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**BIO**

Ian M. Rice earned his MSOT from Washington University in 2002 and PhD from the University of Pittsburgh in 2010 in rehabilitation science and technology under the guidance of Michael Boninger, MD. Dr Rice’s research interests include the investigation of strategies to maximize occupational performance and QOL in mobility device users through prevention and mitigation of secondary health complications. Guided by principles in occupational therapy, ergonomics, motor control, and biomechanics, Dr. Rice has developed expertise investigating upper limb preservation strategies during activities like wheelchair propulsion, transferring, and adapted sports while accounting for the influence of personal factors and the ambient conditions in which these activities occur. Dr. Rice has instructed both graduate and undergraduate level courses in Biomechanics, Assistive technology, Adapted Physical Education, Psychosocial Aspects of Disability, and Perceptions of Disability through Popular Culture. Additionally, Dr. Rice is a Paralympian in the sport of wheelchair racing (2000 Sydney, 2004 Athens).

**EDUCATION**

PhD. Rehabilitation Science and Technology 2*010*

University of Pittsburgh

M.S. Occupational Therapy 2002

Washington University School of Medicine

B.S. Psychology 1999

University of Illinois, Champaign Urbana, IL

**PROFESSIONAL EXPERIENCE**

Work:

Associate Teaching Professor- Department of Kinesiology and Community Health; University of Illinois at Urbana Champaign; 2019-present.

Assistant Professor: Department of Kinesiology and Community Health; University of Illinois at Urbana Champaign; 2010-2019.

Occupational Therapist: The Center for Assistive Technology; UPMC Health System, Pittsburgh, PA, 2007

Graduate:

VA Pre-Doctoral Fellow: Associated Health Rehabilitation Research Fellowship Veterans Administration Human Engineering Research Laboratories, University of Pittsburgh,

 October, 2007- 2009. (Research mentor: Dr. Michael Boninger & Dr. Rory Cooper,)

NSF, IGERT Pre-Doctoral Fellow: National Science Foundation Integrative Graduate Education and Research Training (IGERT) Fellowship at Human Engineering Research Laboratories, Pittsburgh, PA, Clinical research investigating manual wheelchair propulsion training using real time feedback software, 2006-2007. (Research mentor: Dr. Michael Boninger)

Research Associate/Doctoral Candidate: University of Pittsburgh, Human Engineering Research Laboratories, 2002- 2009. (Research mentor: Dr. Michael Boninger)

Research Assistant: Collaboration of Upper Limb Pain in Spinal Cord Injury (CULPSCI) University of Pittsburgh, 2002-2006 (Research mentor: Dr. Michael Boninger)

Research assistant: Assistive Technology Laboratory, Washington University School of Medicine - Program in Occupational Therapy, 2001-2002. (Research mentor: Dr. David Gray)

**ACADEMIC HONORS**

VA Pre-Doctoral Fellow Human Engineering Research Laboratories 2007- 2009

 University of Pittsburgh

NSF, IGERT, Pre-Doctoral Human Engineering Research Laboratories 2006-2007

Fellow University of Pittsburgh

**GRANTS AWARDED**

1. **Rice I**, Jan Y & Bleakney A. *Pressure Management in in Adapted Sports.* Paralyzed Veterans of America (PVA) Education Foundation. (Grant # 817). 6/01/2017- 5/31/2018. $47,709.00 (Role PI 12%)
2. **Rice I**, Rice L, Sosnoff J & Ratnam R. *Home Based Telerehabilitation Training System for Veterans with Spinal Cord Injury.* Chez Family Foundation Center for Wounded Veterans in Higher Education seed funding program, University of Illinois Urbana Champaign. (#4455). 1/19/2016-12/30/2016. $30,000. [Role PI (No support)]
3. **Rice I** & Jan Y. *Sustainable Sports Science Instructional Program for VA Athletes and Coaches*

Department of Veterans Affairs (VA), Adapted Sports Grant (581 VA 2016-ASG-66). 9/1/2015-3/01/2017. *$40,000.* [Role PI (No support)]

1. Rice, L.A**., Rice, I.M**.*Enhancement of Community Participation among Full Time Wheeled Mobility Device Users.* University of Illinois Campus Research Board. May 1, 2015 – November 30, 2016. $29,025. (Role: Co- I)
2. **Rice I** &Woods J. Instrumented Treadmill and Motion Capture System for Disability Studies Office of the Provost/Vice Chancellor for ResearchEquipment Funding Program. UIUC 2015, $140,000.
3. **Rice I**, Hedrick, B, Sosnoff J& Rice, L. (2013-14) *Impact of Wheelchair Propulsion and Transfer Training on Reducing Shoulder Pain and Increasing Community Participation in Pediatric Manual Wheelchair Users with Physical Disabilities.* University of Illinois Center on Health Aging, and Disability (CHAD) Award. 9/1/2013-9/1/2014. $19,780. [Role PI (No support)]
4. **Rice I**, Motl R & Rice, L*Promoting Physical Activity through a Manual Wheelchair Propulsion Activity*Intervention *in Persons with Multiple Sclerosis.*National Multiple Sclerosis Society **(**# IL 0005)10/5/2012-11/05/2013. $109,679. [Role: PI (35%)]
5. Cooper, R., Crytzer T M, **Rice I** & Oyster, ML*. Development of clinical practice guidelines for the racing smart wheel.* Veterans Administration, VAPHS Pilot Grant. May, 2013- September, 2013. $15,000. (Role: Co-I)
6. **Rice I**,& Sosnoff, J. *Effects of Wheelchair Configuration on Manual Wheelchair Propulsion*

*Training in Reducing Injurious Propulsion Biomechanics in Novice Individuals.* University of Illinois Research Board, Award 12078, 3/1/2012-5/31/2013. $22,620. [Role PI (No support)]

1. Crytzer T M, **Rice I** & Oyster, ML. *Development of Clinical Practice Guidelines for the Racing Smart Wheel*. Veterans Administration Pilot Grant, 2012. $25,000. [Role Co-PI (No support)]
2. Boninger ML & **Rice I**. Manual Wheelchair Propulsion Training. NIH 1-R03-HD049735-01A1. September 1, 2007 – September 1, 2008. ($100.000) Role RA

**PUBLICATIONS**

1. Halloran K, Focht M, Teague A, Peters J, **Rice I**, Kersh ME.  Moving forward: A review of continuous kinetics and kinematics during wheelchair usage and handcycling*, Engineering Archive* 3/2/22 (In press)
2. Rice, L, Peters, J, Fliflet, A, Sung, J, **Rice, I**. Influence of shoulder pain and fear of falling on level and non-level transfer technique. *The Journal of Spinal Cord Medicine*. 2021. (In Press)
3. Peters J, Abou, L, Rice, L, Dandeneau, K, Alluri, A, Salvador, A, **Rice, I.** The effectiveness of vigorous training interventions on cardiovascular fitness in persons with spinal cord injury: A systematic review and meta-analysis. *Spinal Cord*. 59, 1035-1044(2021).
4. **Rice, I. M**. , Jeng, B. , Silveira, S. L. & Motl, R. W. (2021). Push-Rate Threshold for Physical Activity Intensity in Persons Who Use Manual Wheelchairs. American Journal of Physical Medicine & Rehabilitation, 100(3), 292–296. doi: 10.1097/PHM.0000000000001618.
5. Peters J, **Rice I**, Bull T. Exploring the Influence of Wheelchair-User Interface and Personal Characteristics on Ischial Tuberosity Peak Pressure Index and Gradient in Elite Wheelchair Basketball Players (2019). *Adapted Physical Activity Quarterly : APAQ.* 2019 Dec:1-16. DOI: 10.1123/apaq.2019-0030. [Epub ahead of print]
6. Sanz-Quinto, S., Moya-Ramón, M., Brizuela, G., **Rice, I.**, Urbán, T., & López-Grueso, R. (2019). Nutritional strategies in an elite wheelchair marathoner at 3900 m altitude: a case report. *Journal of the International Society of Sports Nutrition, 16*(1), 51.
7. Sanz-Quinto S, Brizuela G, López-Grueso R, **Rice I** & Moya-Ramón M. (2018) Influence of Training Load on Mood Disturbance at Sea Level and 3900 m Altitude: A Case Study of a Wheelchair Athlete. *Sports (Basel)*. Oct 22;6(4). pii: E122. doi: 10.3390/sports6040122. *[Epub ahead of print]*
8. **Rice I,** Peters J, Rice, L &Jan YK (2018). Influence of personal and wheelchair characteristics on pretibial skin pressure in elite wheelchair racers. *Journal of Spinal Cord Medicine,* Aug 2:1-9*. doi: 10.1080/10790268.2018.1508954. [Epub ahead of print]*
9. **Rice I,** Jayaraman, C, & Pohlig R. (2018). The Short Term Influence of Rear Wheel Axle Position and Training on Manual Wheelchair Propulsion Technique in Novice Able Bodied Participants during Steady State Treadmill Propulsion. *Disability and Rehabilitation, Assistive Technology*. DOI: 10.1080/10400435.2018.1504834. Epub ahead of print]
10. Cooper R, Tuakli-Wosornu Y, Henderson G, Quinby E, Dicianno B, Tsang K, Ding D, Cooper R, Crytzer T, Koontz A, **Rice I** & Bleakney A. (2018). Engineering and Technology in Wheelchair Sport. *Physical Medicine & Rehabilitation Clinics,* *special issue on Paralympic and Adapted Sports Medicine,* 29(2), 347-369
11. Dysterheft JL, Gioella G., Rice L & **Rice I**. (2018). Investigating the Outcomes and Perceptions of an Inclusive Aquatic Exercise Class for University Students with Physical Disabilities. *Journal of Postsecondary Education and Disability*, 31(1), 41-56
12. Dysterheft JL, Gioella C & **Rice I.** (2017) Determinants of Leisure-Time Physical Activity Participation in University Students with Physical Disabilities: A Multi-University Study. *Medicine & Science in Sports & Exercise,* 49:74-75
13. Dysterheft, J., **Rice, I.**, Learmonth, Y., Kinnett-Hopkins, D., & Motl, R. (2017). Effects of Daily Physical Activity Level on Manual Wheelchair Propulsion Technique in Full-Time Manual Wheelchair Users During Steady-State Treadmill Propulsion. *Arch Phys Med Rehabil*. doi:10.1016/j.apmr.2017.01.007
14. Rice, L & **Rice I** (2017). Evidenced Based Education Interventions to Preserve Upper Limb Function Among Full Time Manual Wheelchair Users. *Medical Research Archives, 5*(3).
15. **Rice I,** Pohlig R., Dysterheft J & Motl R. (2017). How does Vector Magnitude Obtained from Wrist Worn Actigraphy Relate to Kinetic and Spatiotemporal Measures of Wheelchair Propulsion Technique at Different Speeds. *Sports Medicine and Rehabilitation Journal, 2*(1), 1013.
16. Learmonth, Y. C., Kinnett-Hopkins, D., **Rice, I. M**., Dysterheft, J. L., & Motl, R. W. (2016). Accelerometer output and its association with energy expenditure during manual wheelchair propulsion. *Spinal Cord, 54*(2), 110-114. doi:10.1038/sc.2015.33
17. **Rice, I**., Dysterheft, J., Bleakney, A. W., & Cooper, R. A. (2016). The Influence of Glove Type on Simulated Wheelchair Racing Propulsion: A Pilot Study. *Int J Sports Med, 37*(1), 30-35. doi:10.1055/s-0035-1555926
18. Dysterheft JL, L. P., Hubbard E, Jones O, Rice L & **Rice I.** (2016). A mixed methods exploration of how university students with physical disabilities perceive physical activity and the influence of perceptions on physical activity levels. *Cogent Medicine,* 3: 1196809
19. **Rice I.** (2016). Recent Salient Literature Pertaining to the Use of Technology in Wheelchair Sports. *Current Physical Medicine and Rehabilitation Reports, 4*(4), 329-335.
20. Rice, L. A., Dysterheft, J. L., Sanders, E., & **Rice, I. M.** (2016). Short-term influence of transfer training among full time pediatric wheelchair users: A randomized trial. *J Spinal Cord Med*, 1-9. doi:10.1080/10790268.2016.1149292
21. **Rice, I. M.**, Wong, A. W., Salentine, B. A., & Rice, L. A. (2015). Differences in participation based on self-esteem in power and manual wheelchair users on a university campus: a pilot study. *Disabil Rehabil Assist Technol, 10*(2), 102-107. doi:10.3109/17483107.2013.840864
22. Dysterheft, J. L., **Rice, I. M.**, & Rice, L. A. (2015). Influence of handrim wheelchair propulsion training in adolescent wheelchair users, a pilot study. *Front Bioeng Biotechnol, 3*, 68. doi:10.3389/fbioe.2015.00068
23. Learmonth, Y. C., **Rice, I.** **M.**, Ostler, T., Rice, L. A., & Motl, R. W. (2015). Perspectives on Physical Activity Among People with Multiple Sclerosis Who Are Wheelchair Users: Informing the Design of Future Interventions. *Int J MS Care, 17*(3), 109-119. doi:10.7224/1537-2073.2014-018
24. **Rice, I. M**., Rice, L. A., & Motl, R. W. (2015). Promoting Physical Activity Through a Manual Wheelchair Propulsion Intervention in Persons With Multiple Sclerosis. *Arch Phys Med Rehabil, 96*(10), 1850-1858. doi:10.1016/j.apmr.2015.06.011
25. Liao, F., Liau, B. Y., **Rice, I. M**., Elliott, J., Brooks, I., & Jan, Y. K. (2015). Using local scale exponent to characterize heart rate variability in response to postural changes in people with spinal cord injury. *Front Physiol, 6*, 142. doi:10.3389/fphys.2015.00142
26. Sosnoff, J. J., **Rice, I. M**., Hsiao-Wecksler, E. T., Hsu, I. M., Jayaraman, C., & Moon, Y. (2015). Variability in Wheelchair Propulsion: A New Window into an Old Problem. *Front Bioeng Biotechnol, 3*, 105. doi:10.3389/fbioe.2015.00105
27. **Rice, I. M.**, Jayaraman, C., Hsiao-Wecksler, E. T., & Sosnoff, J. J. (2014). Relationship between shoulder pain and kinetic and temporal-spatial variability in wheelchair users. *Arch Phys Med Rehabil, 95*(4), 699-704. doi:10.1016/j.apmr.2013.11.005
28. Jayaraman, C., Moon, Y., **Rice, I. M**., Hsiao Wecksler, E. T., Beck, C. L., & Sosnoff, J. J. (2014). Shoulder pain and cycle to cycle kinematic spatial variability during recovery phase in manual wheelchair users: a pilot investigation. *PLoS One, 9*(3), e89794. doi:10.1371/journal.pone.0089794
29. **Rice, I. M.**, Pohlig, R. T., Gallagher, J. D., & Boninger, M. L. (2013). Handrim wheelchair propulsion training effect on overground propulsion using biomechanical real-time visual feedback. *Arch Phys Med Rehabil, 94*(2), 256-263. doi:10.1016/j.apmr.2012.09.014
30. Moon, Y., Jayaraman, C., Hsu, I. M., **Rice, I. M**., Hsiao-Wecksler, E. T., & Sosnoff, J. J. (2013). Variability of peak shoulder force during wheelchair propulsion in manual wheelchair users with and without shoulder pain. *Clin Biomech (Bristol, Avon), 28*(9-10), 967-972. doi:10.1016/j.clinbiomech.2013.10.004
31. Koontz, A. M., Worobey, L. A., **Rice, I. M.**, Collinger, J. L., & Boninger, M. L. (2012). Comparison between overground and dynamometer manual wheelchair propulsion. *J Appl Biomech, 28*(4), 412-419.
32. Laferrier JZ, **Rice I.**, Pearlman J, Sporner M, Cooper RM, Liu H, Cooper RA. (2012). Technology to Improve Sports Performance in Wheelchair Sports. *Sports Technology, 5*(1-2), 4-19.
33. **Rice, I.**, Gagnon, D., Gallagher, J., & Boninger, M. (2010). Hand rim wheelchair propulsion training using biomechanical real-time visual feedback based on motor learning theory principles. *J Spinal Cord Med, 33*(1), 33-42.
34. Cooper, R. A., Koontz, A. M., Ding, D., Kelleher, A., **Rice, I.**, & Cooper, R. (2010). Manual wheeled mobility--current and future developments from the human engineering research laboratories. *Disabil Rehabil, 32*(26), 2210-2221. doi:10.3109/09638288.2010.517599
35. **Rice, I.**, Impink, B., Niyonkuru, C., & Boninger, M. (2009). Manual wheelchair stroke characteristics during an extended period of propulsion. *Spinal Cord, 47*(5), 413-417. doi:10.1038/sc.2008.139
36. Furui T, S., Furui M & **Rice I.** (2008). The grass-roots activism of people with cerebral palsy in Japan: Early protest confronting the inaccessible bus system. *Journal of Osaka Kawasaki, 29*(11-12), 963-967.
37. Authier, E. L., Pearlman, J., Allegretti, A. L., **Rice, I.**, & Cooper, R. A. (2007). A sports wheelchair for low-income countries. *Disabil Rehabil, 29*(11-12), 963-967. doi:10.1080/09638280701240714

**BOOK CHAPTERS**

1. Mohamed AA, Jan YK, **Rice IM**, Pu F, and Cheng CK (2018). Chapter 15: *Biomechanics of Orthopedic Rehabilitation*. In: Cheng CK and Woo S, eds. Frontiers in Orthopedic Biomechanics. Springer, in press.
2. Sosnoff, J. J., **Rice, I. M**., Hsiao-Wecksler, E. T., Hsu, I. M., Jayaraman, C., & Moon, Y. *Wheeled Mobility Biomechanics,* Philip Santos Requejo & Jill L McNitt-Gray Editors, Frontiers in Bioengineering and Biotechnology, 2016 (Section 3, pp63-70) Ebook.
3. **Rice** **I**, F. Hettinga, J.Z. Laferrier, M. Sporner, C.M. Heiner, B. Burkett, R.A. Cooper. *The Paralympic Athlete: Handbook of Sports Medicine and Science*, Yves Vanlandewijck and Walter Thompson, Editors, Wiley and Blackwell. Biomechanics (Chapter 2), pp. 33-50, 2011.
4. **Rice, I.,** Laferrier JZ. *Warrior Transition Leader Medical Rehabilitation Handbook*,edited by LTC Paul F. Pasquina, MD, Rory Cooper, PhD, and Ron Drach. Washington, DC: Department of the Army, Office of The Surgeon General, Borden Institute, 2011.
5. Liu H, **Rice I**, Laferrier JZ, Cooper RA, Boninger ML, Cooper RM. *Wheelchair Sports*. Vicky Goosey-Tolfrey, Editor, Human Kinetics. Sports Chair Set-up and Selection, 2010
6. **Rice I**, Cooper RA, Cooper RM, Kelleher AR, Boyles A. *Sports and Recreation for People with Spinal Cord Injuries* (Chapter 19), 2008, pp. 455-477.
7. Cooper RA, Boninger ML, **Rice I**, Shimada SD, Cooper RM. *Elite Athletes with Impairments, Exercise in Rehabilitation Medicine, 2nd Edition,* W.R. Frontera, Editor-in-Chief, Human Kinetics Publishing, Champaign, IL, 2006.Chapter 21, pp. 332-353.

**INVITED PRESENTATIONS**

**Rice, I.M** & Rice, L.A. (2019, September 1 -4). Putting into Practice What We Preach.

Presented at the 2019 Academy of Spinal Cord Injury Professionals Conference and Expo, Nashville, TN. Therapy Leadership Council Distinguished Lecture Award. (invitation)

Peters, J. & **Rice, IM**. (2019, August 15-17). Influence of personal and wheelchair characteristics on skin pressure in elite wheelchair racing and basketball. Paper presented at the Paralyzed Veterans of America, Orlando, FL. <http://2019.summitpva.org/sites/default/files/pdf/summit-2019-abstract.pdf>

**Rice, I.M.,** Sung, J.H., Fliflet, A., Rice, L.A. (2019, March 18-22). Influence of Transfer Height on Key Measures of Technique. Presented at the 2019 International Seating Symposium, Pittsburgh, PA.

**Rice I.** *Manual Wheelchair Propulsion and Biomechanics*. National Registry of Rehabilitation Technology Suppliers (NRRTS) Webinar. December 10, 2015.

Dysterheft J, Rice L & **Rice I.** *Influence of hand rim wheelchair propulsion training in adolescent wheelchair users.* Rehabilitation Engineering Specialists of North America (RESNA). Student scientific paper competition winner ($1000), Denver CO June 28, 2015.

**Rice I**. *Targeting modifiable Factors to improve quality of life in wheelchair users across a lifespan.* Chittenden Symposium on Mobility, Technology and the Future of Health Champaign, IL, January 29, 2015.

 **Rice, I.** *Maximizing the functional potential of manual wheelchair users; Translating*

*research into daily practice*. Rehabilitation Institute of Chicago (RIC) 37th Annual Spinal Cord

 Interdisciplinary Course, Chicago, IL, June, 2014 [keynote speaker].

 **Rice I,** Blauwet C, & Rice LA.*Presentation and laboratory on adapted wheelchair sports*.

 Rehabilitation Institute of Chicago (RIC) 37th Annual Spinal Cord Interdisciplinary Course, Chicago,

 IL, June 1, 2014

**Rice I**, Dysterheft J, Bleakney A & Cooper R, *Influence of glove type on wheelchair racing biomechanics*. Wheelchair Track Summit, United States Olympic Committee USOC. Colorado Springs CO, January, 2014.

**Rice, I*.*** *Biomechanics & training concepts for wheelchair racing & handcycling*. Academy of Spinal Cord Injury Professionals (ASCIP), Las Vegas NV, September, 2013.

**Rice I** “*DRES Mission to Enhance Quality of Life for Individuals with Disabilities” Presented* to University of Illinois Trustee Karen Hasara. Champaign IL, November, 2010.

**Rice I.** *“Manual Wheelchair Propulsion Feedback Training Software”.* Faculty Presentation, Washington University Program in Occupational Therapy, St. Louis MO, July 2010.

**Rice I. *“****Manual Wheelchair Propulsion Training Using Real time Feedback*”. Developing Amazing Leaders Paralympic Conference, US Olympic Training Center, Colorado Springs CO, April, 2009.

**Rice I.** *“Equipment and Training Considerations for Wheelchair Athletes”,* 23rd International Seating Symposium (ISS) Orlando, FL, March 8, 2007.

**Rice I.** & Cooper, R. *“Locus of Control-A Client Centered Approach to AT Service Delivery*”, State of the Science Workshop for Polytrauma at Walter Reed Army Medical Center, Washington DC, September, 2006.

**Rice, I.,** Dicianno, B & Cooper, R. *“Wheelchair Racing: Technique, Equipment and Injury Prevention”*. American Academy of Physical Medicine & Rehabilitation Annual Assembly Philadelphia, PA, October 27, 2005.

**Peer Reviewed Proceedings/abstracts/presentations**

1. \*Halloran K, Peters J, Focht M**, Rice I** & Kersh ME. Kinetics of high intensity interval training during handcycling. *North American Congress on Biomechanics*, August 21-25, 2022. (Accepted as presentation)
2. \*Peters J, Halloran K, Kersh ME & **Rice I.** Feasibility and safety of a high intensity interval training based handcycling activity in people with SCI. *Paralyzed Veterans of America Healthcare Summit*, August 30, 2022 (Accepted as platform presentation with travel support awarded)
3. \*Peters J, Savard L, Rice L & **Rice I**. The influence of gender and shoulder kinematics on head-hip transfer technique. *Paralyzed Veterans of America Healthcare Summit*, August 30, 2022 (Accepted as platform presentation with travel support awarded).
4. **Rice I**, Pohlig R, Dysterheft J & Motl R. How does Vector magnitude obtained from wrist worn Actigraphy relate to kinetic and spatiotemporal measures of wheelchair propulsion technique at different speeds? *American Spinal Cord Injury Professionals Conference (ASCIP)*, Denver CO, Sept 3-7, 2017
5. Dysterheft, J, Chaparro G, Jones O, Rice LA & **Rice, I.** Investigating the Outcomes and Perceptions of an Aquatic Exercise Class for University Students with Physical Disabilities. *National Association for Adapted Physical Activity (NAFAPA)*, September 21-23, 2017.
6. Dysterheft, J, Chaparro G, & **Rice, I.** Determinants of Leisure-Time Physical Activity Participation in University Students with Physical Disabilities: A Multi-University Study. *World Congress on Exercise is Medicine®, and World Congress on the Basic Science of Exercise and the Brain of the American College of Sports Medicine.* Denver CO. May 31, 2017.
7. Gacek EA, Pakeltis A, Gaglio A, Daigle S,Jahanian O, Slavens B, **Rice I**, &Hsiao-Wecksler E. An Investigation of the Effect of Gear Ratio on Manual Wheelchair Kinetics*.* *Midwest American Society of Biomechanics*, Grand Rapids, MI. Feb. 23-24, 2017.
8. Gaglio A, Daigle S, Gacek EA, Jahanian O, Slavens B, **Rice I**, &Hsiao-Wecksler E. Validation of an Instrumented Wheelchair Hand Rim” Design of Medical Devices, *American Society of Mechanical Engineering*, Minneapolis, MN. April 10-13, 2017.
9. Rice, L.A., Dysterheft, J., **Rice, I.M**. Impact of Transfer Training Among Full Time Pediatric Wheelchair Users. *International Seating Symposium*, Vancouver, Canada, March 1-4, 2016.
10. Dysterheft, J, Chaparro G, Jones O, Rice L & **Rice, I**. Investigating the Outcomes and Perceptions of an Aquatic Exercise Class for University Students with Physical Disabilities. *North American Federation of Adapted Physical Activity (NAFAPA)*, Edmonton, AB, September 21-23, 2016.
11. **Rice I**, Dysterheft J, & Rice L. Influence of Hand rim Wheelchair Propulsion Training in Adolescent Wheelchair Users, a Pilot Study. *American Spinal Cord Injury Professionals Conference (ASCIP)*, Nashville, TN. September 4-7, 2016.
12. **Rice I** & Motl R. Physical activity intervention for persons with advanced Multiple Sclerosis. *International Seating Symposium (ISS)*. Nashville TN., 3/1/ 2015.
13. Learmonth, YC, **Rice, IM**, Ostler, T, Rice, LA, Motl, RW. Implications for Informing the Design & Delivery of Interventions to Increase Physical Activity & Exercise Behaviors in Advanced Multiple Sclerosis. *CMSC ACTRIMS Annual Meeting* 2014.
14. Sosnoff J, Hsiao-Wecksler ET, **Rice I**, ET Jayaraman C & Moon Y. Variability in Wheelchair Propulsion: A New Window into an Old Problem. *American Spinal Cord Injury Professionals Conference (ASCIP).* St. Louis, Missouri 8/31-9/3/2014. [Methodological design award winner]
15. **Rice I** & Motl R. Physical activity intervention for persons with advanced Multiple Sclerosis *International Seating Symposium (ISS)* Nashville TN, 3/1/ 2015.
16. Liao F, Brooks I, Hsieh CW, **Rice IM**, Jankowska MM, and Jan YK. Assessing complexity of heart rate variability in people with spinal cord injury using local scale exponents. *Proceeding of IEEE International Conference on Engineering in Medicine and Biology Society*, 2014.
17. Learmonth, YC, **Rice, IM**, Ostler, T, Rice, LA, Motl, RW. Implications for Informing the Design & Delivery of Interventions to Increase Physical Activity & Exercise Behaviors in Advanced Multiple Sclerosis. *CMSC ACTRIMS Annual Meeting,* 2014.
18. **Rice I**, Jayaraman C. & Sosnoff J Effects of Wheelchair Configuration on Manual Wheelchair Propulsion Training in Reducing Injurious Propulsion Biomechanics in Novice Individuals. *29th International Seating Symposium (ISS),* Academic Paper Session. Nashville, TN, March, 2013.
19. Hsu, I.M., Moon, Y., Jayaraman, C., **Rice, I**, Sosnoff J & Hsiao-Wecksler E.T Variability of upper extremity kinematics and shoulder pain during wheelchair propulsion: A vector coding analysis. *American Society of Biomechanics (ASB).* Omaha, NE, September 4-8, 2013.
20. Jayaraman, C., **Rice I**., Moon, Y., Hsu, I.M., Hsiao-Wecksler, H.T., Beck, C & Sosnoff, J.J. A principle component analysis of kinematic variability during wheelchair propulsion. *American Society of Biomechanics (ASB).* Omaha, NE, September 4-8, 2013.
21. Moon, Y., Jayaraman, C., Hsu, I. M., **Rice I., M.,** & Hsiao-Wecksler, E.T & Sosnoff J.J. Variability of peak shoulder force during wheelchair propulsion: The effect on shoulder pain. *American Society of Biomechanics (ASB).* Omaha, NE, September 4-8, 2013.
22. **Rice I**, Sosnoff J, Jayaraman C, Hsu IM & Hsiao-Wecksler ET. Hand rim force variability during two speeds of wheelchair propulsion. *Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference*, 2012.
23. Jayaraman C, Hsu IM, Moon YJ, Hsiao-Wecksler E T, **Rice I,** Sosnoff J& Beck C. Correlation analysis of upper extremity kinematics for manual wheelchair propulsion: A preliminary investigation on coupling between arm segments for people with spinal cord disorder. *American Society of Biomechanics,* 2012.
24. Jayaraman C, Culp S, Anc Z, Beck C, **Rice I,** Sosnoff J Correlation analysis of upper extremity motion during manual wheelchair propulsion: A preliminary investigation on coupling between arm segments. *Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference,* 2012.
25. Hsua IM, Jayaraman C, Culp S, **Rice I,** Hsiao-Wecksler E T & Sosnoff, J. Variability and complexity of shoulder motion during wheelchair propulsion. *Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference*, 2012.
26. Salatin B, **Rice I**, Teodorski E, Ding D, Cooper RA, A Survey of Outdoor Electric Powered Wheelchair Driving, *Proceedings of the Rehabilitation Engineering and Assistive Technology Society of North America Conference*, Las Vegas, NV, CD-Rom, June 26-30, 2010.
27. **Rice I.** Manual Wheelchair Propulsion Feedback Training Software. *Proceedings of the International Seating Symposium*, pp. 121-122, Orlando, FL, March 12-19, 2009.
28. **Rice I**, Boninger ML, Price R, Gallagher J. Manual Wheelchair Propulsion Feedback Training Software. *Institute for Rehabilitation and Research Day*, University of Pittsburgh, June 6, 2008.
29. Turkovich , M, Koontz AM, Cowan R, **Rice I**, Boninger ML. The Effect of Shoulder Position on Pushrim Forces during Over Ground Manual Wheelchair Propulsion. *Proceedings of the Annual RESNA Conference*, Arlington VA, CD-ROM, June 26-30, 2008.
30. Betz K, Cooper RA, **Rice I**, Dicianno BE. Adaptive Sports: Professional Roles in Supporting Athlete Participation and Performance*, International Seating Symposium*, p. 181-184, Orlando, FL, March 8-10, 2007.
31. Koontz AM, **Rice I**, Cowan R, Boninger ML. Effects of Wheelchair Propulsion Training on Pushrim Kinetics, *American Society of Biomechanics Annual Meeting*, Stanford University, CA, August 22-25, 2007.
32. Furui T, Furui M, Shiraishi K, Tsuchia Y & Rice **I.** Childhood Interventions and Progressive Functional Limitation Among Adults with Cerebral Palsy at the age of 42, *6th International Congress on Cerebral Palsy*, Bled, Slovenia, April 20-22, 2006.
33. Furui T, Boninger ML, Hunt PC & **Rice I.**  Social Participation of Individuals with Spinal Cord Injuries Making the Transition from Walking to Using a Wheelchair, *Proceedings of the 20th Japanese Conference on the Advancement of Assistive and Rehabilitation Technology (RESJA*), Saga City, Japan, pp. 188-189, September 2005.
34. **Rice I**, Boninger ML, Koontz AM &Cooper RA. Characteristics of the Manual Wheelchair Propulsive Stroke Under Fatigue Conditions, *Proceedings of the 28th Annual RESNA Conference,* Atlanta , GA , CD-ROM, June 25-27, 2005ROM, June 25-27, 2005.
35. Furui T, Boninger ML, Hunt PC, Fitzgerald SG & **Rice I.** Effect of Transition from Walking to a Wheelchair on Participation in Spinal Cord Injury, *Proceedings of the 28th Annual RESNA Conference,* Atlanta, GA, CD-ROM ,June 25-27, 2005ROM, June 25-27, 2005
36. Koontz AM, **Rice I**, Boninger ML & Cooper RA. Wheelchair Users with SCI Exhibit Paradoxical Trunk Movement during Propulsion, 3rd *International Congress, “Restoration of Wheeled Mobility in Spinal Cord Injury Rehabilitation: State of the Art III,*” Vrije Universiteit, Amsterdam, The Netherlands, April 19-21, 2004.
37. **Rice I,** Boninger ML, Souza AL, Cooper RA. Wrist Pain Strength and Function in Individuals with Paraplegia. 26th Annual RESNA Conference, Atlanta, GA, CD-Rom, 2003.
38. **Rice I**, Koontz AM, Boninger ML, Cooper RA. An Analysis of Trunk Excursion in Manual Wheelchair Users. 27th Annual RESNA Conference, Orlando, FL, CD-Rom, June 20-22, 2004.
39. **Rice I**, Boninger ML, Koontz AM, Cooper RA. Characteristics of the Manual Wheelchair Propulsive Stroke under Fatigue Conditions. 28th Annual RESNA Conference, Atlanta, GA, CD-ROM, June 25-27, 2005.

**TEACHING**

Courses Taught

* Kin 199 Undergraduate Open Seminar, Disability through Popular Culture: Fall 2016-present
* REHAB 520 Psychosocial Aspects of Disability (graduate): Spring 2011-2015
* Kin 360 Adapted Physical Education : Fall 2011, 2019-present
* Kin 355 Biomechanics of Human Movement: 2012-present
* Kin 494 Special Topics in Assistive Technology: 2014-2016, 2021- present

Teaching awards

List of teachers ranked as excellent by their student based on Instructor and Course Evaluation (ICES) questionnaire forms maintained by Measurement and Evaluation, Center for Innovation in Teaching & Learning, UIUC

Spring 20 for Kin 355

Fall 2016 for Kin 199

Fall 2015 for 199, 520

Fall 2011 for 360

Students Advised

Ph.D. Students:

1. Chandrasekaran Jayaraman,PhD (Co-advisor) “Shoulder Pain in Manual Wheelchair Users: Towards a Multidisciplinary Solution for a Multifaceted Problem” 2011-2016, Current position- Postdoctoral scholar at the Rehabilitation Institute of Chicago (RIC)
2. Jennifer Dysterheft, PhD (Advisor) “Investigating the Determinents and Outcomes of Leisuretime Physical Activity Participation in University Students with Physical Disabilities ” 2012-2016, Current position - Assistant Professor of Exercise Science, Hamline University
3. Jong Hun Sung, PhD(Co-advisor) “Fall Prevention Among Full Time Wheelchair Users” 2016-2019
4. Joseph Peters, PhD (Advisor) “The sub-acute effects of upper body high intensity interval training in persons with spinal cord injury” 2018-present

M.S. Students:

1. Benjamin A. Salentine, MS, (Co-advisor and thesis advisor)*,* “Manual versus power wheelchair propulsion: Quality of life and self-perception” 2011-2012*,* Current position- Associate Director of Health Sciences Managed Care — University of Illinois Hospital & Health Sciences System Chicago
2. Chandrasekaran Jayaraman, MS*,* (Co-advisor & thesis advisor)“Effects of Wheelchair Configuration on Manual Wheelchair Propulsion Training in Reducing Injurious Propulsion Biomechanics in Novice Individuals” 2011-2012
3. Michael Groves, MS, (Primary advisor) 2016-2017, Non thesis option
4. Joseph Peters, MS, (Co-advisor) “Influence of Body Position on Skin Pressure in Wheelchair Athletes” 2016-2018

Graduate Student Committee Membership:

1. Sunghoon Shin, PhD ( KCH, Dissertation Committee Member) “Spinal Cord Injury and Seated Postural Control, Kinesiology”, completed 2011
2. Yaejin Moon, MS (KCH, Master’s Thesis Committee Member) “Variability of Peak Shoulder Force During Wheelchair Propulsion in Manual Wheelchair Users With and Without Shoulder Pain”, completed 2013
3. Marissa Sible, PhD (KCH, Dissertation Committee Member), “Assessment of accessibility and perceived accessibility of campus recreation facilities by students with mobility impairments”, 2013
4. Karla Wessels, PhD (KCH, Dissertation Committee Member) “Concussions in Wheelchair Athletics”, completed 2015
5. Alicia Pence, PhD (Department of Special Education, UIUC, Dissertation Committee Member) “School-Based Extracurricular Activity Participation of Secondary Students with Severe Disabilities”, completed 2016
6. Sara Khosravinasr, PhD (KCH, Dissertation Committee Member) “A Model for Prediction of Modern Assistive Technology Abandonment among People with Disabilities”, completed 2017
7. Kate Rougeau, PhD (KCH, Dissertation Committee Member), “An Examination of Affective Change in the Absence of Physical Sensation”, completed 2017
8. Allan Gaglio, MS (Mechanical Engineering, UIUC),”An Investigation of the Effect of Gear Ratio on Manual Wheelchair Kinetics”, 2016
9. Akhila Veerubhotla, Lakshmi, PhD (University of Pittsburgh, Human Engineering lab) “Wearable Sensors to Predict Energy Expenditure for Manual Wheelchair users with Spinal Cord Injury”, 2017- 2018
10. Xiong(Phillip) Qin, PhD (KCH, Dissertation Committee Member) “Physical Activity Participation and Obesity in U.S. Youth: A MIMS Equating Study” (Defense date: 11/12/2021)

**REVIEWING**

**Journal Editor**

1. The Journal of Spinal Cord Medicine, 2018-present
2. Sports Medicine and Rehabilitation Journal (Remedy Publications LLC.), 2017- 2020

**Journal Reviewer**

1. Archives of Physical Medicine and Rehabilitation
2. Journal of Applied Biomechanics
3. Annals of Biomedical Engineering
4. Cogent Engineering
5. Medical Engineering & Physics
6. American Journal of Physical Medicine and Rehabilitation
7. Spinal Cord
8. Spinal Cord Injury Medicine
9. Topics in Spinal Cord Injury Medicine
10. Topics in Spinal Cord Injury Rehabilitation
11. Disability and Rehabilitation
12. Assistive Technology
13. Medical Engineering & Physics & Journal of Electromyography and Kinesiology
14. Journal of Aging Research
15. Transactions on Neural Systems and Rehabilitation Engineering
16. Sports Medicine and Rehabilitation Journal
17. Journal of Sports Medicine and Therapy
18. Disability and Health Journal
19. Journal of Healthcare engineering,
20. Journal of Rehabilitation Research & Development
21. PLOS ONE

**Grant Reviewer**

1. The American Institute of Biological Sciences (AIBS) Paralyzed Veterans of America (PVA), Education Foundation grant review panel, 2021, 2022.
2. University of Missouri Spinal Cord Injuries Research Program, 2011-2014, 2018
3. Natural Sciences and Engineering Research Council of Canada (NSERC). Discovery Grant Reviewer
4. Netherlands Organization for Health Research and Development (ZonMw) 2018
5. University of Illinois Research Board, (2014-present)
6. Toyota Mobility Unlimited Challenge, 2018

**PROFFESIONAL MEMBERSHIP/SERVICE**

Visiting Advisory Board for Diversity and Equity. May 2016

Vanderbilt University

Rehabilitation Engineering and Assistive

Technology Society of North America (RESNA)

Professional Standards Board 2013-2016

American Spinal Cord Injury Professionals (ASCIP) 2015-present