

Curriculum Vitae

Notarization. I have read the following and certify that this *curriculum vitae* is a current and accurate statement of my professional record.

Signature _____

Date: _____

In general, do not list a work or activity more than once.

I. Personal Information

I.A.

- UID: 108655126
- Name: **Shim, Jae Kun**
- Phone: 301-405-2492
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- Web: www.sph.umd.edu/neuromechanics

I.B. Academic Appointments at UMD

- 2005 – 2011 **Assistant Professor**
Director, Neuromechanics Laboratory
University of Maryland, College Park, MD, USA
- 2011 – 2019 **Associate Professor**
Director, Neuromechanics Research Core
University of Maryland, College Park, MD, USA
- 2019 – present **Professor**
Director, Neuromechanics Research Core
University of Maryland, College Park, MD, USA

I.C. Administrative Appointments at UMD

I.D. Other Employment

- **2002 – 2005** **Graduate Research and Teaching Assistant**
School of Physical Education, Ball State University, Muncie, IN, USA.
- **2002 – 2005** **Graduate Research and Teaching Assistant**
Department of Kinesiology
The Pennsylvania State University, University Park, PA, USA.
- **2005 – 2011** **Assistant Professor**
Director, Neuromechanics Laboratory
University of Maryland, College Park, MD, USA
- **02/01/2012 – 05/31/2024** **Kyung Hee International Scholar**
Director, Neuromechanics Lab
College of Engineering, Kyung Hee University, Yongin-Si, South Korea

I.E. Educational Background

• 1999

B.S.

Major (Summa Cum Laude) in Physical Education

College of Exercise Science & Physical Education, Kyung-Hee University, Seoul, South Korea.

• 2002

M.S.

Major in Exercise Science (Area: Clinical Biomechanics)

School of Physical Education, Ball State University, Muncie, IN 47306, USA.

Advisors: Dr. Y-H Kwon & Dr. Robert Newton

Minor in Computer Science (Area: Signal and Image Processing)

Department of Computer Science, Ball State University, Muncie, IN 47306, USA.

Advisor: Dr. Mike McGrew

• 2005

Ph.D.

Major in Kinesiology (Area: Biomechanics & Neuroscience)

Department of Kinesiology, The Pennsylvania State University, University Park, PA 16802, USA. Advisors: Dr. Vladimir M. Zatsiorsky & Dr. Mark L. Latash

Minor in Industrial Engineering (Area: Human Factors Engineering)

Department of Industrial Engineering, The Pennsylvania State University, University Park, PA 16802, USA. Advisor: Dr. Andy Freivalds

I.F. Continuing Education

N/A

I.G. Professional Certifications, Licenses, and Memberships

Secondary School Teacher License (Korean Ministry of Education)

II. Research, Scholarly, Creative and/or Professional Activities

II.A. Books (Include full citation information and ISBN)

II.A.1. Books Authored (*specify original or revised edition*)

II.A.2. Books Edited

II.A.3. Books Translated (*as translator*)

II.A.4. Major Reference Works

II.A.5. Exhibition Catalogs

II.A.6. Other

II.B. Chapters

II.B.1. Books

1. Latash ML, Olafsdottir H, Shim JK, Zatsiorsky VM (2005). Synergies that stabilize and destabilize action. In: Gantchev N. (Ed.) *From Basic motor control to functional recovery – IV*, pp. 19-25, Marin Drinov Academic Publishing House: Sofia, Bulgaria. 2005.

2. Latash ML, Shim JK, Shinohara M, Zatsiorsky VM (2006). Changes in finger coordination and hand function with advanced age. In: Latash ML (Ed.) *Motor control and Learning*. pp. 141-159, Springer. New York, NY. 2006.

II.B.2. Collections

- II.B.3. Encyclopedia
- II.B.4. Series
- II.B.5. Research Paper
- II.B.6. Other

II.C. Refereed Journals

- II.C.1. Refereed Journal Articles

2003

1. **Shim JK**, Latash ML, Zatsiorsky VM. Prehension synergies: Trial-to-trial variability and hierarchical organization of stable performance. *Experimental Brain Research* 152(2) pp.173-184, 2003.
2. **Shim JK**, Latash ML, Zatsiorsky VM. The human central nervous system needs time to organize task-specific covariation of finger forces. *Neuroscience Letters*. 353 pp.72-74, 2003.
3. Doan BK, Kwon Y-H, Newton RU, **Shim JK**, Popper EM, Rogers RA, Bolt LR, Robertson M, Kraemer WJ. Evaluation of a Lower-Body Compression Garment. *Journal of Sports Sciences* 8, pp.601-610, 2003. [SCIE]

2004

4. **Shim JK**, Latash ML, Zatsiorsky VM. Finger Coordination during torque production on a mechanically fixed object, *Experimental Brain Research* 157(4): 457-467, 2004.
5. **Shim JK**, Lay B, Zatsiorsky VM, Latash ML. Age-related changes in finger coordination in static prehension tasks. *Journal of Applied Physiology* 97(1) pp.213-224, 2004.
6. Latash ML, **Shim JK**, Zatsiorsky VM. Is there a timing synergy during multi-finger production of quick force pulses? *Experimental Brain Research* 159:65-71, 2004.
7. Latash ML, **Shim JK**, Gao F, Zatsiorsky VM. Rotational equilibrium during multi-digit pressing and prehension. *Motor Control* 8(4):392-404, 2004.
8. Zatsiorsky VM, Latash ML, Gao F, **Shim JK**. The principle of superposition in human prehension, *Robotica* 22, pp. 231-234, 2004.
9. Doyle TL, Davis RW, Humphries B, Dugan EL, **Shim JK**, and Horn BG, and Newton RU. Further evidence to change the medical classification system of the National Wheelchair Basketball Association. *Adapted Physical Activity Quarterly* 21, pp.63-70, 2004.]

2005

10. **Shim JK**, Mark L. Latash, Zatsiorsky VM. Prehension synergies: Trial-to-trial variability and principle of superposition during static prehension in three dimensions. *Journal of Neurophysiology* 93(6) pp. 3649-3658, 2005.

11. **Shim JK**, Olafsdottir H, Zatsiorsky VM, Latash ML. The emergence and disappearance of multi-digit synergies during force production tasks. *Experimental Brain Research* 164(2) pp.260-270, 2005.
12. **Shim JK**, Kim SW, Oh SJ, Kang N, Zatsiorsky VM, Latash ML. Plastic changes in interhemispheric inhibition with practice of a two-hand force production task: a transcranial magnetic stimulation study. *Neuroscience Letters* 372(2) pp.104-108, 2005. [SCI]
13. **Shim JK**, Latash ML, Zatsiorsky VM. Prehension synergies in three dimensions. *Journal of Neurophysiology* 93 pp.766-776, 2005.
14. Goodman SR, **Shim JK**, Zatsiorsky VM, Latash ML. Motor variability within a multi-effector system: Experimental and analytical studies of multi-finger production of quick force pulses. *Experimental Brain Research* 163(1) pp. 75-85, 2005.
15. Latash ML, **Shim JK**, Smilga AV, Zatsiorsky VM. A central back-coupling hypothesis on the organization of motor synergies: A physical metaphor and a neural model. *Biological Cybernetics* 92, 186–191, 2005.

2006

16. Kim SW, **Shim JK**, Zatsiorsky VM, Latash ML. Anticipatory adjustments of multi-finger synergies in preparation to self-triggered perturbations. *Experimental Brain Research* 174(4): 604-612, 2006.
17. Oliveira MA, **Shim JK**, Loss JF, Petersen RD, Clark JE. Effect of kinetic redundancy on hand digit control in children with DCD. *Neuroscience Letters* 410(1):42-46, 2006.
18. ^æ Oliveira MA, **Shim JK**. Motor Redundancy: the problem of degrees of freedom in human movement science (Redundância motora: o problema de graus de liberdade na ciência do movimento humano). *Brazilian Journal of Sport Science* (Revista Brasileira de Ciências do Esporte) 29: 9-25, 2006.
19. ^æ **Shim JK**, [§]Park J, Zatsiorsky VM, Latash ML. Adjustments of prehension synergies in response to self-triggered and experimenter-triggered loading and torque perturbations. *Experimental Brain Research* 175:641-653, 2006.
20. Newton R, Gerber A, Nimphius S, **Shim JK**, Doan B, Robertson M, Pearson D, Craig B, Hakkinen K, and Kraemer W. Determination of functional strength imbalance of the lower extremities. *Journal of Strength and Conditioning Research* 20(4), 971-977, 2006.

2007

21. ^æ **Shim JK**, [§]Huang J, [§]Hooke AW, Latash ML, Zatsiorsky VM. Multi-digit maximum voluntary torque productions on a circular object. *Ergonomics* 50(5): 660-675, 2007.
22. ^æ [§]Kim CK, Lee, DY, Lee YC, [§]Huang J, **Shim JK**. Development of finger strength and control *Journal of Sport and Leisure Studies* 31: 961-973, 2007.

23. ^æ **Shim JK**, [§]Park J. Prehension synergies: Principle of superposition and hierarchical organization in circular object prehension, *Experimental Brain Research* 180:541-556, 2007.

2008

24. ^æ **Shim JK**, [§]Hsu J, [§]Karol S, Hurley B.F. Strength training increases training-specific multi-finger coordination. *Motor Control* 12:311-329, 2008.
25. ^æ **Shim JK**, [§]Oliveira MA, [§]Hsu J, [§]Huang J, [§]Park J, Clark JE. Hand Digit Control in Children: Age-related changes in hand digit force interactions during maximum voluntary finger force production tasks. *Experimental Brain Research* 176: 374-386, 2008.
26. ^æ **Shim JK**, [§]Karol S, [§]Hsu J, [§]Oliveira MA. Hand digit control in children: Motor overflow in multi-finger force space during maximum voluntary force production. *Experimental Brain Research* 186: 443-456, 2008.
27. ^æ Oliveira MA, [§]Hsu J, [§]Park J, Clark JE, **Shim JK**. Age-related changes of multi-finger interactions during the adulthood. *Human Movement Science* 27: 714-727, 2008.
28. ^æ [§]Hooke AW, [§]Park J, **Shim JK**. Forces behind the words: development of the Kinetic Pen. *Journal of Biomechanics* 41:2060-2064, 2008.
29. Kim SW, **Shim JK**, Zatsiorsky VM, Latash ML. Finger Interdependence: Linking the Kinetic and Kinematic Variables. *Human Movement Science* 27:408-422, 2008.
30. ^æ [§]Oliveira MA, Rodrigues AM, Caballero RMS, de Souza Peterson RD, **Shim JK**. Strength and isometric torque control in individuals with Parkinson's disease. *Experimental Brain Research* 184: 445-450, 2008.

2009

31. ^æ Kim CK, Lee DY, [§]Kim YS, [§]Huang J, [§]Park J, **Shim JK** Finger force enslaving and surplus in spinal cord injury patients. *Experimental Brain Research* 195: 627-33, 2009.]
32. Goodman S, Haufler A, **Shim JK**, Hatfield B. Regular and random components in aiming point trajectory during rifle aiming and shooting. *Journal of Motor Behavior* 41:367-82, 2009.
33. ^æ [§]Kim YS, **Shim JK**. Effect of backward walking rehabilitation exercise (ABRE) program on lumbar extension strength in hernia-operated patients. *Journal of Sport and Leisure Studies* 35:801-813, 2009.
34. ^æ **Shim JK**, [§]Karol S, [§]Kim YS, [§]Yoon BC, [§]Kim CK. Coordinative interactions of motor effectors. *ICHPER SD Asia Journal of Research* 1: 9-16, 2009.
35. Park WI, Park SI, Choi HM, Lee JH, Jeon JM, Kim JK, **Shim JK**, Hosung Nho. Cardiovascular responses over the time course during muscle group III stimulation in prehypertensive individuals. *Journal of Life Science* 19: 1564-1578, 2009.

2010

36. ^æ§Kim YS, §Park J, **Shim JK**. Effects of aquatic locomotion exercise and progressive resistance exercise on lumbar extension strength in patients that have undergone lumbar discectomy. *Archives of Physical Medicine and Rehabilitation* 91: 208-214, 2010.
37. ^æ§Park J, §Kim YS, **Shim JK**. Prehension synergy: effects of static constraints on multi-finger prehension. *Human Movement Science* 29: 19-34, 2010.
38. ^æ**Shim JK**, §Hooke AW, §Kim YS, §Karol S, §Park J, Kim YH. Handwriting: Hand-pen contact force synergies in circle drawing tasks. *Journal of Biomechanics* 43: 2249-53, 2010.
39. ^æ§Kim YS, §Park J, **Shim JK**. Effect of training frequency on lumbar extension strength in patients recovering from lumbar dyscectomy. *Journal of Rehabilitation Medicine*. 42(9): 839-45, 2010.
40. Sheaff AK, Bennett A, Hanson ED, §Kim Y, §Hsu J, **Shim JK**, Edwards ST, Hurley BF. Physiological determents of the candidates physical ability tests in firefighters. *Journal of Strength and Conditioning Research* 24: 3112-3122, 2010.

2011

41. ^æ**Shim JK**, §Park J, §Kim MJ, Kim S. Motor synergy research through Uncontrolled Manifold analysis. *Korean Journal of Sport Psychology*. 22 (4): 127-142, 2011.
42. ^æ§Karol S, §Kim YS, §Huang J, Kim YH, §Koh J, Yoon BC, and **Shim JK**. Multi-finger pressing synergies change with the level of extra degrees of freedom. *Experimental Brain Research*. 208(3): 359-367, 2011.

2012

43. ^æ**Shim JK**, §Karol S, §Kim YS, Seo NJ, Kim YH, §Kim YS, Yoon BC. Tactile feedback plays a critical role in maximum finger force production. *Journal of Biomechanics*. 45: 415-420, 2012.
44. ^æ§Kim MJ, §Karol S, §Park JB, §Auyang A, Kim YH, §Kim S, **Shim JK**. Inter-joint synergies increase with motor task uncertainty in a whole-body pointing task. *Neuroscience Letters*. 512(2): 214-217. 2012.
45. ^æ§Hooke A, §Karol S, §Park JB, Kim YH, **Shim JK**. Handwriting: 3-d kinetic synergies in circle drawing movements. *Motor Control*. 16(3):329-52, 2012.
46. Seo JJ, **Shim JK**, Engel A, Enders L. Grip surface affects maximum pinch force. *Human Factors*. 53(6): 740-8, 2012.
47. ^æ§Park J, §Baum BS, §Kim YS, Kim YH, **Shim JK**. Prehension synergy: use of mechanical advantage during multi-finger torque production on mechanically fixed- and free objects. *Journal of Applied Biomechanics*. 28(3): 284-90, 2012.

2013

48. §Kim Y, Pyeon HY, Son J, **Shim JK**, Yoon BC. A neuromuscular strategy to prevent spinal torsion: backward perturbation alters asymmetry of transversus abdominis muscle thickness into symmetry. *Gait and Posture*. 38:231-235, 2013.
49. Kim Y, **Shim JK**, Hong YK, Lee SH, Yoon BC. Cutaneous sensory feedback plays a critical role in agonist-antagonist co-activation. *Experimental Brain Research*. 229:149-156, 2013.
50. ¤Hobara H, §Baum BS, §Kwon HJ, Ogata T, **Shim JK**. Running mechanics in amputee runners using running-specific prostheses. *Japanese Journal of Biomechanics in Sports & Exercise*. 17:1-9, 2013.
51. ¤§Baum BS, §Huang J, §Schultz MP, §Tian A, §Shefter B, Wolf EJ, Kwon HK, **Shim JK**. Amputee Locomotion: Determining the inertial properties of running-specific prostheses. *Archives of Physical Medicine and Rehabilitation*. 94:1776-1783. 2013.
52. ¤§Hobara H, §Baum BS, §Kwon HJ, Miller RH, Ogata T, Kim YH, **Shim JK**. Amputee locomotion: Spring-like leg behavior and stiffness regulation using running-specific prostheses. *Journal of Biomechanics*. 46:2483-2489, 2013.

2014

53. ¤§Otsuka M, **Shim JK**, Kurihara T, Yoshioka S, Isaka T. Effect of expertise on 3D force application during the starting block phase and subsequent steps in sprint running. *Journal of Applied Biomechanics*. 30:390-400, 2014.
54. ¤§Hobara H, §Baum BS, §Kwon HJ, Linberg A, Wolf EJ, Miller RH, **Shim JK**. Amputee locomotion: lower extremity loading using running-specific prostheses. *Gait and Posture* 39:386-390, 2014.
55. §Kim Y, Kim J, **Shim JK**, Suh DW, Yoon BC. The hypoalgesic effect of remote tactile sensory modulation on the mechanical sensitivity of trigger points: A randomized controlled study *NeuroRehabilitation* 35:607-614, 2014.

2015

56. §Kim YS, Kim WS, **Shim JK**, Suh DW, Kim TY, Yoon BC. Difference of motor overflow depending on the impaired or unimpaired hand in stroke patients. *Human Movement Science* 39:154-62, 2015.
57. ¤§Koh K, §Kwon HJ, §Cho Y, Shin JH, Hahn Jin-Oh, Miller RH, **Shim JK**. The role of tactile sensation in online and offline hierarchical control of multi-finger force synergy. *Experimental Brain Research* 233:2539-48, 2015.
58. Miller RH, Esterson A, **Shim JK**. Joint contact forces when minimizing the external knee adduction moment by gait modification: a computer simulation study. *The Knee* 22(6):481-9, 2015.
59. ¤§Park JB, Han DW, **Shim JK**. Effect of resistance training of the wrist joint muscles on multi-digit coordination. *Perceptual and Motor Skills*. 120:816-40, 2015.
60. ¤§Carrigan J, §Park YS, §Koh K, §Kwon HJ, **Shim JK**. Common basketball injuries and their prevention. *Korean Journal of Growth and Development*. 23:1-6, 2015.

61. ^æ §Hsu J, §Koh K, §Park YS, §Kwon HJ, Kim YH, Shin JH, **Shim JK**. Aging-related changes in hand intrinsic and extrinsic muscles and hand dexterity: an MRI investigation. *Korean Journal of Sport Biomechanics*. 25:371-381, 2015.

2016

62. ^æ §Koh K, Kwon HJ, §Park YS, Kiemel T, Miller RH, Kim YH, Shin JH, **Shim JK**. Intra-auditory integration improves motor performance and synergy in an accurate multi-finger pressing task. *Frontiers in Human Neuroscience*. 10:1-11. 2016.
63. ^æ §Baum BS, §H Hobarra, YH Kim, **Shim JK**. Amputee locomotion: Ground reaction forces during submaximal running with running-specific prostheses. *Journal of Applied Biomechanics*. 32(3):287-94. 2016.
64. ^æ §Park YS, Lim YT, §Koh K, Kim JM, §Kwon HJ, Yang JS, **Shim JK**. Association of spinal deformity and pelvic tilt with gait asymmetry in adolescent idiopathic scoliosis patients: ground reaction force investigation. *Clinical Biomechanics*. 36:52-57. 2016.
65. ^æ §Kim YS, Kim WS, §Koh K, Yoon BC, Damiano DL, **Shim JK**. Deficits in motor abilities for multi-finger force control in hemiparetic stroke survivors. *Experimental Brain Research*. 234:2391-402. 2016.
66. ^æ §Karol S, §Koh K, §Kwon HJ, §Park YS, Kwon YH, **Shim JK**. The effect of frequency of transcutaneous electrical nerve stimulation (TENS) on maximum multi-finger force production. *Korean Journal of Sport Biomechanics*. 26:93-99, 2016.
67. ^æ § Park YS, Kwon HJ, Koh K, **Shim JK**. Age-related Changes in Multi-finger Synergy during Constant Force Production with and without Additional Mechanical Constraint. *Korean Journal of Sports Biomechanics*. 26:175-181. 2016.
68. ^æ § Koh K, Park YS, Park DW, Hong CK, **Shim JK**. Development of Core Strength Training Equipment and Its Effect on the Performance and Stability of the Elderly in Activities of Daily Living. *Korean Journal of Sports Biomechanics*. 26:229-236. 2016.
69. ^æ §Park DW, §Koh K, Lee SR, ^æ §Park YS, **Shim JK**. Analysis of Postural Stability in Response to External Perturbation Intensity in Dancers and Non-dancers. *Korean Journal of Sports Biomechanics*. 26(4): 427-432. 2016.

2017

70. ^æ §Kiernan D, Miller RH, §Kwon HJ, §Baum BS, **Shim JK**. Amputee locomotion: Frequency contents of prosthetic vs. intact limb vertical ground reaction forces during running and the effects of filter cut-off frequency. *Journal of Biomechanics*. 60:248-252. 2017.
71. ^æ §Park YS, Won CR, Park DW, Lee SN, **Shim JK**. The Effects of 12 Weeks of Step Training Using Rhythmic Balance Device on Response Time for the Elderly. *Korean Journal of Physical Education* 56: 1-12. 2017 [KCI].

72. ^æ Park DW, [§]Koh K, [§]Park YS, **Shim JK**. Analysis of the dynamic balance recovery ability by external perturbation in the elderly. *Korean Journal of Sports Biomechanics*. 27(3): 205-210. 2017.
73. ^æ [§]Kim YS, [§]Koh K, Yoon BC, Kim WS, Shin JH, Park HS, **Shim JK**. Examining impairment of adaptive compensation for stabilizing motor repetitions in stroke survivors. *Experimental Brain Research*. 235: 3543-3552. 2017.

2018

74. ^æ [§]Chu E, [§]Kim YS, [§]Hill G, Kim YH, Kim CK, **Shim JK**. Wrist Resistance Training Improves Motor Control and Strength. *Journal of Strength and Conditioning Research*. 32(4) 962-969. 2018.
75. ^æ [§]Park YS, [§]Koh K, Yang JS, **Shim JK**. Efficacy of rhythmic exercise and walking exercise in the older adults' exercise participation rates and physical function outcomes. *Geriatrics & Gerontology International*. 17: 2311–2318. 2018.
76. ^æ [§]Karimpour R, Krupenevich R, Miller RH, **Shim JK**. Evaluation of gait asymmetry using force plates versus accelerometer. *Journal of Mechanics in Medicine and Biology* 18: 1850015. 2018.
77. ^æ [§]Park YS, [§]Koh K, [§]Kwon HJ, [§]Lee OJ, **Shim JK**. Aging differentially affects online control and offline control in finger force production. *PLOS ONE* 13 (5), e0198084. 2018.
78. ^æ [§]Koh K, [§]Kwon HJ, Kiemel T, Miller RH, [§]Park YS, Kim MJ, Kwon YH, Kim YH, **Shim JK**. Intra-auditory integration between pitch and loudness in humans: Evidence of super-optimal integration at moderate uncertainty in auditory signals. *Scientific Reports*, 8:13708. 2018.
79. ^æ Park DW, [§]Koh K, [§]Park YS, **Shim JK**. Uncontrolled Manifold Analysis of Whole Body CoM of the Elderly: The Effect of Training using the Core Exercise Equipment. *Korean Journal of Sports Biomechanics*. 28(4): 1-6. 2018.

2019

80. ^æ [§]Kim YS, [§]Koh K, **Shim JK**. Inter-dependence between mathematically independent variability components in human multi-finger force control. *Neuroscience Research*. 158: 16-20. 2019.
81. Hunter JG, Garcia GL, **Shim JK**, Miller RH. Fast Running Does Not Contribute More to Cumulative Load than Slow Running. *Medicine & Science in Sports and Exercise*, 51(6):1178-1185, 2019.
82. ^æ [§]Baum BS, [§]Hobara H, [§]Koh, K, [§]Kwon HJ, Miller RH, **Shim JK**. Amputee Locomotion: Joint Moment Adaptations to Running Speed using Running-Specific Prostheses. *American Journal of Physical Medicine and Rehabilitation* 98(3):182-190. 2019.

2020

83. ^æ§Caminita M, Garcia GL, Miller RH, Kwon HJ, **Shim JK**. Sensory-to-Motor Overflow: cooling foot soles impedes squat jump performance. *Frontiers in Human Neuroscience*. 14(407). 2020.
84. Hunter JG, Smith AMB, Sciarratta LM, Suydam S, **Shim JK**, Miller RH. Standardized lab shoes do not decrease loading rate variability in recreational runners. *Journal of Applied Biomechanics*. 36(5):340–344, 2020.
85. ^æ§Koh K, [§]Park YS, [§]Park DW, **Shim JK**. Dance training improves the CNS's ability to utilize the redundant degrees of freedom of the whole body. *Scientific Reports*, 10. 22197. 2020.

2021

86. ^æ Kim SE, Lee J, Lee SY, Lee HD, **Shim JK**, Lee SC. Small changes in ball position at address causes a chain effect in golf swing. *Scientific Reports*, **11**, 2694. 2021.
87. ^æ§Honarvar S, Kim C, Daiz-Mercado Y, Koh K, Kwon HJ, Kiemel T, Caminita M, Hahn JO, **Shim JK**. Unveiling the Neuro-Mechanical Mechanisms Underlying the Synergistic Interactions in Human Sensorimotor System. *Scientific Reports*, 11, 203, 2021.
88. ^æ§Burnett J, Choi YT, Li H, Wereley NM, **Shim JK**. Vibration Suppression of a Composite Prosthetic Foot Using Piezoelectric Shunt Damping. *IEEE Transactions on Biomedical Engineering (TBME)*, 68(9): 2741 - 2751. 2021.
89. Hunter JG, [§]Garcia GL, Ranadive SM, **Shim JK**, Miller RH. Roller Massage Prior to Running Does Not Affect Gait Mechanics in Well-Trained Runners. *Journal of Sport Rehabilitation*, 30(8):1178-1186. 2021.
90. ^æ§Honarvar S, [§]Caminita M, [§]Ehsani H, Kwon HJ, Daiz-Mercado Y, Hahn JO, Kiemel T, **Shim JK**. Interpersonal motor synergy: coworking strategy depends on task constraints. *Journal of Neurophysiology*, 126: 1698–1709, doi:10.1152/jn.00023.2021.

2022

91. ^æ§Bell EM, Carrignan J, Collier DK, Yang JS, **Shim JK**. Identifying Abilities that Define the Physical Function of People with Lower Extremity Amputations. *Journal of Prosthetics and Orthotics*. 34:e9-e19. doi: 10.1097/JPO.0000000000000356.
92. Liu YC, Jafari A, **Shim JK**, Paley DA. Dynamic Modeling and Simulation of Electric Scooter Interactions with a Pedestrian crowd Using a Social Force Model. *IEEE Transactions on Intelligent Transportation*, vol. 23, no. 9, pp. 16448-16461, Sept. 2022, doi: 10.1109/TITS.2022.3150282.
93. Park YS, Park DW, Koh K, Kwon HJ, **Shim JK**. Strength-dexterity Complementariness: Comparison between Left and Right Hands in Older Female Adults. *Korean Journal of Sport Biomechanics*, 31(4): 227-233.

2023

94. ^æ§Kim SE, Lee J, Lee SY, Lee HD, Lee SC, **Shim JK**. Golf Swing in Response to Anteroposterior Ball Position. *International Journal of Sports Science and Coaching*, 2023. <https://doi.org/10.1177/17479541221137672>.
95. ^æ§Snyder SJ, §Chu E, Um J, Heo YJ, Miller RH, **Shim JK**. Prediction of knee adduction moment using innovative instrumented insole and deep learning neural networks in healthy female individuals. *The Knee*. 41: 115-123. <https://doi.org/10.1080/14763141.2023.2236589>
96. ^æ§Kim MJ, Nam S, Park J. **Shim JK**. A Review of Characteristics and Assessment about Adults with Developmental Coordination Disorder, *The Korean Journal of Growth and Development*, 31(1): 1-14.
97. ^æ§Burnett JK, Kim YW, Kwon HJ, Miller RH, **Shim JK**. Whole body mass estimates and error propagation in countermovement jump: a simulated error study. *Sports Biomechanics*, DOI: [10.1080/14763141.2023.2236589](https://doi.org/10.1080/14763141.2023.2236589)
98. ^æ§Kim MJ, Nam S, Kim B, Park I, Park J, **Shim JK**. Anthropometric, physical activity, and psychological characteristics of Korean adults with and without developmental coordination disorder (DCD), *Frontiers in Neuroscience*, 17: 1280356. doi: 10.3389/fnhum.2023.1280356.
99. ^æ§Garcia G, §Caminita M, Hunter JG, Miller RH, **Shim JK**. Dorsiflexion shoes affect joint-level landing mechanics related to lower extremity injury risk in females. *Sports Biomechanics*. <https://doi.org/10.1080/14763141.2023.2191867>.
100. Lindsey B, Hanley C, Reider L, §Snyder SJ, Zhou Y, §Bell E, **Shim JK**, Hahn J, Vignos M, Eyal B. Accuracy of Military-Grade Wearable ECG Monitor Compared to Reference and Commercial Monitors. *BMJ Military Health*. 2023 Nov 24:e002541. doi: 10.1136/military-2023-002541.

2024

101. Zhou Y., Lindsey, B., Snyder S., Reider L., Bell E., Vignos M., Bar-Kochba E., Mousavi. A., Parreira J., Hanley C., **Shim JK**, Hahn J.O. (2024) Sampling Rate Requirement for Accurate Calculation of Heart Rate and Its Variability Based on the Electrocardiogram. *Physiological Measurement (Accepted for Publication)*

II.C.2. Refereed Journal Articles in REVIEW

102. Snyder S.J., Bell E.M., Oh S., Kambhamettu A., Ehsani H., Miller, R.H., Bera A., Kim, B., **Shim J.K.** Walking with Sad and Happy Emotions Significantly Influences Knee Adduction Moment. *Human Movement Science*. (in review, 2024)
103. Park DW, Park YS, Koh K, Park JB, **Shim JK**. Finger control training enhances inter-hemispheric transfer of grip strength and dexterity in older adults. *Nature Aging*. (in review, 2024)

II.C.3. Invited Reviews of Journal Articles

II.C.4. Perspectives, Opinions, and Letters

II.C.5. Other

- II.D. Published Conference Proceedings
- II.D.1. Refereed Conference Proceedings
- II.D.2. Non-Refereed Conference Proceedings
- II.D.3. Other

- II.E. Conferences, Workshops, and Talks
- II.E.1. Keynotes

1. **Shim JK**, §Karol S, §Hsu J, §Oliveira M. Motor overflow in multi-finger force space during maximum voluntary force production of children. *International Society of Biomechanics Congress*, Taipei, Taiwan, July 1-5, 2007. [Young Investigator Award Finalist]
2. **Shim JK**, §Hooke AW, §Karol S, §Park J. Handwriting mechanics: 3-D kinetic synergies in circle drawing movements. *International Society of Biomechanics Congress*, Cape Town, South Africa, July 5-8, 2009
3. **Shim JK**, Hsu J, Karol S, Kim YS, Hurley B. Training specific adaptation of multi-finger coordination. *International Society of Biomechanics in Sports (ISBS) Conference*, Seoul, Korea. July 14-18, 2008.
4. **Shim JK**. Motor synergies in multi-digit actions. *International Society of Biomechanics Congress*, Brussels, Belgium, July 3-7, 2011.
5. **Shim JK**. Hand Neuromechanics: role of tactile feedback. *Rehabilitation Robotics Symposium*, Seoul, Korea, November 3, 2014.
6. **Shim JK**. Biomechanics of Amputee Running. *International Research Forum on Biomechanics of Running-specific Prostheses*. Tokyo, Japan, March 13, 2015.
7. **Shim JK**. Importance of Team Science in Human Movement Science. *Korean Alliance for Health, Physical Education, Recreation, and Dance (KAHPERD) Annual Conference*. Seoul, Korea, June 18, 2015.
8. **Shim JK**. Importance of team science and interdisciplinary education in Sports IT. *Sangmyung Sports ICT Interdisciplinary Forum*, Seoul, Korea, November 19, 2015.
9. **Shim JK**. Inter-disciplinary research in human movement science. *Hanyang University Movement Science Center Forum*, Seoul, Korea, November 24, 2015.
10. **Shim JK**. Challenges we face in the contemporary biomechanics research. *10th Inaugural Meeting of Asian Society of Sport Biomechanics (ASSB)*, Seoul, Korea, November 27-28, 2015.
11. **Shim JK**. Biomechanical applications of science-based wearable devices for sensory replacement/augmentation and athletic periodization. *International Conference of Korean Society of Sport Biomechanics*, Pusan, Korea, December 2-3, 2016.
12. **Shim JK**. Studying brain and abroad. *International Conference of Korean Society of Sport Biomechanics*, Pusan, Korea, December 2-3, 2016.
13. **Shim JK**. Sport Science at a Crossroad of Transition: Challenges and Opportunities. *Korean Alliance for Health, Physical Education, Recreation, and Dance (KAHPERD) Annual Conference*. Iksan, Korea, October 11-12, 2018.

14. **Shim JK.** Neuromechanics: inter-disciplinary study of biomechanics and motor neuroscience. *7th Asian Society of Sports Biomechanics (ASSB) Conference*. Jeju, Korea, October 18-20, 2018.
15. **Shim JK.** Self-reflection and reality check for prosperity of Korean Sports Biomechanics. *International Conference of Korean Society of Sport Biomechanics*, Seoul National University, Korea, May 31, 2019.

II.E.2. Invited Talks

1. **Shim JK,** Latash ML, Zatsiorsky VM. Biomechanics and motor control in static prehension. 2003 Korean Society of Sports Biomechanics (KSSB) Summer Workshop, Muju, Korea. August 23-24, 2003.
2. **Shim JK,** Prehension in three-dimensions. Neuromuscular Biomechanics Laboratory, Sibley School of Mechanical & Aerospace Engineering, Cornell University, October 19, 2004.
3. **Shim JK,** Principle of superposition in human prehension. Action Club, Penn State University, October 15, 2004.
4. **Shim JK.** Motor redundancy and prehension synergy. Korean Sports Psychology Association, Seoul National University, Seoul, Korea, August 23, 2006.
5. **Shim JK.** The CNS strategies to control multi-effectors in a prehension system. Korean Association of Exercise Prescriptions, Kyungpook National University, Daegu, Korea, August 24, 2006.
6. **Shim JK.** Neuromuscular changes of finger training. Action Club, Penn State University, October 15, 2006.
7. **Shim JK.** Multi-finger actions: control, coordination, and development. Texas Tech University, October April 7, 2006.
8. **Shim JK.** Neuromusculoskeletal system of hand and fingers. Texas Tech University, April 8, 2006.
9. **Shim JK,** Multi-digit coordination. University of Maryland School of Medicine, Baltimore, October 17, 2005.
10. **Shim JK,** §Park J, §Huang J. Ergonomics and neuromechanics of circular object manipulation. 2006 International Sport Science Congress, Seoul, Korea, August 21-23, 2006.
11. **Shim JK.** Biomechanical and neural mechanisms cause motor overflow. Seoul National University, June 8, 2007.
12. **Shim JK.** Neuromechanics of hand and finger actions. Seoul National University, June 8, 2007.
13. **Shim JK.** Ipsilateral and contralateral motor overflow. Kyung Hee University, June 11, 2007.
14. **Shim JK.** Neuromuscular training changes hand and finger coordination. Ehwa Woman's University, June 12, 2007.
15. **Shim JK.** Adaptation of hand and finger control through neuromuscular resistance training. Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil. August 13, 2007.
16. **Shim JK.** Neuromechanics of human movements. Semester Opening Lecture, Faculdade da Serra Gaúcha, Caxias do Sul, RS, Brazil. August 13, 2007.

17. **Shim JK.** Multi-finger control. Motor Control Symposium, University of São Paulo State, Rio Claro, SP, Brazil. August 13, 2007.
18. **Shim JK.** Multi-finger actions in humans: control, dynamics, and adaptations, Biomechanics and Movement Sciences Seminar Series, University of Delaware, Newark, DE. November 30, 2007.
19. **Shim JK,** Multi-digit Control. Imaging Science and Information Systems Center, Georgetown University, Washington D.C., April 29, 2006.
20. **Shim JK,** §Oliveira MA, §Woo M, §Park J, §Hsu J, §Burney T, Clark JE. Development of hand digit independency from children to elderly people. NASPSA 2006 Conference, Denver CO, June 1-3, 2006.
21. **Shim JK.** Stiffness and viscosity of human movements. Seoul National University, Seoul, Korea, July 18, 2009.
22. **Shim JK.** Coordination? What Coordination?!. Korea Institute of Sports Science, Seoul, Korea, June 15, 2009.
23. **Shim JK.** Synergistic actions of multi-effectors. Kwangwoon University, Chochiwon, Korea, June 15, 2009.
24. **Shim JK.** Neuromechanics Research. Korean Society of Sports and Leisure Studies, Chochiwon, Korea, June 12, 2009.
25. **Shim JK.** Handwriting NIH, September 14, 2008.
26. **Shim JK.** Kinetics of Handwriting. Action Club, Penn State University, February 20, 2009.
27. **Shim JK.** Motor synergies: coordinative interactions of multiple effectors in redundant human motor systems. Baltimore Life Science Association Conference 2009, November 14, 2009.
28. **Shim JK.** Neuromechanics Research: Overview and CNS strategies. Department of Mechanical Engineering, Kyung-Hee University, January 11, 2009.
29. **Shim JK.** Redundancy in human movements. Kyung-Hee University, January 12, 2009.
30. **Shim JK.** Adaptation of synergies. Kyung-Hee University, January 13, 2009.
31. **Shim JK.** Development of ipsilateral and contralateral motor overflow. Kyung-Hee University, January 14, 2009.
32. **Shim JK.** Aging and motor synergies. Kyung-Hee University, January 15, 2009.
33. **Shim JK.** Neuromuscular redundancy or abundance. Korea Advanced Institute of Science and Technology (KAIST), January 17, 2009.
34. **Shim JK.** Neuromechanics: Biomechanics and motor control of musculoskeletal system. Neuromechanics Symposium, June 4, 2010.
35. **Shim JK.** Neuromechanics: What is it and why is it important. Korea University, June 7, 2010.
36. **Shim JK.** Indeterminacy in mathematics and motor redundancy/abundance in human movement science. Korea University, June 8, 2010.
37. **Shim JK.** Motor coordination and synergies. Kookmin University, Seoul, Korea, June 6, 2011.
38. **Shim JK.** National Collegiate Athletic Association (NCAA) Rules. Kyunghee University, Yongin, Korea, June 7, 2011.
39. **Shim JK.** Running footwear biomechanics. Under Armour Inc., Baltimore, Maryland, October 18, 2011.

40. **Shim JK.** Tactile feedback plays a critical role in maximum and sub-maximum force production. Neuromechanics Symposium, Yongin, Korea, February 4, 2012.
41. **Shim JK.** Neuomechanics research. Seoul Veterans Hospital, Seoul, Korea, February 12, 2012.
42. **Shim JK.** Theories and practices in neuomechanics research. Kookmin University, Seoul, Korea, February 13, 2012.
43. Karol S, **Shim JK.** Multi-finger synergies during isometric force production task in index finger amputees. Brussels Hand/Upper Limb International Symposium: Advances in prosthetics and surgical reconstructions for hand/upper extremity amputees, Brussels, Belgium, January 27-28, 2012.
44. Karol S, Kim YS, Huang J, Yoon BC, Kim YS, Pyeon HY, Kim YH, **Shim JK.** Effect of distal anesthesia on multi-finger synergies during a sub-maximal constant force production task. Brussels Hand/Upper Limb International Symposium: Advances in prosthetics and surgical reconstructions for hand/upper extremity amputees, Brussels, Belgium, January 27-28, 2012.
45. **Shim JK.** Biomechanics of amputee running. 2012 International Conference of Korea Society of Sport Biomechanics & 2012 Korea Footwear Biomechanics Symposium. Busan, Korea, October 26-27, 2012.
46. **Shim JK.** Neuomechanics in Rehabilitation. National Rehabilitation Center of Korea. Seoul, Korea, November 9, 2012.
47. **Shim JK.** Interhemispheric Interactions in Golf. 2012 International Symposium of Korean Society of Golf Studies. Chungju, Korea, November 17, 2012.
48. **Shim JK.** Evidence-based Prosthetics Development. International Symposium on Development of Global Medical Devices & Future Business Strategy. Seoul, Korea, November 23, 2012.
49. **Shim JK.** The role of exteroceptive feedback in maximum voluntary motor outputs. Yonsei University. Seoul, Korea, December 7, 2012.
50. **Shim JK.** Motor redundancy and motor synergy as a problem and a solution to extra-degrees-of-freedom in human movements. Seoul National University. Seoul, Korea, March 25, 2013.
51. **Shim JK.** The role of exteroception in maximum force outputs: tactile. Penn State University. PA, USA, April 5, 2013.
52. **Shim JK.** Multi-digit motor redundancy and synergies. Korea Institute of Machinery and Materials. Daejeon, Korea, April 12, 2013.
53. **Shim JK.** Lower-extremity amputations and amputee running. Korea Cancer Center. Seoul, Korea, April 17, 2013.
54. **Shim JK.** Hand functions in stroke patients. National Rehabilitation Center. Seoul, Korea, April 18, 2013.
55. **Shim JK.** Development of a scientific career in human movement science. Konkuk University. Seoul, Korea, April 26, 2013.
56. **Shim JK.** Amputations and prosthetic solutions. Korea Institute of Machinery and Materials: BioCenter. Daegu, Korea, May 9, 2013.
57. **Shim JK.** Neuomechanical investigation into human movements. Konyang University. Daejeon, Korea, June 18, 2013.
58. **Shim JK.** Stroke hand rehabilitation. National Rehabilitation Center. Seoul, Korea, August 23, 2013.

59. **Shim JK.** Stroke rehabilitation device development. National Rehabilitation Center. Seoul, Korea, March 7 23, 2014.
60. **Shim JK.** Stroke and hand rehabilitation. Korea Institute of Machinery and Materials. Seoul, Korea, March 23, 2014.
61. **Shim JK.** Stroke Hand Evaluation Apparatus II. National Rehabilitation Center. Seoul, Korea, June 6, 2014.
62. **Shim JK.** Stroke Wrist Evaluation Apparatus. National Rehabilitation Center. Seoul, Korea, Jan 09, 2015.
63. **Shim JK.** Development of Stroke Wrist Evaluation Apparatus. National Rehabilitation Center. Seoul, Korea, June 22, 2015.
64. **Shim JK.** Uncontrolled Manifold Analysis and its Applications to Redundant Motor Systems. Korean Institute of Sports Science. Seoul, Korea, January 22, 2015.
65. **Shim JK.** Intrasensory integration in auditory system. Rehabilitation Science Research Seminar. University of Maryland School of Medicine, Baltimore, MD, USA, October 9, 2015.
66. **Shim JK.** Equilibrium Point Theory. National Rehabilitation Center. Seoul, Korea, October 7, 2016.
67. **Shim JK.** Intra-auditory integration and motor performance and coordination. Seoul National University. Seoul, Korea, October 10, 2016.
68. **Shim JK.** Neuromechanics Research: Brain & Biomechanics. Ewha Woman's University. Seoul, Korea, October 12, 2016.
69. **Shim JK.** Hand and finger control. Seoul National University. Seoul, Korea, June 01, 2017.
70. **Shim JK.** Introduction to Neuromechanics and Neuromechanics research at University of Maryland. Kyung Hee University. Yong-In, Korea, November 17, 2017.
71. **Shim JK.** Kinesiology majors: kinesiology as an exemplary field of interdisciplinary research and education. Kyung Hee University. Yong-In, Korea, November 17, 2017.
72. **Shim JK.** Kinesiology majors: our role in the 4th industrial revolution. Han Yang University. Seoul, Korea, November 20, 2017.
73. **Shim JK.** Synergies in motor and sensory systems. Action Club, Penn State University, October 4, 2019.
74. **Shim JK.** Sensory contribution to motor outputs. Seoul National University, November 3, 2020.
75. **Shim JK.** Binding The Gap Between Biomechanics and Other Disciplines in Human Movement Science? It's Necessity. Korean Society of Sport Biomechanics, December 18-19, 2020.
76. **Shim JK.** Neuromechanics. Kyung Hee University Hospital, December 23, 2020.
77. **Shim JK,** Burnet J. Amputee locomotion: previous and current research. University of Maryland Baltimore, April 24, 2021.
78. **Shim JK,** Role of sensory feedback in human movements. KAIST, Korea, April 24, 2021.

79. **Shim JK**, Neuromechanics: Convergence of Multiple Fields for Mechanistic Approaches and Effective Applications. Sungkyunkwan University, Korea, December 10, 2021.
80. **Shim JK**, Role of sensory feedback in movement effectiveness and synergy. Kang Won University, Korea, December 15, 2021.

- II.E.3. Refereed Presentations
- II.E.4. Refereed Workshop Papers
- II.E.5. Refereed Abstracts

2000

1. Doan, BK, Bolt LR, Popper EM, Rogers RA, **Shim JK**, Y-H Kwon, Newton RU and Kraemer WJ. Influence of Lower-body compression Garments on Athletic Performance. *Proceeding of Midwestern Graduate Student Symposium in Biomechanics*, Illinois State University, March 31-April 1, 2000.
2. Rogers RA, Newton RU, McEvoy KP, Popper EM, Doan BK, **Shim JK**, Bolt LR, Volek JS, and Kraemer WJ. The effect of supplemental isolated weight training exercises on upper arm size and upper body strength. *23rd NSCA National Conference*, Orlando, June 21-24, *Journal of Strength and Conditioning Research*, 14(3): 369, 2000.
3. Popper EM, Newton RU, K.P. McEvoy, Rogers RA, Doan BK, **Shim JK**, Volek JS, and Kraemer WJ. Super slow versus traditional resistance training: the effects on muscle size and strength. *23rd NSCA National Conference*, Orlando, June 21-24, *Journal of Strength and Conditioning Research*, 14(3): 368, 2000.
4. Newton RU, Rogers RA, Popper EM, Robertson KM, **Shim JK**, Doan BK, and Kraemer WJ. Optimal Load For Maximal Power Output During Squat Jump Training. *2nd International Conference on Weightlifting and Strength Training*, Editor C.P. Lee. Ipoh, Malaysia, November, 2000. pp.98.
5. Newton RU, Lindley S, Bolt LR, Doan BK, **Shim JK**, Laurent T, Rogers RA, Popper EM, and Kraemer WJ. Joint torque and muscle activation during forced repetitions. *2nd International Conference on Weightlifting and Strength Training*, Editor C.P. Lee. Ipoh, Malaysia, November, 2000. pp. 96.
6. Newton RU, Doan BK, **Shim JK**, Laurent T, Robertson KM, Horn B. Rogers RA, Popper EM, and Kraemer WJ. Muscle activation during wrist flexion and extension against a gyrosopic resistance. *2nd International Conference on Weightlifting and Strength Training*, Editor C.P. Lee. Ipoh, Malaysia, November, 2000. pp. 99.
7. **Shim JK** and Doan BK, Influence of lower-body compression garments on athletic performance. *Ball State Graduate Symposium*, March, 2000.

2001

8. **Shim JK**, Doan BK, Newton RU, Kwon Y-H. Effect of Lower-Body Compression Garment on Warm-up Time and Jump Performance, *Proceedings*

- (II): 2001 *Seoul International Sport Science Congress*, Seoul, Korea, August 23-25, pp. 305-309, 2001.
9. Kwon Y-H, Bolt LR, **Shim JK**. Mechanics of Pole Running in Subjects with Chronic Knee Problems, Proceedings (II): 2001 *Seoul International Sport Science Congress*, Seoul, Korea, August 23-25, pp. 290-295, 2001.
 10. **Shim JK**, Doan BK, Popper EM, Rogers RA, Bolt LR, Robertson KM, Kwon Y-H, Newton RU, Karemer WK. The Influence of Lower-Body Compression Garments on Athletic Performance. *48th ACSM Annual Meeting*, Baltimore, Maryland, May 30-June 2, *Journal Medicine & Science in Sports & Exercise*, 33(5): 1339, 2001
 11. Doan BK, Newton RU, Rogers RA, Robertson KM, **Shim JK**, Popper EM, Horn B, Kraemer WJ. Diagnosis of Vertical Countermovement Jump Performance in NCAA Volleyball Players. *48th ACSM Annual Meeting*, Baltimore, Maryland, May 30- June2, *Journal Medicine & Science in Sports & Exercise*, 33(5): 1339, 2001.
 12. Robertson KM, Newton RU, Doan NK, Rogers RA, **Shim JK**, Popper EM, Horn B, Hakkinen K, Kraemer WJ. Effect of in-season strength and power training on squat jump performance in NCAA women volleyball players. *48th ACSM Annual Meeting*, Baltimore, Maryland, May 30-June2, *Journal Medicine & Science in Sports & Exercise*, 33(5): 764, 2001.
 13. **Shim JK**, Kwon Y-H, Newton RU. Biomechanical Analysis of Meridian Elyte Shoe During Walking and Running. *Proceedings of Midwestern Graduate Student Symposium in Biomechanics*, University of Wisconsin, March 23-24, 2001.

2002

14. Dugan EL, Robertson KM, Hasson CJ, **Shim JK**, Doan BK, Hakkinen K, Karemer WK, and Newton RU. Strength factors related to maximal power output during jumping squats with an optimal load. *American College of Sports Medicine Annual Meeting*, 2002. *Medicine and Science in Sports and Exercise*, 34(5) Supplement: S34. St. Louis, May 2002.
15. Robertson KM, Newton RU, Dugan EL, C.J. Hasson CJ, Doan BK, **Shim JK**, Hakkinen K, and Kraemer WK. 3-week unloading cycle in-season increases vertical jump of collegiate women volleyball players. *National Strength and Conditioning Association Conference*, Las Vegas, NV, July, 2002.
16. Robertson KM, Newton RU, Dugan EL, C.J. Hasson CJ, Doan BK, **Shim JK**, Hakkinen K, and Karraemer WK. 4-week strength cycle in-season increases vertical jump of collegiate women volleyball players. *American College of Sports Medicine Annual Meeting. Medicine and Science in Sports and Exercise*, 34(5) Supplement: S200. St. Louis, May, 2002.
17. Hasson CJ, Doan BK, Robertson KM, Dugan EL, **Shim JK**, Newton RU, and Karemer WK. Relationship of 1RM squat and vertical jump performance in NCAA male volleyball players. *American College of Sports Medicine Annual Meeting, Medicine and Science in Sports and Exercise*, 34(5) Supplement: S33. St. Louis, May, 2002.

2003

18. **Shim JK**, Latash ML, Zatsiorsky VM. Force Variability and null spaces in hierarchical organization of static human prehension. *American Society of Biomechanics Annual Meeting*, Toledo, Ohio. September 25-27, 2003.
19. Zatsiorsky VM, Latash ML, Gregory RW, Gao F, Pataky TC, **Shim JK**. Control of prehension. *Progress in Motor Control-IV: Motor Control and Learning over the Lifespan*. Caen, France. August 20-23, 2003.
20. Latash ML, **Shim JK**, Gao F, and Zatsiorsky VM. Two Control processes associated with multi-digit prehension. *10th Biennial Conference of the International Graphonomics Society*. August 6-8, 2003.
21. **Shim JK**, Latash ML, Zatsiorsky VM. Superposition and hierarchical organization of static prehension in human. *International Society of Biomechanics Congress 2003*, Dunedin, New Zealand. July 6-11, 2003. [Young Investigator Award Finalist]
22. **Shim JK**, Latash ML, Zatsiorsky VM. The static human prehension: Synergy and principle of superposition. *Midwest Graduate Biomechanics Symposium*, Toledo, Ohio, March 4-5, 2003.
23. **Shim JK**, Latash ML, Zatsiorsky VM. The static human prehension: Synergy and principle of superposition. *Graduate Exhibition*, Penn State University, March 1, 2003.

2004

24. **Shim JK**, Latash ML, Zatsiorsky VM. Finger coordination during moment production on a mechanically fixed object. *American Society of Biomechanics Annual Meeting*, Portland, OR. September 8-11, 2004.

2005

25. **Shim JK**, Latash ML, and Zatsiorsky VM. Principle of superposition in human prehension: independent controls of grasping and rotational equilibrium. *Progress in Motor Control V*. State College, Pennsylvania. August 17-20, 2005.
26. **Shim JK**, Latash ML, and Zatsiorsky VM. Prehension synergies: trial-to-trial variability and principle of superposition during static prehension in three dimensions. *International/American Society of Biomechanics Congress 2005*. Cleveland, Ohio. August 1-5, 2005.
27. Kim S, **Shim JK**, Zatsiorsky VM, and Mark L Latash. Preparation to a predictable perturbation during multi-finger force production. *International/American Society of Biomechanics Congress 2005*. Cleveland, Ohio. August 1-5, 2005.
28. Woo BH, Kim SW, Zatsiorsky VM, Latash ML, and **Shim JK**. Enslaving effects of finger movement on pressing forces of other fingers. *International/American Society of Biomechanics Congress 2005*. Cleveland, Ohio. August 1-5, 2005.

29. Latash ML, Olafsdottir H, **Shim JK**, Zatsiorsky VM. Synergies that stabilize and destabilize action. *Motor Control Conference*. Sofia, Bulgaria. September 21-25, 2005.

2006

30. ^æ **Shim JK**, [§]Park J. Multi-digit maximum voluntary torque production on a circular object. *5th World Congress of Biomechanics*, Munich, Germany, July 29-August 4, 2006.
31. ^æ [§]Park J, **Shim JK**, Principle superposition during a static prehension of a circular object. *5th World Congress of Biomechanics*, Munich, Germany, July 29-August 4, 2006.
32. ^æ **Shim JK**, [§]Park J, [§]Huang J. Ergonomics and neuromechanics of circular object manipulation. *2006 International Sport Science Congress*, Seoul, Korea, August 21-23, 2006.
33. ^æ [§]Hooke AW, [§]Huang J, **Shim JK**. Effects of moment of inertia on digit forces during oscillatory angular movements of a circular handheld object. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
34. ^æ [§]Huang J, Latash ML, Zatsiorsky VM, **Shim JK**. Multi-Digit manipulation of a circular object. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
35. ^æ [§]Park J, Latash ML, Zatsiorsky VM, **Shim JK**. Adjustments of prehension synergies in response to self-triggered and experimenter-triggered load and torque perturbations. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
36. ^æ [§]Hsu J, Oliveira MA, Clark JE, **Shim JK**. Hand digit control in children: Age-related changes and flexion-extension differences in digit interaction during MVC tasks. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
37. ^æ Oliveira MA, Loss J, Petersen R, Clark JE, **Shim JK**. Kinetic redundancy on hand digit control in children with DCD. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
38. ^æ [§]Qi Li, [§]Hsu J, Oliveira MA, **Shim JK**. Digit inter-dependency during oscillatory flexion-extension isometric force production task. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
39. Latash ML, Zatsiorsky VM, **Shim JK**, Kim S. Kinetic finger inter-dependence in a kinematic task. *American Society of Biomechanics Annual Meeting*, Blacksburg, VA, August 6-9, 2006.
40. ^æ **Shim JK**, Oliveira MA, Woo M, [§]Park J, [§]Hsu J, [§]Burney T, Clark JE. Development of hand digit independency from children to elderly people. *NASPSA 2006 Conference*, Denver CO, June 1-3, 2006.
41. ^æ Oliveira MA, Hsu J, Jane E. Clark, **Shim JK**. Developmental changes of hand digit interaction in children. *NASPSA 2006 Conference*, Denver CO, June 1-3, 2006.
42. ^æ [§]Hsu J, Oliveira MA, Clark JE, **Shim JK**. Developmental changes of multi-digit synergy in children. *NASPSA 2006 Conference*, Denver CO, June 1-3, 2006.

43. ^æ §Lieu J and **Shim JK**. Finger enslaving during voluntary and involuntary finger movements. *NASPSPA 2006 Conference*, Denver CO, June 1-3, 2006.
44. ^æ §Huang J, §Park J, and **Shim JK**. Force component dependency and safety margin during maximum torque production on a circular object. *NASPSPA 2006 Conference*, Denver CO, June 1-3, 2006.
45. ^æ §Park J, §Huang J, **Shim JK**. Decoupled control in a circular object manipulation. *NASPSPA 2006 Conference*, Denver CO, June 1-3, 2006. *NASPSPA 2006 Conference*, Denver CO, June 1-3, 2006.

2007

46. ^æ **Shim JK**, §Karol S, §Hsu J, Oliveira MA. Motor overflow in multi-finger force space. *Progress in Motor Control VI*, Santos, Brazil, August 9-12, 2007.
47. ^æ §Rodrigues AM, **Shim JK**, Oliveira MA. Finger torque strength and control in patients with Parkinson's disease. *Progress in Motor Control VI*, Santos, Brazil, August 9-12, 2007.
48. ^æ §Hsu J, Oliveira MA, §Park J, **Shim JK**. Aging-related changes of finger force indices during isometric finger extension tasks. *Progress in Motor Control VI*, Santos, Brazil, August 9-12, 2007.
49. ^æ Oliveira MA, §Hsu J, Dickey G. Clark JE, **Shim JK**. Hand finger coordination and control in piano players. *Progress in Motor Control VI*, Santos, Brazil, August 9-12, 2007.
50. ^æ §Hooke AW and **Shim JK**. Handwriting Control: A Kinetic Perspective. *Progress in Motor Control VI*, Santos, Brazil, August 9-12, 2007.
51. ^æ §Hooke, AW, **Shim JK**. Birth of the super pen: an innovative approach to studying handwriting kinetics. *American Society of Biomechanics Annual Meeting*, Stanford, CA, August 22-25, 2007.
52. ^æ §Park, J, §Hooke, §AW, and **Shim JK**. Solutions of a redundant motor task with sub-task conflict. *American Society of Biomechanics Annual Meeting*, Stanford, CA, August 22-25, 2007.
53. ^æ §Hsu J, §Karol S, **Shim JK** Effect of neuromuscular resistance training on multi-finger synergies. *American Society of Biomechanics Annual Meeting*, Stanford, CA, August 22-25, 2007.
54. ^æ **Shim JK**, §Karol S, §Hsu J, Oliveira M. Motor overflow in multi-finger force space during maximum voluntary force production of children. *International Society of Biomechanics Congress*, Taipei, Taiwan, July 1-5, 2007. [Young Investigator Award Finalist]
55. ^æ §Park J, §Li Q, **Shim JK**. Bridging a gap between human motor control and robotic control: solution of redundant motor tasks with sub-task conflict. *International Society of Biomechanics Congress*, Taipei, Taiwan, July 1-5, 2007.
56. ^æ §Hsu J, Oliveira MA, Clark JE, **Shim JK**. Children with DCD have deficits in finger independency. *International Society of Biomechanics Congress*, Taipei, Taiwan, July 1-5, 2007.
57. ^æ §Karol S, **Shim JK**. Analysis of the structure of finger force variability in an isometric task using uncontrolled manifold hypothesis. *International Society of Biomechanics Congress*, Taipei, Taiwan, July 1-5, 2007.

58. ^æ **Shim JK**, [§]Karol S, [§]Hsu, J, Oliveira MA. Multi-finger force overflow between hands in children. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
59. ^æ [§]Karol S, **Shim JK**. Uncontrolled manifold analysis of multi-finger pressing with different numbers of fingers. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
60. ^æ [§]Hsu J, **Shim JK**, Clark JE, Oliveira MA. Multi-digit kinetic redundancy in children with DCD. *Northeast American Society of Biomechanics Annual Meeting*, College Park, MD, March 30-31, 2007.
61. ^æ [§]Huang J, [§]Li Q, and **Shim JK**. A study of digit synergy in primary motor cortex using magnetoencephalography. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
62. ^æ [§]Park J, **Shim JK**. The solution of a redundant motor task with sub-task conflict in human hand multi-fingers pressing task. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
63. ^æ [§]Li Q, Oliveira MA, **Shim JK**. Finger force enslaving and sharing during maximum voluntary force production and oscillatory finger force production tasks. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
64. ^æ [§]Rodrigues AM, [§]Loss JF, **Shim JK**, Oliveira MA. Strength and isometric torque control in Parkinson's disease. *Northeast American Society of Biomechanics Conference 2007*, College Park, MD, March 30-31, 2007.
65. ^æ Oliveira MA, [§]Hsu J, [§]Park J, Clark JE, and **Shim JK**. Multi-digit control in children with DCD. *7th International Conference on Children with Developmental Coordination Disorder*, Melbourne, Australia, February 2007.
66. ^æ Oliveira MA, [§]Hsu J, [§]Park J, [§]Huang J, Clark JE, **Shim JK**. Development of multi-digit synergy and digit independency. *8th Motor Control and Human Skill Conference*, Freemantle, Australia, February 2007.

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67. ^æ **Shim JK**, [§]Hsu J, [§]Karol S, [§]Kim YS, Hurley B. Training specific adaptation of multi-finger coordination. *International Society of Biomechanics in Sports (ISBS) Conference*, Seoul, Korea. July 14-18, 2008.
68. ^æ [§]Park J, **Shim JK**. The effects of mechanical constraints on multi-finger prehension. *International Society of Biomechanics in Sports (ISBS) Conference*, Seoul, Korea. July 14-18, 2008.
69. ^æ [§]Huang J, **Shim JK**. MEG correlates of digit synergy during precision force control task. *Society for Neuroscience Meeting 2009*. Nov. 15 -19, 2008.

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70. ^æ [§]Kim YS, Cho KK, **Shim JK**. Effect of training frequency on lumbar extension strength in hernia-operated. *International Society of Biomechanics Congress*, Cape Town, South Africa, July 5-8, 2009.

71. ^æ §Kim CK, Lee DY, §Huang J, §Park J, §Kim YS, **Shim JK**. Cervial spinal cord injury patients show involuntary force production in paralyzed fingers during other finger force production tasks. *International Society of Biomechanics Congress*, Cape Town, South Africa, July 5-8, 2009.
72. ^æ **Shim JK**, §Hooke AW, §Karol S, §Park J. Handwriting mechanics: 3-D kinetic synergies in circle drawing movements. *International Society of Biomechanics Congress*, Cape Town, South Africa, July 5-8, 2009.
73. ^æ §Hsu J, §Halayko DW, **Shim JK**. The relationship between hand dexterity – An MRI and behavioral investigation. *Progress in Motor Control*, Marseille, France, July 23-25, 2009.
74. ^æ **Shim JK**, §Hooke AW, §Karol S, §Park J. 3D kinetic synergies in handwriting. *American Society of Biomechanics Annual Meeting*, State College, Pennsylvania, August 26-29, 2009.
75. ^æ §Huang J, **Shim JK**. Safety margin in ramp torque production task with a circular object. *American Society of Biomechanics Annual Meeting*, State College, Pennsylvania, August 26-29, 2009.
76. ^æ §Karol S, **Shim JK**. Effect of target size on whole body inter joint synergies: an uncontrolled manifold analysis. *American Society of Biomechanics Annual Meeting*, State College, Pennsylvania, August 26-29, 2009.
77. ^æ §Hsu J, §Halayko DW, §Kim YS, **Shim JK**. The relationship between hand dexterity and hand muscle structure. *American Society of Biomechanics Annual Meeting*, State College, Pennsylvania, August 26-29, 2009.
78. ^æ §Park J, §Kim YS, **Shim JK**. Prehension synergy: the changes in synergistic digit actions under systematically manipulated conditions of task constraints. *American Society of Biomechanics Annual Meeting*, State College, Pennsylvania, August 26-29, 2009.

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79. ^æ §Park J, Zatsiorsky VM, §Kim YS, Kim YH, **Shim JK**. Prehension synergy: principle of superposition during multi-finger torque production on mechanically fixed- and free-objects. *American Society of Biomechanics Annual Meeting*. Providence, Rhode Island, August 18-21, 2010.
80. ^æ §Karol S, **Shim JK**. Multi-finger synergies during isometric force production task in index finger amputees. *American Society of Biomechanics Annual Meeting*. Providence, Rhode Island, August 18-21, 2010.
81. ^æ **Shim JK**, §Huang J, §Karol S, §Kim YS, Yoon BC. Adaptations of multi-finger interactions through fatigue exercise. *American Society of Biomechanics Annual Meeting*. Providence, Rhode Island, August 18-21, 2010.
82. ^æ §Park J, Zatsiorsky VM, Kim YS, Kim YH, **Shim JK**. Prehension synergy: principle of superposition during multi-finger torque production on mechanically fixed- and free-object. *American Society of Biomechanics Annual Meeting*. Providence, RI August 18-21, 2010
83. Park J, Kim YS, Baum BS, Kim YH, **Shim JK**. Prehension synergy: use of mechanical advantage during multi-finger torque production on mechanically fixed- and free object., *The 26th Southern Biomedical Engineering Conference*

2010, College Park, Maryland, April 30 – May 2, 2010, *IFMBE Proceedings*. 32: 368-371

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84. ^æ§Baum BS, §Borjjan R, §Linberg A, §Koh K, **Shim JK**. Optimization and validation of a biomechanical model for running-specific prostheses. *Gait and Clinical Movement Analysis Society 2011*, Bethesda, Maryland, April 26-29, 2011.
85. ^æ**Shim JK**. Motor synergies in multi-digit actions. *International Society of Biomechanics Congress*, Brussels, Belgium, July 3-7, 2011.
86. ^æ§Karol S, §Kim YS, §Huang J, Yoon BC, Kim YS, Pyeon HY, Kim YH, **Shim JK**. Effect of cutaneous feedback on maximum voluntary force production in a multi-finger pressing task. *International Society of Biomechanics Congress*, Brussels, Belgium, July 3-7, 2011
87. Kim YS, Pyeon HY, Hwang HJ, Son J, Shim JK, Yoon BC. A Neuromuscular Strategy to Prevent Spinal Torsion: Backward Perturbation Alters Asymmetry of Lateral Abdominal Muscles Thickness into Symmetry. *International Biomechanics Society Congress*. Brussels, Belgium. July 3-7, 2011.
88. ^æ§Kim MJ, Whittall J, Clark JE, **Shim JK**. Multi-segment synergies for stabilization of whole-body center of mass in stepping movements: Uncontrolled Manifold analysis. *Progress in Motor Control VIII*, Cincinnati, Ohio, July 20-23, 2011.
89. ^æ§Karol S, §Kim YS, §Huang J, Yoon BC, Kim YS, Pyeon HY, Kim YH, **Shim JK**. Effect of cutaneous feedback on force synergies in a multi-finger pressing task. *34th Annual Meeting of Human Factors and Ergonomics Society*, Las Vegas, Nevada, September 19-23, 2011.

2012

90. **Shim JK**. Tactile feedback plays a critical role in maximum force production. *Symposium on Neuromechanics: Perception and Action*, Yonjin, Korea, January 04, 2012.
91. ^æ§Karol S, **Shim JK**. Multi-finger synergies during isometric force production task in index finger amputees. *Brussels Hand/Upper Limb International Symposium: Advances in prosthetics and surgical reconstructions for hand/upper extremity amputees*, Brussels, Belgium, January 27-28, 2012.
92. ^æ§Karol S, Kim YS, Huang J, Yoon BC, Kim YS, Pyeon HY, Kim YH, **Shim JK**. Effect of distal anesthesia on multi-finger synergies during a sub-maximal constant force production task. *Brussels Hand/Upper Limb International Symposium: Advances in prosthetics and surgical reconstructions for hand/upper extremity amputees*, Brussels, Belgium, January 27-28, 2012.
93. ^æ§Baum BS, §Tian A, §Schultz MP, §Hobara H, §Linberg A, Wolf E, **Shim JK**. Ground reaction force and temporal-spatial adaptations to running velocity when wearing running-specific prostheses. *American Society of Biomechanics Annual Meeting*, Gainesville, FL, August 15-18, 2012.

94. ^æ §Baum BS, §Schultz MP, §Tian A, §Hobara H, §Kwon HJ, **Shim JK**. Determining the inertial properties of running-specific prostheses. *American Society of Biomechanics Annual Meeting*, Gainesville, FL, August 15-18, 2012.
95. ^æ §Hobara H, §Baum BS, **Shim JK**. Spring-mass characteristics during overground running in amputees using running specific prostheses. *American Society of Biomechanics Annual Meeting*, Gainesville, FL, August 15-18, 2012.

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96. ^æ §Auyang A, §Chu E, §Kregling A, §Chen Q, Collier K, **Shim JK**. Effects of variable stiffness prosthesis on ankle kinematics during load carriage. *International Society for Prosthetics & Orthotics*, Hyderabad, India, February 4-7, 2013.
97. ^æ §Alissa K, §Auyang A, §Chu E, §Chen Q, Collier K, **Shim JK**. Secondary posterior keel in carbon fiber prosthesis changes the foot-ground kinetic interactions during walking. *International Society for Prosthetics & Orthotics*, Hyderabad, India, February 4-7, 2013.
98. ^æ §Koh K, §Kwon HJ, **Shim JK**. Influence of intra-auditory sensory integration in isometric finger force production. *Progress in Motor Control*, Montreal, Canada. July 13-16, 2013.
99. ^æ §Kim MJ, **Shim JK**, S Kim. Developmental changes of whole-body synergy in squat-to-stand movement. *Progress in Motor Control*, Montreal, Canada. July 13-16, 2013.
100. ^æ §Kiernan D, §Koh K, §Kwon HJ, Miller RH, **Shim JK**. Sensitivity of vertical ground reaction force parameters in normal and amputee running to filter design. *American Society of Biomechanics Annual Meeting*, Omaha, Nebraska, USA. September 4-7, 2013.
101. ^æ §Hobara H, §Baum B, §Kwon HJ, **Shim JK**. Vertical loading rate using running-specific prostheses in transtibial amputees. *International Society of Biomechanics Congress*, Natal, Brazil. August 4-9, 2013.
102. ^æ §Kwon HJ, §Kyung K, §Hobara H, §Chu E, **Shim JK**. Effect of running shoe heel height on COP kinematics. *International Society of Biomechanics Congress*, Natal, Brazil. August 4-9, 2013.
103. ^æ **Shim JK**, Choi CS, Shin IS. Effect of the hip position on the postural stability in Juchumseogi. *Korean Alliance for Health, Physical Education, Recreation, and Health*, Seoul, Korea. October 18-20, 2013.
104. ^æ Park J, Han DW, **Shim JK**. Effect of resistance training on grasping control in humans. *7th World Congress of Biomechanics*. Boston, Massachusetts, July 6-11, 2014.

2015

105. ^æ Park JB, Ko J, Cooney D, Holcomb M, **Shim JK**. Effect of contact surface properties on finger force production in humans. *Rocky Mountain American Society of Biomechanics*, Estes Park, Colorado, USA. April 17-18, 2015.

106. **Shim JK.** Importance of Team Science in Human Movement Science. *Korean Alliance for Health, Physical Education, Recreation, and Dance (KAHPERD)*. Seoul, Korea, June 18, 2015.
107. ^æ §Baum BS, § Hobara H, **Shim JK.** Joint power adaptations running speed in individuals with amputations using running-specific prostheses. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
108. ^æ §Chu E, §Park YS, Lim YT, §Koh K, Kim JM, §Kwon HJ, Miller RH, **Shim JK.** Association of spinal deformity and pelvic tilt with gait asymmetry in adolescent idiopathic scoliosis patients: ground reaction force investigation. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
109. ^æ §Kwon HJ, §Koh K, § Hobara H, §Chu E, §Kim SY, Miller RH, **Shim JK.** The effect of shoe heel elevation angle on strike pattern. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
110. ^æ §Koh K, §Kwon HJ, Miller RH, **Shim JK.** Intra-auditory integration in a constant force production task. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
111. ^æ §Baum BS, § Hobara H, **Shim JK.** Running-specific prosthesis modeling effects on joint moments during overground running. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
112. ^æ §Kiernan D, Shim JK, Miller RH. Vertical ground reaction force magnitudes and rates not positively correlated with prospective running injury. *American Society of Biomechanics Annual Meeting*. Columbus, Ohio, USA. August 5-8, 2015.
113. ^æ Park J, §Ko JH, Cooney D, Holcomb M, **Shim JK.** Effect of contact surface properties on finger force production in humans. *5th annual regional meeting of the Rocky Mountain American Society of Biomechanics*. Estes Park, Colorado, April 17-18, 2015

2016

114. ^æ §Kiernan D, Krupenevich R, **Shim JK,** Miller, RH. Baseline correlates of running Injury: Hip hypermobility but not lower limb strength relates to future running injury. *American College of Sports Medicine*. Boston, MA, USA. May 31-June 4, 2016
115. ^æ §Chu E. §Koh K, Miller RH, **Shim JK.** Effects of neuromuscular fatigue on leg stiffness and joint stiffness during single-leg hopping. *American Society of Biomechanics Annual Meeting*, Raleigh, North Carolina, USA. August 2-5, 2016.
116. ^æ §Bell, E.M, §Figueiredo P, **Shim JK,** and Miller R Limb Strength and Limb Initiation During a Step Forward to Upright Standing Task. *American Society of Biomechanics Annual Meeting*, August 2-5, 2016. Raleigh, NC, USA.
117. ^æ §Karimpour R, Krupenevich RL, Miller RH, **Shim JK.** Evaluation of gait asymmetry using force plates vs. accelerometer. *American Society of Biomechanics Annual Meeting*, Raleigh, North Carolina, August 2-5, 2016
118. ^æ §Koh K, §Kwon HJ, §Park YS, Miller HR, **Shim JK,** The role of uncertainty in auditory-motor control on intra-auditory integration, *American Society of Biomechanics Annual Meeting*, Raleigh, NC. 2016.

119. ^æ §Kwon HJ, §Koh K, §Park YS, Miller H.R, **Shim JK**, Effects of secondary constraints in finger force-production tasks, *American Society of Biomechanics Annual Meeting*, Raleigh, NC. 2016.
120. ^æ Park DW, §Koh K, Lee SN, §Park YS, **Shim JK**, Postural stability in professional dancers, *International Conference of Korean society of sport biomechanics*, Busan, South Korea. 2016.

2017

121. ^æ §Bell, EM, Jette S., Miller, RH, **Shim, J.K.** A Mixed-Methods Examination of Limitations to Physical Activity as Reported by Individuals with Lower Extremity Amputations. *American Orthotic and Prosthetic Association World Congress*, Las Vegas, NV September 6-9, 2017.
122. ^æ §Bell, EM, §Koh K, Miller, RH, **Shim JK**, Muscular Fatigue Influences Motor Synergies During Push-Ups. *American Society of Biomechanics Annual Meeting*. August 8-11, 2017. Boulder CO, USA.
123. ^æ §Chu E, §Koh K, Miller RH, **Shim JK**. Effects of neuromuscular fatigue on leg stiffness and joint stiffness during single-leg hopping. *Public Health Research at Maryland*, College Park, Maryland, USA. April 3, 2017
124. ^æ §Karimpour R, Krupenevich RL, §Koh K, Miller RH, **Shim JK**. Evaluation of ground reaction force asymmetry in walking and running using force plates vs. accelerometer. *American Society of Biomechanics Annual Meeting*, Boulder, Colorado, USA. August 8-11, 2017.
125. Baum BS, Johnson H, Hobara H, **Shim JK**. Power and work generated throughout the running-specific prosthesis keel during running after amputation. *American Society of Biomechanics Annual Meeting*, Boulder, Colorado, USA, August 8-11, 2017.

2018

126. Bell, EM, Miller RH, Kwon HJ, Koh K, and Shim JK. Neural and Mechanical Adaptations to Muscular Fatigue over Repetitive Push-Ups. American Society of Biomechanics Annual East Coast Meeting. Reading, PA, USA. April 12 & 13, 2019
127. Bell EM, Miller RH, Kwon HJ, Koh K, and Shim JK. Neural and Mechanical Adaptations to Muscular Fatigue over Repetitive Push-Ups. Graduate Research Day. College Park, MD, USA. April 3rd, 2019
128. Bell EM, Burnett J and Shim JK. Importance of Underlying Aspects of Functionality as Reported by Individuals with Lower Extremity Amputations. Public Health Research Day. College Park, MD, USA. April 2nd, 2019
129. Bell EM, Chu E, Honarvar S, Koh K, Miller RH, and Shim JK. Adaptation of Lower Limb Joint Work in Single Leg Hopping After Unilateral Ankle Fatigue. American Society of Biomechanics Annual Meeting, Rochester, MN, USA. August 8-11, 2018

130. Caminita M & Shim JK. Evaluation of Sensory Manipulation via Cooling on Motor Performance. Public Health Research @ Maryland, University of Maryland College Park, MD, USA. April 3, 2018
131. Burnett J., Kim YW, Shim JK, Miller RH, and Kwon HJ. Inaccuracies in whole body mass estimates results in error propagation within measures of jump height performance. Public Health Research Day, College Park, Maryland, USA. April 1, 2018

2019

132. Bell EM, Miller RH, Kwon HJ, Koh K, and Shim JK. Neural and Mechanical Adaptations to Muscular Fatigue over Repetitive Push-Ups. American Society of Biomechanics Annual East Coast Meeting. Reading, PA, USA. April 12 -13, 2019
133. Caminita M., Garcia G.L., Kwon H.J., Miller R.H., Shim J.K. Reduction of cutaneous sensory feedback of the soles of the feet decreases maximum vertical squat jump height, International Society of Biomechanics/American Society of Biomechanics Annual Meeting, Calgary, Canada. 2019.
134. Caminita M., Garcia G.L., Kwon H.J., Miller R.H., Shim J.K. Reduction of cutaneous sensory feedback of the soles of the feet decreases maximum vertical squat jump height, Seoul International Sports Conference, Seoul, South Korea. 2019.
135. Caminita M., Garcia G.L., Kwon H.J., Miller R.H., Shim J.K. Reduction of cutaneous sensory feedback of the soles of the feet decreases maximum vertical squat jump height, Public Health Research Day Symposium at the University of Maryland, College Park, Maryland. 2019.
136. Honarvar S., Kwon H.J., Caminita M., Miller, R.H., Diaz-Mercado, Y., Hahn, J.O., Shim, J.K. How do we work together? The role of haptic feedback exchanged between people. Public Health Research Day Symposium at the University of Maryland, College Park, Maryland. 2019.

2020

137. Garcia G. L., Caminita M., Hunter J. G., Miller R. H., Kwon H. J., Shim J.K. *Dorsiflexion shoes affect landing mechanics related to lower extremity injury risk.* 44th Meeting of the American Society of Biomechanics, Atlanta, GA. 2020

2022

138. Honarvar S., Hahn J.O., Kiemel T., Kwon, H.J., Diaz-Mercado, Y Modeling Human-Human Collaboration: A Connection Between Inter-Personal Motor Synergy and Consensus Algorithms. The 2022 American Control Conference (ACC), Atlanta, GA. 2022.

2023

139. Kim J, Kim MJ, Yamagata M, Park J, Shim JK. Changes in multi-finger coordination and prefrontal oxygenation during prolonged cyclic force production in adults with Developmental Coordination Disorder. *Progress in Motor Control XIV*. Rome, Italy. September 27-30, 2023.
140. Song J, Ambike S, Shim JK, Park J. Synergistic organization of control variables in control hierarchies during torque production of multi-digit prehension. *Progress in Motor Control XIV*. Rome, Italy. September 27-30, 2023.
141. Snyder S.J., Chu E., Heo Y.J., Miller R.H., and Shim J.K. Prediction of Medial Knee Joint Contact Force During Walking and Running using Custom Instrumented Insole and Deep Learning in Young Female Individuals. The 47th Annual Meeting of the American Society of Biomechanics. August 8-11, 2023.
142. Snyder S.J., Oh S., Bell E.M., Ehsani H., Kambhamettu A., Miller R.H., Bera A., Shim J.K. Walking with Different Emotions Significantly Influences Knee Adduction Moment. The 2023 American College of Sports Medicine Annual Meeting. May 20-June 2, 2023.
143. Zhou Y., Lindsey, B., Snyder, S., Reider, L., Bell E., Vignos, M., Bar-Kochba E., Mousavi., A., Parreira, J., Hanley, C., Shim, J.K., Hahn J.O. Sampling Rate Requirement for Accurate Calculation of Heart Rate and Its Variability Based on the Electrocardiogram. IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI). October 15-18, 2023.
144. Kambhamettu, A. R., Snyder S.J., Chu E., Heo, Y.J, Shim, J.K. Classifying Walking and Running Utilizing Custom Instrumented Insoles and Machine Learning. IEEE-EMBS International Conference on Body Sensor Networks: Sensor and Systems for Digital Health. October 9-11, 2023.
145. Lindsey, B., Hanley, C., Reider, L., Bar-Kochba, E., Vignos., M, Snyder, S.J., Zhou, Y., Bell, E., Shim, J.K., Hahn J.O., Accuracy of Military-Grade Wearable ECG monitor Compared to Reference and Commercial Monitors. Sixth International Congress on Soldiers' Physical Performance (ICSPP). September 12-14, 2023.
146. Bell, E. M., Shim, J.K., and Miller, R.H. The Isolated Mechanical Effect of Walking in Late Pregnancy May Contribute to the Risk for Knee Osteoarthritis. *MARC ACSM 2023 Annual Meeting*. Nov. 3-4, 2023. Lancaster, PA, USA.
147. Bell, E. M., Snyder, S.J., Shim, J.K., and Miller, R.H. Three-Dimensional Knee Joint Moments Over a Range of Walking Speeds are Greater in Pregnant vs. Non-pregnant Individuals. *ACSM 2023 Annual Meeting and World Congress*. Denver, CO, USA. May 30 - June 2, 2023.
148. Burnett JK, Miller RH, Shim JK. Individuals with Osseointegrated Prostheses Use an Intact Limb Reliance Strategy During Locomotion. American Orthotics and Prosthetics Association Annual Meeting. Indianapolis, Indiana, USA. September 6-9, 2023.

- II.E.6. Refereed Posters
- II.E.7. Refereed Panels
- II.E.8. Non-Refereed Presentations

- II.E.9. Non-Refereed Workshop Papers
- II.E.10. Non-Refereed Abstracts
- II.E.11. Non-Refereed Posters
- II.E.12. Non-Refereed Panels
- II.E.13. Symposia
- II.E.14. Workshops
- II.E.15. Colloquia
- II.E.16. Other

II.F. Professional and Extension Publications

- II.F.1. Reports and Non-Refereed Monographs
- II.F.2. Pre-print / Working Paper (*Not Work in Progress*)
- II.F.3. Legal Briefs
- II.F.4. Policy Briefs
- II.F.5. Refereed Extension Publications
- II.F.6. Non-Refereed Extension Publications
- II.F.7. Refereed Curricula
- II.F.8. Non-Refereed Curriculum
- II.F.9. Non-Refereed Journal Articles
- II.F.10. Other

II.G. Book Reviews, Notes, and Other Contributions

- II.G.1. Book Reviews

- 2005 Human Movement Neuroscience: Motor Control for Neuroscience and Physical Therapy, M.J.N McDonagh, Proposal review, *Oxford University Press*, 2005.

- II.G.2. Essays
- II.G.3. Notes
- II.G.4. Manuals
- II.G.5. Other

II.H. Completed Creative Works and Scholarship

- II.H.1. Datasets
- II.H.2. Constructed Projects, Original Plans and Designs
- II.H.3. Demonstrations
- II.H.4. Inventions
- II.H.5. Software and Applications
- II.H.6. Websites
- II.H.7. Exhibitions and Installations, Solo
- II.H.8. Exhibitions and Installations, Group
- II.H.9. Performing Arts
- II.H.10. Costume, Stage, Multimedia, and Theatrical Design
- II.H.11. Graphic Design
- II.H.12. Choreography

- II.H.13. Works of Creative Writing
- II.H.14. Film, Video, and Multimedia
- II.H.15. Vocal or Movement Design
- II.H.16. Citations and Reviews
- II.H.17. Other

II.I. Significant Works in Public Media

Specify the following: Title, Publication/Media Name, Contributors, Types (print, online, broadcast, video, documentary)

- II.I.1. Explanatory, Investigative, or Long-Form Journalism
- II.I.2. Other Significant Journalism
- II.I.3. Commentary / Analysis
- II.I.4. Interactive Online Database
- II.I.5. Radio Series
- II.I.6. TV / Radio Broadcast
- II.I.7. Ongoing Articles / Columns in Newspapers
- II.I.8. Ongoing Articles / Columns in Magazines
- II.I.9. Ongoing Articles / Columns in Newsletters
- II.I.10. Other

II.J. Works in Progress

Scholarly works in a publication status other than Published

II.K. Sponsored Research and Programs – Administered by the Office of Research Administration (ORA)

List source, title, amount awarded, time period and role (i.e., principal investigator or co-investigator) in reverse chronological order or its inverse. If there are co-investigators, please list them.

- II.K.1. Grants

Extramural Grants as PI

1. **Shim JK** (PI) Finger coordination during moment production on a mechanically fixed object; American Society of Biomechanics; **\$150; Funded.** 2003
2. **Shim JK** (PI) Superposition and hierarchical organization of static prehension in human; International Society of Biomechanics (ISB); **\$1,000; Funded.** 2003
3. **Shim JK** (PI), Development of golf-specific wrist strength training protocols; Recovery Science Inc.; Period: 1/1/07-1/31/07; **\$4,000; Funded.** 2007
4. **Shim JK** (PI), Strength training effects on dynamic strength of wrist; Recovery Science Inc.; Period: 2/1/07-1/31/08; **\$5,000; Funded.** 2007.
5. **Shim JK** (PI), Neuromuscular modeling of wrist; Recovery Science Inc.; **\$2,000; Funded.** 2007
6. **Shim JK** (PI), Fortifying Wrists: the crucial weakest links; Maryland Industrial Partnerships (MIPS); Period: 2/1/07-1/31/08; **\$300,000** (\$90,000 fund from MIPS + \$10,000 fund from Industrial Partner + \$200,000 in-kind support from Industrial Partner); **Funded.** 2007.

7. **Shim JK** (PI), 2007 North East American Society of Biomechanics (NEASB) Conference: Bridging the gap between biomechanics and motor control; conference organization grant; American Society of Biomechanics (ASB); Period: 3/30/07-3/31/07; **\$2,000; Funded.** 2007.
8. **Shim JK** (PI), 2007 North East American Society of Biomechanics (NEASB) Conference industrial sponsorship; industrial sponsorship; National Instruments Inc.; 3/30/07-3/31/07; **\$2,000; Funded.**
9. **Shim JK** (PI), 2007 North East American Society of Biomechanics (NEASB) Conference industrial sponsorship; industrial sponsorship; Innovative Sports Training Inc.; 3/30/07-3/31/07; **\$2,000; Funded.**
10. **Shim JK** (PI), 2007 North East American Society of Biomechanics (NEASB) Conference industrial sponsorship; industrial sponsorship; Biometrics Ltd.; 3/30/07-3/31/07; **\$500; Funded.**
11. **Shim JK** (PI), 2007 North East American Society of Biomechanics (NEASB) Conference industrial sponsorship; industrial sponsorship; Bertec Corp.; 3/30/07-3/31/07; **\$500; Funded.**
12. **Shim JK** (PI), Effects of neuromuscular strength training on motor performance; MIPS; Period: 2/1/08-1/31/09; **\$300,000** (\$90,000 fund from MIPS + \$12,000 fund from Industrial Partner + \$198,000 in-kind support from Industrial Partner); **Funded.** 2008.
13. **Shim JK** (PI), Effects of neuromuscular training of intrinsic hand muscles on hand dexterity in the elderly and development of a wearable training glove; MIPS; Period: 02/01/09-01/31/10; **\$2,082,800** (\$90,000 fund from MIPS + \$10,000 fund from Industrial Partner + \$1,982,800 in-kind support from Industrial Partner); **Funded.** 2009.
14. **Shim JK** (PI), Determining the marker configuration and modeling technique to optimize the biomechanical analysis of running-specific prosthesis; Deployment Related Medical Research Program (DRMRP) Clinical Trial Award, Department of Defense; Period: 07/01/09-06/31/11 (extended until 01/31/12); **\$201,293; Funded.** 2009.
15. **Shim JK** (PI), Handwriting mechanics; International Society of Biomechanics (Young Scientist Award); Period: 07/01/09-06/31/11; **\$5,000; Funded.** 2009.
16. **Shim JK** (PI), Thorough Baseline Assessment; Recovery Science LLC; Period: 10/09/09-10/08/10 (extended until 10/08/11); **\$15,000; Funded.** 2009.
17. **Shim JK** (PI), Development of hand and finger training exoskeleton, MIPS; **\$302,000** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$202,000 in-kind support from Industrial Partner); **Funded.** 2010; Period: 02/01/10-01/31/11.
18. **Shim JK** (PI), Neuromechanics Research, Under Armour; **\$50,000; Funded.** 2010.
19. **Shim JK** (PI), Adaptation of a new running shoe; Maryland Industrial Partnerships; **\$698,000** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$598,000 in-kind support from Industrial Partner); **Funded.** 2011; Period: 02/01/11-01/31/12.
20. **Shim JK** (PI), Translation of kinesiology in preventive medicine I; Maryland Industrial Partnerships; **\$514,100; Funded** (\$90,000 fund from MIPS, + \$10,000

- fund from Industrial Partner + \$414,100 in-kind support from Industrial Partner). 2011; 08/01/2011 - 07/31/2012.
21. **Shim JK** (PI), Evaluation of a versatile prosthesis; Freedom Innovation; **\$20,000; Funded**. 2011.
 22. **Shim JK** (PI), Biosensor validation through motion analysis; Zephyr Technology; **\$30,000; Funded**. 2011.
 23. **Shim JK** (PI), Adaptation of a new running shoe II; Maryland Industrial Partnerships; **\$206,400** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$106,400 in-kind support from Industrial Partner); **Funded**. 2012 Period: 02/01/12-01/31/13.
 24. **Shim JK** (PI), Translation of kinesiology in preventive medicine II; Maryland Industrial Partnerships; **\$300,000** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$200,000 in-kind support from Industrial Partner); **Funded**. 2012; 08/01/2012 - 07/31/2013.
 25. **Shim JK** (PI), Effect of the hip position in postural stability; Kukkiwon; **\$6,000; Funded**. 03/01/2013 – 05/01/2013.
 26. **Shim JK** (PI), A New Biomechanical Model to Examine Joint Control Adaptations during Running in Individuals with Lower Extremity Amputation; National Institute of Health (R03); **\$152,000; Funded**. 2012. Period: 07/01/12-06/31/14.
 27. **Shim JK** (PI), Systematic investigation into hand functions for the development of evidence-based hand rehabilitation for stroke patients; Ministry of Health and Welfare of Korea, **\$50,000; Funded**. 09/01/2013 - 02/31/2014.
 28. **Shim JK** (PI), Investigation into The Effects of Post-Exercise Recovery Drinks on Muscular Strength and Endurance; Maryland Industrial Partnerships; **\$321,611** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$221,611 in-kind support from Industrial Partner); **Funded**. 08/01/2013 - 07/31/2014.
 29. **Shim JK** (PI), The Effects of Post-Exercise Recovery Drinks on Concussion; Maryland Industrial Partnerships; **\$279,546** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner + \$179,546 in-kind support from Industrial Partner); **Funded**. 08/01/2014 - 07/31/2015.
 30. **Shim JK** (PI), Stroke wrist evaluation apparatus development, Ministry of Health and Welfare of Korea, **\$100,000; Funded**. 01/20/2015 - 12/20/2015.
 31. **Shim JK** (PI), Systematic investigation into hand functions for the development of evidence-based hand rehabilitation for stroke patients, National Research Foundation (NRF), **\$150,000; Funded**. 05/01/2013 - 04/30/2016.
 32. **Shim JK** (PI), Development of Smart Guitar with 3-D force finger force measurement during playing, **\$5,000; Funded**. 03/01/2017 - 07/01/2017.
 33. **Shim JK** (Multi-PI with Dr. Jin-Oh Hahn), Mining Wrist Band Physiological Signals for Advanced Cardiovascular Monitoring, Samsung Electronics. **\$258,032; Funded**. 03/15/2017 - 03/14/2018.
 34. **Shim JK** (PI), Systematic investigation into hand functions for the development of evidence-based hand rehabilitation for stroke patients (Phase II), National Research Foundation (NRF), **\$150,000; Funded**. 11/01/2016 - 10/30/2019.

35. **Shim JK** (PI), Equilibrium theory based evaluation of static finger forces of stroke patients, Ministry of Health and Welfare of Korea, **\$150,000; Funded.** 03/01/2017 - 02/30/2019.
36. **Shim JK** (PI) Investigation of Physical Human-Robot Collaboration (PHRC) through Systematic Scientific Research on Human-Human Physical Interactions during Collaboration, Korea Institute of Machinery and Materials. **\$276,000; Funded.** 01/01/2018 – 12/31/2020.
37. **Shim JK** (PI), Evaluation of Mechanical Loads on an Osseointegrated Implant During Locomotor Activities of Daily Living, Department of Defense CDMRP; **\$349,778; Funded.** Period: 01/01/2021-12/31/2024.
38. **Shim JK** (PI), Investigation on hand function in the adult with developmental coordination disorder, National Research Foundation of Korea; **\$620,000; Funded.** Period: 06/01/2021-05/31/2024.

Extramural Grants as Co-PI/Co-I

1. **Shim JK** (Co-PI) and Hurley B (PI), Prediction of physical attributes for performance in firefighting tasks. Physical assessment relations to job performance in firefighters, Department of Homeland Security; Period: 06/01/2007-05/31/2008; **\$275,000; Funded.** 2007.
2. **Shim JK** (Co-PI) and Noh HS (PI), Pressure response mediated by the mechanoreceptor activation in hypertensive people, Korea Research Foundation (R01); Period: 07/01/2007 – 06/30/2008; **\$100,000; Funded.** 2007.
3. **Shim JK** (Co-PI) and Kim YH (PI), Development of sports science based biomechanical and physiological model and application technology, Korea Institute of Sport Science, 06/01/2009 – 05/31/2012; **\$90,000; Funded.** 2009.
4. **Shim JK** (Co-PI) and Miller RH (PI), Biomechanical Evaluation of Milestone Pod; Maryland Industrial Partnerships; **\$100,000** (\$90,000 fund from MIPS, + \$10,000 fund from Industrial Partner); **Funded.** Period: 02/01/16-08/31/17.
5. **Shim JK** (Co-PI) and David Klossner (PI), NCAA Soccer Periodization Study; NCAA; **\$89,193; Funded.** Period: 08/01/16-07/30/17.
6. **Shim JK** (Co-PI), Multimodal approach on AI-based piano performance visualization and generation, Seoul National University Internal Grant; **\$90,000;** Period: 08/01/2021-07/31/2022.
7. **Shim JK** (Co-PI), Patient-Specific Metamaterial Prosthesis Socket, Maryland Industrial Partnerships (MIPS); **\$144,634; Funded.** Period: 01/01/2022-12/31/2022.
8. **Shim JK** (Co-PI), Adaptive, Modular, Joint-Rehabilitating, Load- Shunting Exoskeleton; Congressionally Direct Medical Research Programs (CDMRP) SBIR Phase II; **\$249,975; Funded.** Period: 08/01/2022-07/31/2025.
9. **Shim JK** (Co-PI), Modeling and cross-sectional analysis of movement quality with osseointegrated prostheses, Department of Defense CDMRP; **\$712,000; Funded.** Period: 07/01/2023-06/30/2026.

Intramural Grants as PI

1. **Shim JK** (PI) Effects of Lower-Body Compression Garment on Warm-up Time and Jump Performance & Annual Motion Analysis Workshop; Department of Physical Education, Ball State University; **\$1,000; Funded.** 2001
2. **Shim JK** (PI) The Influence of Lower-Body Compression Garments on Athletic Performance, 48th ACSM Annual Meeting, Baltimore, Maryland, May 30 - June 2, 2001; Graduate School, Ball State University; **\$100; Funded.** 2001
3. **Shim JK** (PI) The static human prehension: Synergy and principle of superposition; Department of Kinesiology; Penn State University; **\$500; Funded.** 2003
4. **Shim JK** (PI) Synergy and principle of superposition; Biomechanics Laboratory; Penn State University; **\$500; Funded.** 2003
5. **Shim JK** (PI) Rotational equilibrium control in multi-digit human prehension; Alumni Association Dissertation Award; Penn State University; **\$5,000; Funded.** 2004
6. **Shim JK** (PI) Finger coordination during moment production on a mechanically fixed object; Department of Kinesiology; Penn State University; **\$350; Funded.** 2005
7. **Shim JK** (PI), Multi-digit grasping control in children with developmental coordination disorder (DCD); Graduate Research Board (GRB) Summer Research Award, University of Maryland; Period: 7/1/06-8/30/06; **\$8,750; Funded.** 2006
8. **Shim JK** (PI), Plastic Changes of Finger Synergy and Independence after Finger Amputations; International Travel Grant, University of Maryland; Period: 7/1/06-8/30/06; **\$1,800; Funded.** 2009.
9. **Shim JK** (PI), Equipment Purchase Grant, University of Maryland; **\$90,000; Funded.** 2010
10. **Shim JK** (PI), Upper Extremity Rehabilitation after Stroke, Office of International Affairs, University of Maryland; **\$15,000; Funded.** 2015
11. **Shim JK** (Multi-PI), The Elite Athlete as a Model for the Impact of Mechanical Loading on Human Knee Joint Health; University of Maryland Research Office Tier 1; **\$50,000; Funded.** 2015
12. **Shim JK** (PI), Stroke hand rehabilitation, Research and Scholarship Awards (RSA), Graduate School, University of Maryland College Park, **\$10,000; Funded.** 09/01/2016 - 12/15/2016.
13. **Shim JK** (PI), Stroke hand rehabilitation, 2017 Global Partnerships-Faculty Travel Grant, Office of International Affairs, University of Maryland College Park, **\$6,000; Funded.** 05/26/2017 - 04/01/2018.
14. **Shim JK** (PI; Multi-PI: Derek Paley), RESUME: Research in Electric Scooter Urban Mobility, Maryland Transportation Institute (MTI). **\$50,000; Funded.** 01/01/2020 – 12/31/2020.
15. **Shim JK** (PI; Multi-PIs: Derek Paley), Learning Age and Gender Adaptive Gait Motor Control based Emotion using Deep Neural Networks and Affective Modeling, Brain Behavior Institute (BBI) Seed Grant. **\$79,727; Funded.** 07/01/2020 – 06/30/2021.
16. **Shim JK** (PI), Early detection of cognitive impairment with a dual-task, Faculty-Student Research Award (FSRA), Graduate School, University of Maryland. **\$10,000; Funded.** 09/01/2020 – 08/31/2021 (no cost extension to 02/30/2022).

17. **Shim JK** (PI), Patient-specific metamaterial prosthesis socket, Maryland Industrial Partnerships. **\$100,000; Funded.** 02/01/2022 – 01/31/2023.
18. **Shim JK** (PI), Knee Osteoarthritis Insole, Maryland Technology Enterprise Institute (Mtech). **\$50,000; Funded.** 09/01/2022 – 08/31/2023.

II.K.2. Contracts

1. **Shim JK** (PI), Shock Tube Comparisons and Testing Methodology: Comparison of Wearable Physiological Monitoring Systems, Sub-contract with Johns Hopkins University APL, **\$147,100; Period:** 01/01/2022-08/30/2022.

II.K.3. Other

II.L. Gifts, and Funded Research not administered by ORA

II.L.1. Gifts (*solicited and in-kind funds*)

1. Recovery Science LLC, **\$3,000;** 08/14/2007
2. Recovery Science LLC, **\$2,000;** 08/14/2007
3. Recovery Science LLC, **\$2,000;** 06/29/2009
4. Kyung Hee University, **\$34,980;** 00/00/2009
5. Kyung Hee University, **\$50,000;** 09/29/2009
6. Private Donor, **\$500;** 12/31/2010
7. Under Armour, **\$17,000;** 12/31/2010
8. Under Armour, **\$20,000;** 12/31/2010
9. Zephyr Tech Corp., **\$5,000;** 11/23/2011
10. Zephyr Tech Corp., **\$5,000;** 11/31/2011
11. Zephyr Tech Corp., **\$5,000;** 11/31/2011
12. Private Donor, **\$300;** 12/22/2012
13. Freedom Innovations, **\$20,000;** 03/29/2012
14. Zephyr Tech Corp., **\$5,990;** 04/04/2012
15. Freedom Innovations, **\$20,000;** 05/15/2012
16. Private Donor, **\$500;** 12/31/2012
17. Private Donor, **\$100;** 12/23/2014
18. Amplio Inc., **\$20,000;** 2020
19. Amplio Inc., **\$20,000;** 2021
20. New Balance Athletics Inc. **\$6,000; Funded (in kind).** 09/01/2018.
21. Integrum Inc. **\$5,000.** 10/01/2022.

II.L.2. Community Capacity Building (*assistance provided resulting in awards*)

II.L.3. Volunteer Contributions

II.L.4. Other

II.M. Centers for Research, Scholarship, and Creative Activities

II.M.1. Centers Established

II.M.2. Centers Directed

II.M.3. Symposia Organized (*through center*)

II.M.4. Other

II.N. Patents

Patents Granted

U.S. Patent No. US11963791 B2
Training Systems and Methods for Predicting Knee Adduction Moment
Publication date: 02/25/2024

U.S. Patent No. US10973620 B2
Biomimetic Artificial Muscle Module, Biomimetic Artificial Muscle Assembly
Having The Same, And Method Of Controlling The Same
Publication date: 08/06/2020

Korea Patent No. 10-1748138
System for Wrist Control and Function
Publication date: 06/12/2017

Korea Patent No. 10-2090765
Device for bilateral upper extremity motor function rehabilitation and assessment
Publication date: 08/21/2020

Patents Filed

U.S. Patent Application No. PCT/US20/62200
System and Method for Gait Analysis
Filing date: 11/25/2020

U.S. Patent Application No. PCT/US22/13712
System, Device, and Method for Determining Knee Adduction
Filing date: 02/25/2022

U.S Patent Application No. US18/797,404
Neural Network To Predict Knee Medial Joint Contact Force From Custom
Instrumented Insole
Filing date: 08/078/2024

II.N.1. Device

II.N.2. Other

II.O. Entrepreneurial, Technology Transfer

II.P. Other Research / Scholarship / Creative Activities

II.Q. Research Fellowships, Prizes and Awards

1. 1992 **Freshman of the Year Award**
College of Exercise Science & Physical Education
Kyung Hee University, Top Entrance Exam Score, One-Year Full Scholarship
2. 1993 **Youth for Future Award**
Korean Ministry of Education, One-Year Full Scholarship
3. 1999 **Presidential Award for Excellent Academic Achievement**
Kyung Hee University, Top GPA among Graduates in 1999
4. 1999 **Graduate of the Year Award**
Kyung Hee University
5. 1999 **Oversea Exchange Student Award**
Kyung Hee University & Ball State University, IN, USA
Two-Year Graduate Assistantship
6. 2002, 2001 **Recognized Graduate Student**
Graduate School, Ball State University, IN, USA
7. 2004 **Kligman Research Fellowship**
The Graduate School, Penn State University, PA, USA
8. 2005 **Dissertation Award**
The Graduate School, Penn State University, PA, USA
9. 2006 **General Research Board (GRB) Research Award**
University of Maryland, MD, USA
10. 2009 **Young Scientist Award (winner; honorary award)**
American Society of Biomechanics (ASB)
11. 2009 **Promising Young Scientist Award (winner; honorary award)**
International Society of Biomechanics (ISB)
12. 2010 **Kyung Hee International Scholar**
Kyung Hee University
13. 2012 **George F. Kraemer Practitioner of the Year Award**
School of Public Health, University of Maryland
14. 2015 **Research & Development Award**
School of Public Health, University of Maryland
15. 2020 **Maryland Research Excellence Celebration**
University of Maryland

III. Teaching, Extension, Mentoring, and Advising

III.A. Courses Taught

- Fall 2005 (Assistant Professor)
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- Spring 2006
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland

- Fall 2006
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - New course development: KNES789T, Current Issues in Hand and Finger Biomechanics and Motor Control, (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
- Spring 2007
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - New course development: KNES689C, Kinematics of Human Motion (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
- Fall 2007
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
- Spring 2008
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Fall 2008
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Spring 2009
 - New course development: KNES689F, Neuromechanics of Muscles (3 credits), University of Maryland
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Fall 2009
 - New course development: GEMS296, Team Project Seminar I (2 credits), University of Maryland
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES498, Special Topics in Kinesiology (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2010
 - New course development: GEMS297, Team Project Seminar II (2 credits), University of Maryland
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland

- KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Fall 2010
 - New course development: GEMS396, Team Project Seminar III (2 credits), University of Maryland
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - New course development: KNES670, Biomechanics Theory (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2011
 - New course development: GEMS397, Team Project Seminar IV (2 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Summer 2011
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2011 (Associate Professor)
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - New course development: GEMS496, Team Project Seminar IV (2 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689L, Neuromechanics of Bipedal Locomotion (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2012
 - New course development: GEMS497, Team Project Seminar IV (2 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES689W, Anthropomorphic Robotics (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2012
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2013
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland

- KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- NACS899, Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2013
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Spring 2014
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - BIOE399, Independent Study (3 credits), University of Maryland
 - New course development: KNES498W, Prosthetics for Limb Amputations (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Fall 2014
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES498, Special Topics in Kinesiology (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2015
 - New course development: BIOE486, Capstone Design II (3 credits), University of Maryland
 - KNES289, Topical Investigation (3 credit), University of Maryland
 - KNES498, Special Topics in Kinesiology (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2015
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES389, Topical Investigation (3 credits), University of Maryland
 - New course development: BIOE399, Independent Study in Bioengineering (3 credits), UMD
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - New course development: KNES698G, Research Techniques in Neuromechanics (3 credits), UMD
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Spring 2016
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES389, Topical Investigation (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland

- KNES799, Masters Thesis Research (3 credits), University of Maryland
- KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- Fall 2016
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES789, Advanced Seminar (3 credits), University of Maryland
- Spring 2017
 - New course development: KNES289P, Mathematical and Physical Bases of Human Movement (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - New course development: KNES789B, Advanced Biomechanics (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
- Fall 2017
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - New course development: KNES789P, Contemporary Neuromechanics (3 credits), University of Maryland
- Spring 2018
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- Fall 2018
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES789A, Advanced Neuromechanics (3 credits), University of Maryland
- Spring 2019
 - KNES300, Biomechanics of Human Motion (4 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- Fall 2019
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES789T, Current Issues in Hand Biomechanics and Motor Control (3 credits), University of Maryland
- Spring 2020
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- Fall 2020
 - KNES289P, Mathematical and Physical Bases of Human Movement (3 credits), University of Maryland
 - KNES498V, Clinical Biomechanics: Musculoskeletal Injury (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland

- KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
- KNES689Q, Clinical Biomechanics: Musculoskeletal Injury (3 credits), University of Maryland
- KNES799, Masters Thesis Research (3 credits), University of Maryland
- KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2021
 - KNES498V, Clinical Biomechanics: Musculoskeletal Injury (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES497, Neuromechanics of Human Hand and Finger Dexterity (3 credits), University of Maryland
 - KNES799, Masters Thesis Research (3 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2021
 - KNES289P, Mathematical and Physical Bases of Human Movement (3 credits), University of Maryland
 - KNES498V, Clinical Biomechanics: Musculoskeletal Injury (3 credits), University of Maryland
 - GEMS396, Team Project Seminar III (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2022
 - KNES497, Neuromechanics of Human Hand and Finger Dexterity (3 credits), University of Maryland
 - GEMS397, Team Project Seminar III (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES789A, Contemporary Neuromechanics (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
 - NACS899, Neuroscience Doctoral Dissertation Research (6 credits), University of Maryland
- Fall 2022
 - KNES289P, Mathematical and Physical Bases of Human Movement (3 credits), University of Maryland
 - KNES609, Current Research in Kinesiology (1 credit), University of Maryland
 - GEMS497, Team Project Seminar III (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland
 - KNES751, Advanced Neuromechanics (3 credits), University of Maryland
 - KNES898, Pre-Candidacy Research (6 credits), University of Maryland
 - KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- Spring 2023
 - KNES498V, Clinical Biomechanics: Musculoskeletal Injury (3 credits), University of Maryland
 - GEMS498, Team Project Seminar III (3 credits), University of Maryland
 - KNES689, Special Problems in Kinesiology (3 credits), University of Maryland

- KNES751, Advanced Neuromechanics (3 credits), University of Maryland
- KNES898, Pre-Candidacy Research (6 credits), University of Maryland
- KNES899, Doctoral Dissertation Research (6 credits), University of Maryland
- NACS899, Neuroscience Doctoral Dissertation Research (6 credits), University of Maryland

III.B. Teaching Innovations

- III.B.1. Major Programs Established
- III.B.2. Education Abroad Established
- III.B.3. Textbooks
- III.B.4. Software, Applications, Online Education, etc.
- III.B.5. Instructional Workshops and Seminars Established
- III.B.6. Course or Curriculum Development
- III.B.7. Teaching Modules
- III.B.8. Other

III.C. Advising: Research or Clinical

III.C.1. Undergraduate

- Patrick Bengero Fall 2005 – Spring 2006, URA, Major in Kinesiology
 - Currently Design Engineer at Siemens.
- Andrew Chamberlin Fall 2005 – Spring 2006, URA, Major in Mechanical Engineering
- Tabinda Burney Fall 2005 – Spring 2006, URA, Major in Cell Biology & Molecular Genetics
 - Currently at US Health and Human Services (HHS).
- Bemnet Abebe Fall 2005 – Spring 2006, URA, Major in Biology
- Erica Wentz Fall 2005 – Spring 2006, URA, Major in Physiology and Neurobiology
- Gary Toussaint Fall 2005 – Spring 2006, URA, Major in Electrical Engineering & Kinesiology
- Jeff Hsu Fall 2005 – Spring 2007, Undergraduate Research Assistant (URA)

Kinesiology Honor's Student

- **Undergraduate Student Researcher of the Year Award** (Spring 2006), University of Maryland, College Park; Project title: Hand digit control in children.
- **Senior Summer Scholars Program Award** (\$3,000); 2006 Summer; Project title: Hand digit independency and synergy in children with developmental coordination disorder.
- **Howard Hughes Medical Institutes (HHMI) Undergraduate Research Award** (\$3,000); 2006; Project title: Effect of neuromuscular training on hand digit independency and synergy
- Alexander Hooke Fall 2005 - Spring 2006, URA, Major in Physics,
- Sung-Jin Sunwoo Spring 2006 - Fall 2006, URA, Major in Bioengineering

- **Awardee of Scholars Program for Industry-Oriented Research in Engineering Program** (\$3,000), A. James Clark School of Engineering; 2006 Spring; Project title: Development of fiber optic sensor based force measurement system to study kinetics of human movements in MEG and FMRI.
- Jennifer Aidikoff Spring 2007 – Fall 2007, URA, Major in Bioengineering
- Tracey Epstein Spring 2007 – Fall 2007, URA, Major in Bioengineering
 - **Howard Hughes Medical Institutes (HHMI) Undergraduate Research Award** (\$6,500); 2007; Project title: Effect of neuromuscular training on multi-finger coordination in the elderly.
- Albert Lee Winter 2007 – Spring 2008, URA, Major in Kinesiology
- Chukwuka Onyewu Spring 2007 – Spring 2008, URA, Major in Kinesiology
- William Kool Spring 2008 – Spring 2008, URA, Major in Kinesiology
 - Thesis title: Effects of spacesuit gloves and a depressurized environment on motor control performance.
- David Bates Fall 2007 – Spring 2009, URA, Major in Kinesiology
 - **Howard Hughes Medical Institutes (HHMI) Undergraduate Research Award** (\$7,500)
- Kimberly Ziegler Spring 2008 – Spring 2009, URA, Major in Bioengineering
 - **A Schoars Program for Industry-Oriented Research in Engineering (ASPIRE) Award** (\$1000); 2008; Project title: Running analysis and adaptations in people with lower extremity amputations.
 - **A Schoars Program for Industry-Oriented Research in Engineering (ASPIRE) Award** (\$1000); 2009; Project title: Mechanical characteristics of running-specific carbon-fiber prosthesis.
- Daniel Halayko Fall 2008 – Spring 2009, URA, Major in Kinesiology
- Lisa Fox Fall 2009 – Spring 2010, Kinesiology Honors Student
 - Thesis title: Establishing the Optimal Marker Placement on a Running-Specific Prosthesis for the Analysis of Running with Lower Extremity Amputations
- Allison Zetts Spring 2010 – Spring 2011, Major in Kinesiology
- Ben Shefter Fall 2010 – Spring 2011, URA, Major in Kinesiology
- James Ritchie Fall 2010 – Spring 2011, URA, Major in Kinesiology
- Eliza Reynolds Fall 2010 – Spring 2011, URA, Major in Bioengineering
- Hilary Hoffman Fall 2010 – Spring 2011, URA, Major in Bioengineering
- Maya Mudambi Fall 2010 – Spring 2011, URA, Major in Kinesiology
- Kyle Bruin Fall 2011 – Spring 2012, Major in Kinesiology

- Melanie Schultz Spring 2011 – Spring 2012, Major in Kinesiology, Kinesiology Honors Student (Thesis title: “Comparison of kinetic and kinematic methods for calculating external mechanical energy during running”)
- Collen Gulick Fall 2011 – Spring 2012, Major in Bioengineering
- Thomas Hulz Spring 2010 – Fall 2012, Major in Bioengineering
- Yoon Kyung Cho Spring 2012 – Fall 2012, Major in Kinesiology, Kinesiology Honors Student
- Matthew Moon Fall 2011 – Spring 2012, URA, Major in Bioengineering
- Andrea Tian Spring 2010 – Spring 2012, Major in Kinesiology, Kinesiology Honors Student
- Philip Cruz Fall 2011 – Spring 2012, URA, Major in Kinesiology
- Michelle Muldoon Fall 2012 – Spring 2012, URA, Major in Neurobiology
- Whitney Chapman Fall 2013 – Fall 2014, URA, Major in Bioengineering
- Siyeon Kim Fall 2012 – Spring 2015, URA, Major in Kinesiology
- Nayeem Chowdhury Fall 2013 – Spring 2015, URA, Major in Bioengineering
- Kyle Bruin Fall 2013 – Spring 2015, URA, Major in Kinesiology
- Ben Shefter Fall 2014 – Spring 2015, URA, Major in Kinesiology & Bioengineering
- Isabella Newton Fall 2014 – Fall 2015, URA, Major in Bioengineering
- Deon Guduru Summer 2015 – Fall 2015, URA, Major in Public & Community Health
- Anchal Domalapally Summer 2015 – Fall 2015, URA, Major in Biological Science
- Jessica Carrigan Fall 2014 – Spring 2016, URA, Major in Kinesiology, Kinesiology Honors Student
 - Thesis title: Lower Extremity Amputee Physical Function Capabilities: A survey study of amputee preferences and limitations
 - **Fraleay Award**, the highest UG honor from UMD School of Public Health
- Ryan Daigle Fall 2014 – Fall 2016, URA, Major in Kinesiology
- Oren Lagziel Fall 2014 – Fall 2016, URA, Major in Bioengineering
- Woojae Koh Fall 2014 – Fall 2016, URA, Major in Bioengineering
- Emily Finkelstein Fall 2016 – Fall 2016, URA, Major in Kinesiology, Kinesiology Honors Student
- Alyssa Ruefenacht Summer 2017 – Fall 2017, URA, Major in Kinesiology
- Regina Wingate Summer 2017 – Fall 2017, URA, Major in Mechanical Engineering
- Anna Packy Fall 2017 – Fall 2017, URA, Major in Bioengineering
- Chasey Wong Fall 2017 – Fall 2017, URA, Major in Mechanical Engineering

- Tim Crane Spring 2018 – Fall 2018, URA, Major in Kinesiology
- Rebecca Vaudreuil Spring 2018 – Fall 2018, URA, Major in Kinesiology
- Aida Kebede Fall 2018 – Spring 2019, URA, Major in Bioengineering
- Amanda Poulakowski Fall 2018 – Spring 2019, URA, Major in Kinesiology
- Melissa Hewitt Spring 2019 – Current, URA, Major in Kinesiology
- Josiah Bedford Fall 2019 – Fall 2020, URA, Major in Mechanical Engineering
- Urvi Chowdhury 2021, URA, Major in Neurobiology and Physiology
- Rachel Black 2022, URA, Major in Kinesiology
- Nathan Zekarias Summer 2022, Major in Biology
- Jana Tumaneng 2022, URA, Major in Kinesiology, Kinesiology Honors
- Archit Kambhamettu 2022, URA, Majors in Computer Science & Mathematics

III.C.2. Master's

- James Lieu Fall 2005 – Spring 2008 (Thesis title: “The Effects of Finger Movement Conditions and Speed on Finger Interdependency”)
- Alexander Hooke Fall 2006 – Spring 2008 (Thesis title: “Handwriting Kinetics: A Search for Synergies”)
 - Graduate Research Initiative Project Award (\$3,000), 2007
 - Currently Research Scientist at Mayo Clinic
- Sohit Karol Fall 2006 – Spring 2008 (Thesis title: “The Effects of Kinematic Degrees of Freedom Multi-finger Force and Moment Stabilizing Synergies: Motor Redundancy vs. Motor Abundance”)
 - ISB Student Travel Grant Award (\$1,000), 2007
 - Graduate Research Initiative Project Award (\$2,400), 2007
 - Post-doc at Harvard University
 - Currently Research Scientist at Microsoft Windows Laboratory
- Jeffrey Hsu Fall 2007 – Fall 2009, Kinesiology (Thesis title: “Aging Related Differences in Hand Intrinsic and Extrinsic Muscles for Hand Function – An MRI Investigation”)
 - Graduate Research Initiative Project Award (\$3,000), 2007
 - Jacob K. Goldharber Travel Grant (\$1,500), 2009
 - Currently Medical Doctor (MD) & CEO of Yawlih Co.
- Edward Chu Fall 2013 – Spring 2016, Kinesiology (Thesis title: “Neural Modulation of Leg Stiffness in Response to Fatigue”)
 - Graduate Research Initiative Project Award (\$2,500), 2015
 - Currently PhD Student at Neuromechanics Research Core at UMD
- Kelsey Christensen Fall 2014 – 2016 Fall, Kinesiology (Thesis title: “The Organization of Motor Synergies in Joint and Individual Multi-Finger Force Production Tasks”)
- Dovin Kiernan Spring 2013 – Current, Kinesiology
 - Graduate Research Initiative Project Award (\$2,500), 2014
 - Top-tier PhD scholarship from NSERC (\$105,000 over 3 years), 2015

- Currently at MIT Lincoln Laboratory
- Kyung Koh, PhD Fall 2010 – Spring 2015, Kinesiology
Thesis title: “Integration of intra-auditory modalities for enhancement of motor performance and coordination in a constant force production task”
 - Graduate Research Initiative Project Award (\$2,500), 2015
 - Previously at Research Associate at University of Maryland College Park
 - Currently Research Associate at University of Maryland Baltimore Medical School
- Rana Karimpour Fall 2015 – current, Kinesiology
 - Henson Travel Award, Department of Kinesiology, UMD
- Edward Chu Fall 2016 – current, Kinesiology
 - Graduate student recruitment fellowship, 2016
 - Confucius Scholarship (\$500), Confucius Foundation for academic excellence
 - Kinesiology Teaching Assistant of the Year (\$500), Department of Kinesiology, UMD
- Mia Caminita Fall 2017 – current, Kinesiology
- Gina Garcia Fall 2017 – current, Kinesiology
- Jenna Burnett Fall 2017 – current, Kinesiology
- Liz Bell Spring 2018 – Spring 2023, Kinesiology
 - Honorable mention – Student Poster Competition. Public Health Research at Maryland. University of Maryland, College Park, MD, USA. April 5th, 2016 & April 6th 2017
 - Edwin & Kathryn Arbogast Award, American Orthopedic and Prosthetic Association, 2017
- Hossein Ehsani Fall 2018 – current, Neuroscience and Cognitive Science
- Samantha Snyder Fall 2021 – current, Kinesiology

III.C.4. Post-doctoral

- You-Sin Kim, PhD Spring 2008 – Spring 2011, Biomechanics & Rehabilitation
 - Taedo Research Foundation Grant, Korea (\$20,000), 2008
 - Currently Associate Professor at Jungwon University, Korea
- Prabhav Saraswat, PhD Fall 2010 – Spring 2011, Biomechanics of running
 - Under Armour Postdoctoral Fellowship, (\$50,000), 2010
 - Currently Biomechanics Application Scientist at Simulia Inc.
- James Chuo, MD Winter 2011 – Spring 2012, Rehabilitation Medicine
 - Currently Practicing Medical Doctor of Internal Medicine Specialist at Wheeling Hospital, West Virginia
- Arick Auyang, PhD Fall 2011 – 2012, Biomechanics & Rehabilitation
 - Under Armour Postdoctoral Fellowship, (\$50,000), 2011
 - Currently Research Scientist at NIKE Research Laboratory
- Hiroaki Hobara, PhD Fall 2011 – Spring 2012, Biomechanics of amputee locomotion
 - Japan Society for the Promotion of Science (JSPS) Research Fellow Award

- *ISB Promising Young Scientist Award (honorary)*
- Currently Senior Research Scientist with Tenure at National Institute of Advanced Industrial Science and Technology (AIST), Japan
- Pedro Figueiredo, PhD Spring 2015 – Spring 2016, Physical Education, Federal University of Rio De Janeiro
 - Currently Research Director of Portuguese Football Federation, Portugal
 - Currently Faculty at University of Lisbon, Portugal
- Mitsuo Otsuka, PhD Spring 2011, Biomechanics of sprinting
 - Currently Assistant Research Professor at Ritsumeikan University, Japan
- Hyunjoon Kwon, PhD Fall 2012 – Fall 2014, Biomechanics & Motor control
 - Currently Assistant Research Professor at University of Maryland, College Park
- Yangsun Park, PhD Spring 2014 – Spring 2016
 - Korean Presidential Postdoctoral Award (\$180,000)
 - Currently Assistant Research Professor at Han Yang University, Korea
- Serap Bastepe-Gray, MD, MM, MsOT (OTR/L), CPAM Fall 2016 – Fall 2017, Biomechanics of Musical Instrument Playing
 - Currently Faculty Research Associate at Johns Hopkins University School of Medicine
 - Currently Faculty Artist, Guitar Ensemble Director at the Peabody Institute
- Kyung Koh, PhD Fall 2016 – Fall 2017, Kinesiology
 - Currently Research Associate at University of Maryland Baltimore Medical School
- Yushin Kim, PhD Fall 2016 – Fall 2017, Kinesiology (Co-advised with NIH)
 - Korean Ministry of Health and Welfare Award (\$80K)
 - Currently Tenure-Track Assistant Professor at Cheongju University, Korea
- Seung-Jun Oh, PhD Winter 2022 – Fall 2022, Kinesiology
 - Korea Research Foundation Post-doctoral Award

III.C.5. Other Directed Research (*e.g. K-12 Interactions*)

III.D. Mentorship

III.D.1. Junior Faculty

- Pedro Figueiredo, PhD Spring 2016 – Spring 2017, Physical Education, Federal University of Rio De Janeiro
 - Currently Research Director of Portuguese Football Federation, Portugal
 - Currently Faculty at University of Lisbon, Portugal
- Hyunjoon Kwon, PhD Fall 2014 – Fall 2018, Assistant Research Professor, Kinesiology, UMD
- Ross Miller, PhD Fall 2012 – current, Assistant/Associate Professor, Kinesiology, UMD
 - **ISB Promising Young Scientist Award (honorary)**

III.D.2. Other

III.E. Advising: Other than Directed Research

- III.E.1. Undergraduate
- III.E.2. Master's
- III.E.3. Doctoral
- III.E.4. Post-doctoral
- III.E.5. Other Advising Activities

Post-Masters

- Roozbeh Borjian Fall 2009-Spring 2010, Biomechanics & Prosthesis
 - Currently at Engineer Innovative Automation Inc.

International Research Scientist/Visiting Professor Mentorship

- Chang Kook Kim, PhD Spring 2007-Winter 2007, Biomechanics,
 - Professor, Korea University
- Chulsoon Choi, PhD Spring 2008-Winter 2008, Biomechanics
 - Professor, Kwangwoon University
- Bumchul Yoon, PT, PhD Spring 2009-Winter 2009, Physical Therapy
 - Professor, Korea University
- Woosub Kim, MD, PhD Summer 2010-Summer 2011, Physical Medicine & Rehabilitation
 - Professor, Seoul Veterans Hospital
- Insook Kang, PhD Fall 2010-Spring 2011, Physical Medicine & Rehabilitation
 - Professor, Gyeongsang National Univ.
- Okjin Lee, PhD Spring 2014-Spring 2015, Physical Education
 - Professor, Kwangwoon University
- Yongsuk Cho, PhD Fall 2013-Spring 2005, Electrical Engineering
 - Professor, Konyang University
- Yushin Kim, PhD Fall 2015-Fall 2016, Physical Therapy
 - Assistant Research Professor, Korea Advanced Institute of Science and Technology
- Sangkyu Choi, PhD Spring 2015-Winter 2016,
 - Senior Research Scientist, Korea Institute of Machinery and Materials
- Yong Woon Kim, PhD Fall 2017-Fall 2018
 - Associate Professor, Kyungnam University
- Moon Seok Park, MD, PhD Spring 2018-Spring 2019
 - Professor, Seoul National University Bundang Hospital
- Kyung Soo Kim, PhD Fall 2018-Spring 2019
 - Associate Professor, Kyung Hee University
- Jin-Seok Hahn, PhD Fall 2021-Spring 2022
 - Senior Research Fellow, Korea Environment Institute

III.F. Professional and Extension Education

- III.F.1. Professional Programs Established
- III.F.2. Major Extension Programs (*Include situation, objectives, outputs, outcomes / impact*)

- III.F.3. Workshops
- III.F.4. Guest Lectures (*Presented in traditional classes or for someone else's program*)
- III.F.5. Extension Signature Programs
- III.F.6. Extension Programs of Distinction
- III.F.7. Other

III.G. Contribution to Learning Outcomes Assessment

III.H. Other Teaching Activities

III.I. Teaching Awards

IV. Service and Outreach

IV.A. Editorships, Editorial Boards, and Reviewing Activities

Include participation for journals and other learned publications (print and electronic).

IV.A.1. Editorships

- 2020 – Current *Frontiers in Human Neuroscience*, Chief Editor
(Specialty in Sensory Neuroscience)
- 2018 – Current *Journal of Applied Biomechanics*, Associate Editor
- 2017 – 2018 *Korean Journal of Sport Biomechanics*, Associate
Editor-In-Chief
- 2017 – 2020 *Frontiers in Human Neuroscience*, Associate Editor
(Motor Neuroscience)

IV.A.2. Editorial Boards

- 2008 International Society of Biomechanics in
Sports (ISBS) Conference Proceedings
- Editor and Vice Chair of Scientific Committee
- 2010 – Current American Society of Biomechanics (ASB) Award
Committee
- 2012 – Current American Society of Biomechanics (ASB) Program
Committee
- 2012 – Current Motor Control, Editorial Board, International
Society of Motor Control
- 2012 – Current Journal of Motor Behavior, Editorial Board

IV.A.3. Reviewing Activities for Journals and Presses

IV.A.4. Reviewing Activities for Agencies and Foundations

IV.A.5. Reviewing Activities for Conferences

IV.A.6. Other

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service – Department

2005-2006

- Computer and Web Committee, Chair
- Graduate Committee
- Teaching Laboratory Committee

2006-2007

- Computer and Web Committee, Chair
- Graduate Committee
- Teaching Laboratory Committee

2007-2008

- Computer and Web Committee, Chair
- Undergraduate Committee
- Teaching Laboratory Committee

2008-2009

- Computer and Web Committee
- Undergraduate Committee
- Teaching Laboratory Committee

2009-2010

- Computer and Web Committee
- Undergraduate Committee
- Teaching Laboratory Committee
- Executive Committee, Elected

2010-2011

- Computer and Web Committee, Chair
- Graduate Committee
- Executive Committee
- New Faculty Search Committee

2011-2012

- Computer and Web Committee
- Graduate Committee
- GRIP Committee New Faculty Search Committee

2013-2014

- New Faculty Search Committee Chair
- Husman Lecture Committee Chair
- Sport Performance Committee

2014-2015

- Computer and Web Committee Committee, Chair
- Husman Lecture Committee, Chair
- Human Performance Committee
- Undergraduate Sub-Committee Undergraduate Honors Program

2015-2016

- Computer and Web Committee, Chair
- Kinesiology Executive Committee
- Human Performance Committee

- Graduate Committee/Fellowships & Awards/Grip Committee
- APT Committee
- Search Committee for Exercise Physiology Position
- Undergraduate Sub-Committee Honors Program Committee
- Workload Policy Committee

2016-2017

- Computer and Web Committee, Chair
- Kinesiology Executive Committee
- Human Performance Committee
- Graduate Committee/Fellowships & Awards/Grip Committee
- APT Committee
- Undergraduate Sub-committee: Honors Program Committee

2017-2018

- Kinesiology Executive Committee
- Burris Husman Lecture Committee, Co-Chair
- Library Representatives
- Human Performance Committee
- Computer and Web Committee
- Graduate Committee
- Fellowships & Awards
- Standing Committee on Appeals

2018-2019

- Kinesiology Executive Committee
- Burris Husman Lecture Committee, Co-Chair
- Library Representatives
- Human Performance Committee
- Computer and Web Committee
- Graduate Committee
- Fellowships & Awards
- Standing Committee on Appeals

2019-2020

- Kinesiology Executive Committee
- Human Performance Committee
- Graduate Committee
- Human Performance Committee
- GRIP Committee
- Promotion and Tenure Committee (Tenure track)
- Promotion and Tenure Committee (Professional track)

2020-2021

- Kinesiology Executive Committee
- Human Performance Committee
- Graduate Committee
- GRIP Committee
- Computer Committee, Chair

- Appeals Committee
- Promotion and Tenure Committee (Tenure track)
- Promotion and Tenure Committee (Professional track)

2021-2022

- Kinesiology Executive Committee
- Human Performance Committee
- Graduate Committee
- Human Performance Committee
- Appeals Committee
- Promotion and Tenure Committee
- Post-Tenure Review Committee

2022-2023

- Kinesiology Executive Committee
- Human Performance Committee
- Graduate Committee
- Human Performance Committee
- Appeals Committee

IV.B.2. Campus Service – College

- 2005-2006 College of Health and Human Performance Web Committee
- 2006-2007 School of Public Health Web Committee
- 2007-2008 School of Public Health Web Committee
- 2010 Kinesiology Department Chair Search Committee
- 2015 Kinesiology Department Chair Evaluation Committee
- 2015-2017 SPH Senate Executive Committee
- 2016-2017 Library Committee
- 2019-2020 SPH Space Committee
- 2022 SPH Dean Review Committee

IV.B.3. Campus Service – University

- 2007-2008 University of Maryland iTuneU Committee
- 2007-2008 University Medal Committee
- 2008-2009 University of Maryland iTuneU Committee
- 2010-2011 University Medal Committee
- 2011-2012 University Medal Committee
- 2012-2013 University Medal Committee
- 2019-2020 Maryland Robotics Center (MRC) Executive Committee
- 2022-Current Sport Research and Innovation Committee

IV.B.4. Campus Service – Special Administrative Assignment

IV.B.5. Campus Service – Other

IV.B.6. Inter-institutional and Regional (*e.g. inter-library agencies, regional consortia*)

IV.B.7. Offices and Committee Memberships

IV.B.8. Leadership Roles in Meetings and Conferences

- 2007 **Organizer**
Northeast American Society of Biomechanics (NE-ASB) Conference 2007;
Conference theme: Bridging the Gap between Biomechanics and Motor Control;
Sponsored by American Society of Biomechanics; College Park, MD; March 30-
31, 2007.
- 2009 **Co-Organizer**
Annual Bioscience and Engineering Symposium (ABES 2009); Sponsored by
Korean-American Scientists and Engineers Association (KSEA); NIH; November
7, 2009.
- 2010 **Organizer**
Symposium on Neuromechanics: Biomechanics and Motor Control of
Musculoskeletal System; Sponsored by e-Spine Korea; June 4, 2010.
- 2012 **Organizer**
Symposium on Neuromechanics: Perception and Action; February 4, 2012.

IV.B.9. Other Non-University Committees, Memberships, Panels, etc.

IV.B.10. Other

IV.C. External Service and Consulting

IV.C.1. Community Engagements, Local, State, National, International

IV.C.2. International Activities

IV.C.3. Corporate and Other Board Memberships

IV.C.4. Entrepreneurial Activities

IV.C.5. Consultancies (*to local, state and federal agencies; companies; organizations*)

IV.C.6. Other

IV.D. Non-Research Presentations

IV.D.1. Outreach Presentations

IV.D.2. Other

IV.E. Media Contributions

IV.E.1. Internet

IV.E.2. TV

IV.E.3. Radio

IV.E.4. Digital Media

IV.E.5. Print Media

IV.E.6. Blogs

IV.E.7. Feeds

IV.E.8. Other

IV.F. Community & Other Service

- 2009 National Math & Science Competition (K-12 students), **Organizing Committee**
- 2010 National Math & Science Competition (K-12 students), **Organizing Committee**

- 2011 National Math & Science Competition (K-12 students), **Organizing Committee**

IV.G. Service Awards and Honors

V. Public Engagement, Scholarship and Practice

V.A. Media Appearances and Interviews

V.B. Community Engaged Practice

V.C. Expert Testimony

V.D. Legislative Involvement

V.E. Advisory Involvement with Public and Non-profit Agencies

V.F. Workforce Development

V.G. Other Public Engagement, Scholarship and Practice

VI. Other Information