering, University of Pittsburgh, 2006

MS Biomedical Engineering, New Jersey Institute of Technology, 2009

PhD Biomedical Engineering, New Jersey Institute of Technology/University of Medicine and
Denistry of New Jersey – Joint PhD Program, December 2013

First Position: Post-Doctoral Scholar, Case Western Reserve

Hyun Ka (committee member)

BS Computer Science, Yonsei University, South Korea 2002

MS Instructional Technology, Yonsei University, South Korea, 2005

PhD Rehabilitation Science, University of Pittsburgh, August 2013

First Position: Post-Doctoral Fellow, RST, University of Pittsburgh

Yen-Sheng Lin (committee chair)

BS Mechanical Engineering, National Cheng Kung University, 2002

MS Biomedical Engineering, National Taiwan University, 2004

PhD Rehabilitation Science, University of Pittsburgh, April 2013

First Position: Post-Doctoral Fellow, RST, University of Pittsburgh

Lynn Worobey (committee co-chair)

BS Biomedical Engineering, Worcester Polytechnic Institute, 2008

PhD Bioengineering, University of Pittsburgh, April 2013

First Position: Student, Physical Therapy Doctoral Program, University of Pittsburgh

2010 Recipient of the NSF Graduate Research Fellowship Program (GRFP)

Padmaja Kankipati (committee chair)

BEng Medical Electronics, Vishweswariah Technological University, India, 2003

MS Biomedical Engineering, Aalborg University, Denmark, 2006

PhD Rehabilitation Science, University of Pittsburgh, April 2012

First Position: Post-Doctoral Fellow, RST, University of Pittsburgh

Laura McClure (committee member)

BS Health Science, Duquesne University, 2003

MS Physical Therapy, Duquesne University, 2004

PhD Rehabilitation Sciences, University of Pittsburgh, August 2010

First Position: Assistant Professor, Department of Rehab Science & Technology, University of Pittsburgh

Ian Rice (committee member)

BA Psychology, University of Illinois, 1998

MS Occupational Therapy, Washington University, 2002

PhD Rehabilitation Science, University of Pittsburgh, August 2010

First Position: Assistant Professor, College of Applied Health Sciences, University of Illinois at Urbana-Champaign

Bradley Impink (committee member)

BS Bioengineering, University of Pittsburgh, 2002

PhD Bioengineering, University of Pittsburgh, August 2010

First Position:

Amol Karmarker (committee member)

BS Occupational Therapy, Government Medical College, India, 2001

MS Rehabilitation Science, University of Buffalo, 2005

PhD Rehabilitation Science, University of Pittsburgh, 2009

First Position: Post-Doctoral Fellow, Division of Rehabilitation Sciences at University of Texas Medical Branch at Galveston, Texas

Rachel Cowan (committee member)

BA Physical Education, University of North Carolina Wilmington, 2000

MS Exercise Science, Wake Forest University, 2003

PhD Rehabilitation Science, University of Pittsburgh, 2007

First Position: Post-Doctoral Associate, Miami Project to Cure Paralysis, University of Miami Miller School of Medicine

Yusheng Yang (committee chair)

BA Occupational Therapy, Chung Shan Medical University, Taichung, Taiwan, 1995

MS Occupational Therapy, New York University, New York, 2000

PhD Rehabilitation Science, University of Pittsburgh, 2005

First Position: Assistant Professor, Department of Occupational Therapy, Faculty of Occupational Therapy, College of Health Science, Kaohsiung Medical University, Kaohsiung City, Taiwan

Current Position: Chair, Department of Occupational Therapy, Faculty of Occupational Therapy, College of Health Science, Kaohsiung Medical University, Kaohsiung City, Taiwan

Masters Students Supervised (Thesis Research)

Imaobong Aniema Udofa (committee member)

BS Computer Engineering, University of Maryland, Baltimore County, 2013

MS Bioengineering, University of Pittsburgh, August 2015

First Position:

Genevieve Jerome (committee chair)

BE Mechanical Engineering, Youngstown State University, 2010

MS Rehabilitation Science, University of Pittsburgh, December 2013

First Position: Life Cycle Engineer, Bayer, Harmar, PA

Alejandra Manola Ojeda (committee member)

BS Industrial Engineering, Instituto Tecnológico Autónomo de México (ITAM), 2004

MS Rehabilitation Science, University of Pittsburgh, April 2013

First Position:

Saleh Ahmed Alqahtani (committee chair)

BS Biomedical Tech-Instruments, College of Applied Medical Sciences, King Saud University, 2005

MS Rehabilitation Science, University of Pittsburgh, December 2011

First Position: Lecturer, Prosthetics and Assistive Technology Department, Taibah University

Jui-Te Lin (committee member)

BS Physical Therapy, Kaohsiung Medical University, 2007

MS Rehabilitation Science, University of Pittsburgh, August 2011

First Position: Doctoral student, Georgia Tech's PhD program

Maria Toro Hernandez (committee chair)

BS Biomedical Engineering, La Escuela de Ingeniería de Antioquia and Universidad CES, Medellín, Colombia, 2009

MS Rehabilitation Science, University of Pittsburgh, August 2011

First Position: Doctoral student, University of Pittsburgh's SHRS PhD program
Current Position: Assistant Professor, Universidad CES

Vanessa Swickline (committee chair)
BS Athletic Training, Mercyhurst College, Erie, PA, 2005
MS Rehabilitation Science, University of Pittsburgh, 2008
First Position:

Nethravathi Tharakeshwarappa (committee chair)
BS Mechanical Engineering, Kuvempu University, Karnataka, India, 1998
MS Rehabilitation Science, University of Pittsburgh, 2005
First Position: Project Engineer, Algor Inc., Pittsburgh, PA

Corey Blaugh (committee member)
BS Bioengineering, University of Pittsburgh, 2000
MS Rehabilitation Science, University of Pittsburgh, 2004
First Position: Project Engineer, Pride Mobility Products Corp., Exeter, PA

Masters/Doctoral Students Supervised (Non-Thesis Research)

2004 – 2006 Megan Yarnall, BS, enrolled MS in Bioengineering, University of Pittsburgh
(incomplete)

Fall Term 2007 Michael Turkovich, MS, enrolled in PhD in Rehabilitation Science and Technology
(completed 2010)

Medical Residents Supervised (Research Project)

2011 Hamilton C, MD (Walter Reed Army Hospital Resident in PM&R), "The impact of subject characteristics on transfer quality", submitted to the Association of Academic Physiatrists (AAP) 2012 Annual Meeting.

2010 Moon (Amy) Kim, DO (Walter Reed Army Hospital Resident in PM&R), "Relationship between Physical Function and the Performance of Independent Transfers in SCI Population" (accepted abstract and presentation at AAP 2011)

2005 M. Christina Reyes-Littau, MD, RPT (University of Pittsburgh, PM&R), "Wheelchair Use and Frequency of Transfers among Persons with Paraplegia" (accepted abstract and poster presentation at AAP 2005)

Undergraduate Students (Thesis Research)

Lindsey Brown (committee member)
BPhil Rehabilitation Science, University of Pittsburgh, December 2012

Undergraduate Co-Op Students Supervised

2016-present Andrew Sivaprakasam, Bioengineering, University of Pittsburgh
2014-2016 Hailee Kulich, Bioengineering, University of Pittsburgh

Undergraduate and Visiting Scholars Supervised

- 2015-present Jefferson Griscavage, Rehabilitation Science, University of Pittsburgh
- 2015 Kelsey Dolan, Engineering, University of Pittsburgh
- 2014 Lia Farrell, College of Arts & Sciences, University of Pittsburgh
- 2014-2015 Hailee Kulich, Bioengineering University of Pittsburgh
**Honorable Mention for the RESNA Student Scientific Paper Competition, 2015
**Honorable Mention for the ASPIRE REU Best Paper 2014
- 2013 Zachery Sherman, Bioengineering, University of Pittsburgh
John McCutcheon, Biomedical Engineering, Robert Morris University
**Winner of the ASPIRE REU Best Elevator Pitch 2013
**Honorable Mention for RESNA Student Scientific Paper Competition, 2014
Krystal Pynn, Biomedical Engineering, Stony Brook University
**Winner for RESNA Student Scientific Paper Competition, 2014
Rachel Kosciusko, Biological Sciences, University of Pittsburgh
Kinjal Patel, Bioengineering, University of Pittsburgh
- 2012 Karen Meess, Biomedical Engineering, University of Rochester
**Finalist in the RESNA Student Scientific Paper Competition, 2013
Stephanie Quatchak, Bioengineering, University of Pittsburgh
- 2011-2013
Kevin Day, Bioengineering, University of Pittsburgh
- 2011 Tyler Nabach, College of Arts and Sciences, University of Pittsburgh
Claire Hoelmer, Bioengineering, University of Pittsburgh
Winner of the ASPIRE REU Best Paper Award 2011
- 2010
Alejandra Vega, Mechanical Engineering, University of South Florida
Kathleen Llontop, Mechanical Engineering, University of Pennsylvania
Winner of the ASPIRE REU Best Research Presentation Award 2010
- 2009
Megan Naber, Biomedical Engineering, Marquette University
Winner of the ASPIRE REU Best Paper Award 2010
- 2008-2009
Eric Brindle, Bioengineering, University of Pittsburgh
- 2008
Misha Ahir, Bachelor of Physiotherapy, University of Delhi
Elizabeth Timcho, Bioengineering, University of Pittsburgh
- 2007
Elise Ferguson, General Engineering, Ohio State University
Antonio José del Ama Espinosa, National Hospital for the Spinal Cord Injury, Toledo, Spain
- 2006
Bailey Roche, Bioengineering, University of Pittsburgh
- 2005-2006
Brooke Odle, Bioengineering, University of Pittsburgh
- 2005
Matthew Wilkinson, Mechanical Engineering & Biomedical Engineering, Carnegie Mellon University
- 2004-2005

Alexandra Jefferds, Bioengineering, University of Pittsburgh
 2003-2004
 Erin Aghamehdi, Bioengineering, University of Pittsburgh
 2003
 Kazuaki Ebihara, BS in Mechanical Engineering, Waseda University, Tokyo, 1998
 2002-2003
 Martha Loehr, Bioengineering, University of Pittsburgh
 2001
 Megan Rothney, Bioengineering, University of Pittsburgh (co-supervised with Michael Boninger, MD)

High School Young Scholars Students Supervised

2014 Beckett Cromer, Pine-Richland High School, Gibsonia, PA

SERVICE

Committee Participation

University of Pittsburgh and School wide

9/2014 - present RST Faculty Promotion Review Committee
 9/2013-4/2014 Search Committee for Tenure Track Position in RST
 4/2011-10/2011 Search Committee for Tenure Track Position in RST (MS Prosthetics and Orthotics Program)
 4/2005 – present Member Core Faculty, Assistive Technology Preliminary Exam Committee (PhD, RST)
 9/2002 – 9/2006 SHRS Alumni Board Member

VAMC

12/2009 – present Alternate Member, local VA Research and Development Committee
 9/2009 – present Member, local VA Research Scientific Evaluation Subcommittee
 10/2011 - 6/1/2014 Vice Chair of the VA Research Scientific Evaluation Committee (RSEC)
 11/2005 – 8/2009 Member, local VA Research and Development Committee
 10/2008 – 7/2009 Member, local VA Research and Development Continuing Review Subcommittee
 8/2006 – 2/2009 Merit Review Panelist, VA Rehab R&D Service Merit Review Program (Orthopaedics Panel)
 7/2006 – 11/2007 Member, VA National Assistive Technology Workgroup
 6/2002 – 10/2005 Alternate Member, local VA Research and Development Committee
 5/2002 – 8/2003 Member, VA Prosthetic Clinical Management Workgroup on Wheelchairs

National and International Committees

12/2015 University of Wisconsin-Milwaukee Tenure Package Review
 6/2012 - 8/2013 Founding Member of the Independent Wheelchair Transfers (IWT) Workgroup
 1/2008 – 8/2009 Member, RESNA Professional Standards Board (PSB) Executive Committee

7/2002 – 3/2005 Member, Consortium for Spinal Cord Medicine Panel for the Preservation of Upper Extremity Function, Clinical Practice Guideline Development

Journal Peer Review

2013 - present Journal of Sports Sciences
2012 – present Disability and Rehabilitation: Assistive Technology
2012 – present Sports Medicine
2011 – present Journal of Applied Biomechanics
2011 – present Ergonomics
2011 – present Journal of Rehabilitation Medicine
2010 - present Journal of Biomechanics
2010 - present Applied Ergonomics
2009 - present Spinal Cord
2006 – present Clinical Biomechanics
2004 – present Assistive Technology
2002 – present Archives of Physical Medicine and Rehabilitation
2001 – present Journal of Spinal Cord Injury Medicine
2001 - present IEEE Transactions on Neural Systems and Rehabilitation Engineering
2000 – present Journal of Rehabilitation Research and Development
2014 Kinesiology Journal
2011 International Journal of Human Factors Modeling and Simulation (IJHFMS)
2008 Journal of Biomechanical Engineering
2008 Critical Reviews in Biomedical Engineering
2002 Research Quarterly for Exercise and Sport

Conference Paper Peer Review

2016 Design of Medical Devices Conference, April 11-14, 2016, Minneapolis, MN

Editorial Boards

6/2008 - present Associate Editor of Research, Assistive Technology Journal
9/2013 - 12/2014 Lead Editor, Special Issue on Wheeled Mobility, Biomed Research International Journal

Conference Committees

2015 Session Moderator, RESNA 2015 Annual Conference, Denver, CO June 11-14, 2015.
2014 Session Moderator, RESNA 2014 Annual Conference, Indianapolis, IN June 11-15, 2014.
2013 Symposium Organizing Committee and Session Chair, ASB Annual Conference, Omaha, NB, September 4-7, 2013.
2011 Session Moderator, RESNA/ICTA Conference, Toronto, ON, Canada, June 5-8, 2011.
2011 Session Moderator, International Seating Symposium, Nashville, TN March 3-5, 2011.

- 2009 Session Moderator, International Seating Symposium, Orlando, FL March 12-19, 2009.
- 2008 Session Organizing Committee and Chair, XVIth International Conference on Mechanics in Medicine and Biology, Pittsburgh, PA July 23 – 25, 2008.

Ad-Hoc Grant Review

- 3/2016 University of Pittsburgh, SHRS Development Fund Program
- 1/2016 External Scientific Reviewer, University of Wisconsin-Milwaukee Research Growth Initiative Program
- 2/2016 Scientific Reviewer, Department of Defense, US Army Medical Research and Material Command, 2016 Congressionally Directed Medical Research Program
- 2/2015 Merit Review Panel Chair, VA Rehab R&D Service Merit Review Program (Career Development Panel)
- 12/2014 Scientific Reviewer, Department of Defense, US Army Medical Research and Material Command, 2014 Congressionally Directed Medical Research Program
- 8/2014 Merit Review Panelist, VA Rehab R&D Service Merit Review Program (Career Development Panel)
- 2/2014 VA Merit Grant Scientific Reviewer: Musculoskeletal and Medical Rehabilitation Research Panel (Fall Round)
- 10/2013 University of Pittsburgh, SHRS Development Fund Program
- 4/2013 VA Small Projects in Rehabilitation Research (SPiRE) Grant reviewer
- 4/2013 University of Missouri Spinal Cord Injuries Research Program (UM SCIRP) Grant reviewer
- 5/2012 VA Merit Grant reviewer for the VA Cleveland R&D Committee
- 1/2010 and 1/2011 Natural Sciences and Engineering Research Council of Canada (NSERC), Individual Discovery Grants, External Reviewer
- 12/2008 City College of New York, PSC-CUNY Research Award Program
- 10/2008 Canadian Institutes of Health Research/Meetings, Planning and Dissemination Grant, International, Review Committee
- 1/2006 Spinal Cord Injury Research Fund Board RFP 04, Medical University of South Carolina
- 5/2003 Canadian Institutes of Health Research/Movement and Exercise Committee Reviews
- 2/2003 NIDRR Field Initiated Program Grant Review Competition

Community Service

- 1995 – 2002, 2005 Three Rivers Adaptive Sports, Ski Volunteer
- 2005, 2006 Walter Reed Army Hospital, Wheelchair Skills Trainer
- 2002, 2005, 2007, 2010 National Veterans Wheelchair Games
- 2008, 2010, 2014 National Veterans Winter Sports Clinic
- March 16th, 2010 Mentor Volunteer, Job Shadow Day, Pittsburgh Public Schools
- Feb 1st, 2011 Mentor Volunteer, Job Shadow Day, Pittsburgh Public Schools

Extracurricular

Group Fitness

- 3/2010 - present Group X Fitness Instructor: Alexander's Athletic Club, Harmarville, PA
- 12/2010-present Les Mills Certified BodyCombat® Instructor
- 12/2010-present Les Mills Certified RPM® Instructor

SCUBA

6/1994 NAUI OpenWater I Certification

2/2000 PADI Advanced OpenWater Certification