

CURRICULUM VITAE

Jae Kun Shim, Ph.D.

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1. CONTACT INFORMATION

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2. EDUCATION

- 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
- 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
- 1999 **B.S.**
Major (Summa Cum Laude) in Physical Education
College of Exercise Science & Physical Education, Kyung-Hee University, Seoul, South Korea.
-Secondary School Teacher License (Korean Ministry of Education)

3. CURRENT APPOINTMENTS

- **Professor & Graduate Faculty**
Department of Kinesiology, University of Maryland, College Park, MD, USA
Fischell Department of Bioengineering, University of Maryland, College Park, MD, USA (Affiliate)
Neuroscience and Cognitive Science (NACS) Program, University of Maryland, College Park, MD, USA (Affiliate)
Maryland Robotics Center, University of Maryland, College Park, MD, USA (Affiliate)
- **Graduate Faculty**
Department of Physical Therapy and Rehabilitation Science, University of Maryland School of Medicine, Baltimore, MD, USA
- **Professor (Kyung Hee International Scholar)**
Department of Mechanical Engineering, College of Engineering, Kyung Hee University, Yong-In Si, South Korea

4. WORK EXPERIENCE

- **2019 – present** **Professor**
Director, Neuromechanics Research Core
University of Maryland, College Park, MD, USA
- **2011 – 2019** **Associate Professor**
Director, Neuromechanics Research Core
University of Maryland, College Park, MD, USA
- **2010 – present** **Professor (Kyung Hee International Scholar)**
Director, Neuromechanics Lab
College of Engineering, Kyung Hee University, Yongin-Si, South Korea
- **2005 – 2011** **Assistant Professor**
Director, Neuromechanics Laboratory
University of Maryland, College Park, MD, USA
- **2002 – 2005** **Graduate Research and Teaching Assistant**
Department of Kinesiology
The Pennsylvania State University, University Park, PA, USA.
- **2002 – 2005** **Graduate Research and Teaching Assistant**
School of Physical Education, Ball State University, Muncie, IN, USA.

5. PUBLICATIONS

^æSenior-authored publications

[§]Student, post-doc, and other mentee co-authors

Refereed Research Articles [n=84]

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. [∞] 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. [∞] **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. [∞] **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. [∞] [§]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. [∞] **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. [∞] **Shim JK**, [§]Hsu J, [§]Karol S, Hurley B.F. Strength training increases training-specific multi-finger coordination. *Motor Control* 12:311-329, 2008.
25. [∞] **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. [∞] **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. [∞] 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. [∞] [§]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. [∞]§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. [∞]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. [∞]§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. [∞]**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. [∞]§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. [∞]§Park J, §Kim YS, **Shim JK**. Prehension synergy: effects of static constraints on multi-finger prehension. *Human Movement Science* 29: 19-34, 2010.
38. [∞]**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. [∞]§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 deterrents of the candidates physical ability tests in firefighters. *Journal of Strength and Conditioning Research* 24: 3112-3122, 2010.

2011

41. [∞]**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. [∞]§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. [∞]**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. [∞]§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. [∞]§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. [∞]§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. ¯§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. ¯§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. ¯§Baum BS, §Hobara H, 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. ¯§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. ¯§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. ¯§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. [∞] § 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. [∞] § 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. [∞] § Park DW, [§] Koh K, Lee SR, [∞] § 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. [∞] § 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. [∞] § 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. [∞] 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. [∞] § 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. [∞] § 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. [∞] § 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. [∞] § 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. [∞] § 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. [∞] § 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. [∞] 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. [∞] § 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. [∞] § 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.

2020

83. [∞] § 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*. doi: 10.3389/fnhum.2020.549880. 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. 2020. *Journal of Applied Biomechanics*. 36(5):340–344, 2020.

85. [∞] §Bell EM, Carrigan 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*. Accepted for Pub.
86. [∞] 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*, 2020. [Accepted for Publication]

Manuscripts in Review

87. [∞] §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*, 2020.
88. [∞] §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*, 2020
89. [∞] §Bernett JK, §Kim YW, §Kwon HJ, Miller RH, **Shim JK**. Whole body mass estimates and error propagation in counter-movement jump. *Clinical Biomechanics*, 2020.
90. [∞] Park YS, Koh K, Park DW, **Shim JK**. Strength-dexterity complementarity: comparison between left and right hands in older female adults. *Korean Journal of Sport Biomechanics*, 2020.
91. 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 Strength Training and Conditioning Research*, 2020.
92. [∞] §Kim SE, Lee J, Lee SY, Lee HD, Lee SC, **Shim JK**. Golf Swing in Response to Anteroposterior Ball Position. *Journal of Sports Sciences*, 2020.
93. [∞] §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)*, 2020.

Manuscripts in Writing

94. [∞] §Honarvar S, Kwon HJ, Caminita M, Ehsani H. Daiz-Mercado Y, Hahn JO, Kiemel T, **Shim JK**. Inter-Personal Motor Synergy: Co-working strategy depends on task constraints. *Journal of Neurophysiology*.
95. [∞] §Chu E, Miller RH, **Shim JK**. Muscle fatigue reduces ipsilateral, but not contralateral leg stiffness in hopping. *Journal of Applied Physiology*.
96. [∞] §Bell EM, Miller RH, Kwon HJ, Koh K, **Shim JK**. Neural and Mechanical Adaptations to Muscular Fatigue over Repetitive Push-Ups. *Medicine & Science in Sports & Exercise*.
97. Miller RH, **Shim JK**. The model-based nature of inverse dynamics and the interpretation of joint moments as metrics for joint loading. *Journal of Applied Biomechanics*.
- 98.

Book Chapters [n=2]

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.

Conference Proceedings and Abstracts [n=131]

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.
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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. (2019) 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.

6. PATENTS

Granted

Korea Patent No. 110-2015-0162416

System for Wrist Control and Function

Applied

U.S. Patent Application No. 16/264,183
Biomimetic Artificial Muscle Module, Biomimetic Artificial Muscle Assembly Having The Same, And Method Of Controlling The Same

U.S. Patent Application No. 62940615 (PPA)
System and Method for Gait Analysis

U.S. Patent Application No. 63112077 (PPA)
System and Method for Gait Analysis

7. PRESENTATIONS

Keynotes/Invited Speeches at International, National, and Local Conferences [n=14]

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 Prosthesis*. 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.

Other Invited Presentations [n=73]

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. NASPSPA 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.** Neuomechanics 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 neuomechanics and Neuomechanics 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.

8. GRANTS [Funded as PI: ~\$6.5M, as Co-PI: ~\$0.6M]

Previous Extramural Grants Funded 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.

Current Extramural Grants **Funded** as PI

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), Optimizing shoe midsole longitudinal bending stiffness based on runner's body mass, Custom Footwear Research Award, New Balance Athletics Inc., **\$6,000; Funded (in kind)**. 09/01/2018 - 08/31/2019.

Pending Extramural Grants as PI

1. ~~**Shim JK** (PI), Patient Oriented Evidence that Matters (POEM) for Comparative Effectiveness and Optimal Prescription of Lower Extremity Prosthesis, Department of Defense CDMRP; Period: 09/01/2019-08/31/2022; **\$1,491,703** (direct: \$998,703); **Pending**. 2018.~~
2. **Shim JK** (PI), Biomechanical Injury Risks and Their Prevention in Musicians through Innovative Research; Grammy Foundation; ~**\$25,000; Pending**. 2020.
3. **Shim JK** (PI), **Sex-based Health Disparity in Playing-related Musculoskeletal Disorders**; National Institute of Health (NIH); ~**\$25,000; Pending**. 2020.

Pending Extramural Grants as Co-PI

1. **Shim JK** (Co-PI, PI: Diaz-Mercado) Learning-Enabled Biomimetic Human-Robot/Human-Swarm Collaboration Inspired by Inter- Personal Motor Synergy. National Robotics Initiative, National Science Foundation (NSF). **\$750,000; Pending.** 2020.

Grant Proposals in Preparation as PI

2. **Shim JK** (PI) Efficacy of Single-Event-Multi-Level Surgeries (SEMLS) in Gait Function of 2000 CP Children. National Institute of Health (NIH); **\$1,500,000; In Preparation.**
3. **Shim JK** (PI) Development and validation of Universal Lower-Extremity Prosthesis (ULEP) for all locomotor and sport activities. National Institute of Health (NIH); **\$2,000,000; In Preparation.**
4. **Shim JK** (PI) Development and validation of 3-D foot pressure system for continuous online diabetic foot monitoring and footwear optimization. National Institute of Health (NIH); **\$1,500,000; In Preparation.**

Grant Proposals in Preparation as Co-PI

- 5.

Previous Extramural Grants Funded as Co-PI

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.

Current Intramural Grants Funded as PI

1. **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.
2. **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.

Pending Extramural Grants as Co-PI

N/A

Previous Intramural Grants Funded 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 (RASA), 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.

Grant Proposals Not Funded

1. **Shim JK** (PI) Static prehension; College of Health and Human Development; Not Funded.
2. **Shim JK** (PI), Functional representations of force magnitude and direction of hand digits in human primary motor cortex (M1); Ralph E. Powe Junior Faculty Enhancement Awards, Oak Ridge Associated Universities (ORAU) Consortium; \$10,000; 2005. Not Funded.
3. **Shim JK** (Co-PI) and Miao Yu (PI), Development of fiber optic sensor based finger force measurement system to study kinetics of human movements in MEG; The National Science Foundation; Period: 7/1/06-6/30/09; \$530,000; Limited submission: Not Funded.
4. **Shim JK** (PI) Human motor cortex (M1) control to magnitude/amplitude and direction of digit force/movements; Searle Scholars Program; Period: 7/1/06-6/30/09; \$240,000; Not Funded.
5. **Shim JK** (PI), Functional representations of force magnitude and direction of hand digits in human primary motor cortex (M1); LFSC & BIOE NIH Seed Program, University of Maryland; Period: 1/25/06-5/30/06; \$56,000; Not Funded.
6. **Shim JK** (PI), Travel Awards for Early Career Neuroscientists for American Psychosomatic Society (APS) meeting; APS, \$500; Not Funded.
7. **Shim JK** (PI), Neuromuscular resistance training effects on motor coordination in older adults; College of Health and Human Performance, University of Maryland; Period: 6/01/07-5/31/087; \$15,000; Not Funded.
8. **Shim JK** (PI), A novel multi-scale approach to footwear design; LFSC & BIOE NIH Seed Program, University of Maryland; Period: 1/25/07-5/30/07; \$75,000; Not Funded.
9. **Shim JK** (Co-PI) and Lim YT (PI), Identification of critical kinematic, kinetic, and electromyographic parameters for an optimum golf swing performance pattern using multidimensional analysis, Korea Research Foundation (R01); Period: 4/1/06-3/31/09; \$350,000; Not Funded.
10. **Shim JK** (PI), CNS control to multi-digit manipulation at the cortical level; Packard Foundation Fellowship; Period: 1/1/08-12/31/13; \$300,000; Not Funded.
11. **Shim JK** (PI), NIH Seed Grant; Period: Initiation of Amputee Running Studies 1/1/09-12/31/09; \$75,000; Not Funded.
12. **Shim JK** (Co-PI) and Jeka JJ (PI), NIH Seed Grant; Center for Independent Living (CIL) Establishment; Period: 1/1/09-12/31/09; \$75,000; Not Funded.
13. **Shim JK** (Co-PI) and Hurley B (PI), Strength training to improve function in African Americans with osteoarthritis; National Institutes of Health (R21); Period: 7/1/07-6/30/09; \$270,000; Not Funded.
14. **Shim JK** (PI) Howard Hue Medical Institute (HHMI) Early Career Award; Period: 2009-2015; \$400,000; Not Funded. 2009
15. **Shim JK** (PI) and Harlett M (PI), Pathophysiology of handwriting disorders evaluated with a 6-D Kinetic Pen; National Institutes of Health (Bench-To-Bedside Program); **\$300,000; Not Funded.** 2010

16. **Shim JK** (PI), Biomechanics of Amputee Running; National Institute of Disability and Rehabilitation Research; **\$600,000**; Not Funded. 2011
17. **Shim JK** (Co-PI) and Akin DL (PI), Quantifying Physiological Costs of Lunar and Mars Exploration Tasks; National Aeronautics and Space Administration (NASA); **\$400,000**; Not Funded. 2012
18. **Shim JK** (PI), Improving runner's health through systematic evaluation of shoe design parameters (R21); **\$400,000**; Not Funded. 2012
19. **Shim JK** (Co-PI) and Akin DL (PI), CPS: Synergy: Collaborative Research: Monitoring Assembly and Assisting with Action Correction (MONA LISA), National Science Foundation; **\$700,000**; Not Funded. 2013
20. **Shim JK** (PI), Innovative Methods to Remove Harmful Vibration in Running Specific Prostheses, Department of Defense; **\$809,143**; Not Funded. 2013
21. **Shim JK** (Co-PI), Portable Hybrid-Powered Arm Exoskeleton for Strength Augmentation and Rehabilitation, National Science Foundation; **\$900,538**; Not Funded. 2013
22. Miller RH (PI), **Shim JK** (PI), Joint loading, cartilage integrity, and knee osteoarthritis risk in Service Members with amputations at a range of years post-surgery, Department of Defense; **\$482,131**; Not Funded. 2013.
23. Miller RH (PI), **Shim JK** (PI), Biomechanics of osteoarthritis, National Institute of Health; **\$250,000**; Not Funded. 2014.
24. **Shim JK** (PI), Motor Control in Piano Playing, Brain Behavior Institute (BBI), University of Maryland College Park; **\$50,000**; 2015
25. **Shim JK** (PI), Inter-personal Motor Synergy, Brain Behavior Institute (BBI), University of Maryland College Park; **\$50,000**; Not Funded. 2015
26. **Shim JK** (PI), Evaluation of biomechanical and physiological responses to running prosthesis with and without a heel, Department of Defense; **\$500,000**; Not Funded. 2015.
27. **Shim JK** (PI), Stroke hand rehabilitation, National Rehabilitation Center (NRC) R01; **\$100,000**; Not Funded. 2015
28. **Shim JK** (PI), Development of assessment equipment on neurological rehabilitation of hand and wrist for stroke patients, Korea Research Foundation; **\$680,00**; Not Funded. 2016.
29. **Shim JK** (PI), Developing an evaluation tool toward the optimal lower extremity prosthesis prescription, Department of Defense CDMRP; **\$1,284,613**; Not Funded. 2016.
30. **Shim JK** (PI), Development of assessment equipment for fine motor skill for hand dexterity in children with developmental coordination disorder and evidence-based intervention for their hand dexterity improvement; **\$600,000**; Not Funded. 2016.
31. **Shim JK** (PI), Amputee locomotion: role of common prosthesis in physical function and health of lower-extremity amputees, National Institute of Health R01; **\$1,841,563**; Not Funded. 2016.
32. **Shim JK** (PI), Development of assessment equipment on neurological rehabilitation of hand and wrist for stroke patients, Korea Research Foundation; **\$680,00**; Not Funded. 2016.
33. **Shim JK** (PI), Amputee locomotion: role of common prosthesis in physical function and health of lower-extremity amputees, National Institute of Health R01; **\$2,071,601**. Not Funded. 2016
34. **Shim JK** (PI), Musicians' health: biomechanics of guitar playing, Grammy Foundation; **\$40,000**. Not Funded. 2017
35. **Shim JK** (PI), Motor control theory based investigation into the role of sensory modalities on motor performance, National Research Foundation of Korea; Period: 11/01/2017-10/31/2018; **\$275,000**; Not Funded. 2017.
36. **Shim JK** (PI), Optimal Prescription of Common Types of Lower Extremity Prosthesis through Patient-Oriented Evidence that Matters (POEM), Department of Defense CDMRP; Period: 09/01/2018-08/31/2021; **\$1,896,260** (direct: \$1,282,580); Not Funded. 2018. **[received scores of "Excellence" category]**
- 37.

Gifts

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

9. HONORS, AWARDS, AND RECOGNITION

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

10. PROFESSIONAL SERVICE

Editorship

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

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

Conference Abstract/Proceeding Review

- 2008 *American Society of Biomechanics Annual Meeting*
- 2009 *American Society of Biomechanics Annual Meeting*
- 2010 *American Society of Biomechanics Annual Meeting*
- 2011 *American College of Sports Medicine*
- 2011 *International Society of Biomechanics Congress*
- 2012 *American College of Sports Medicine*
- 2013 *American College of Sports Medicine*
- 2014 *American Society of Biomechanics Annual Meeting*
American College of Sports Medicine
- 2015 *American Society of Biomechanics Annual Meeting*
American College of Sports Medicine
- 2016 *American Society of Biomechanics Annual Meeting*
American College of Sports Medicine
- 2017 *American Society of Biomechanics Annual Meeting*

Book Review

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

Conference Organization

- 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.

Professional Society Activities and Other Activities

- 2007 – 2014 **Liaison Officer**
International Society of Biomechanics (ISB)
- 2008 **Vice Chair of Scientific Committee**
International Society of Biomechanics in Sports (ISBS)
- 2009 **Session Chair**
Motor Control Session, 2009 ASB Annual Conference, State College, PA, USA
- 2010 **Session Chair**
Neuromechanics and Rehabilitation Session, 2010 Southern Bioengineering Conference, College Park, MD, USA
- 2012 **Session Chair**
Normal Hand Function Session, Brussels Hand/Upper Limb International Symposium: Advances in prosthetics and surgical reconstructions for hand/upper extremity amputees, Brussels, Belgium, January 27-28, 2012.
- 2010 – present **Award Committee**
American Society of Biomechanics

- 2010 – present **Review Committee**
American Society of Biomechanics

Extramural Grant Review

- 2011 **Discovery Grant proposal reviewer**
Natural Sciences and Engineering Research Council of Canada (NSERC)
- 2012 **Discovery Grant proposal reviewer**
Natural Sciences and Engineering Research Council of Canada (NSERC)
- 2013 **Discovery Grant proposal reviewer**
Natural Sciences and Engineering Research Council of Canada (NSERC)

11. PROFESSIONAL MEMBERSHIPS

- 1999 – present International Society of Biomechanics (ISB)
- 1999 – present American Society of Biomechanics (ASB)
- 2000 – present Korean Society of Sport Biomechanics (KSSB)
- 2003 – present International Society of Motor Control (ISMC)
- 2008 – 2009 International Society of Biomechanics in Sports (ISBS)

12. TEACHING & MENTORING

- 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

13. ADVISING AND MENTORING

High School Student Research Advising

- Reni Bello Fall 2007 – Spring 2006, Eleanor Roosevelt High School, MD
Graduate of University of Maryland, College Park
- Kamal Knight Fall 2007 – Spring 2006, Eleanor Roosevelt High School, MD
Graduate of University of Maryland, College Park
- Chris Heo Spring 2009, Thomas Jefferson High School for Science and Technology, VA
Graduate of Brown University (Neuroscience)
- Grace Kim Fall 2009, Eleanor Roosevelt High School, MD
MBA student at UMUC
- Max Lee Summer 2010, Hillsborough High School, NJ
Medical student in University of Chicago
- Matthew Moon Summer 2010, Wooton High School, MD
Graduate of University of Maryland, College Park
- Siyeon Kim Summer 2011, Wooton High School, MD
Graduate of University of Maryland, College Park
Currently a graduate student at a dental school
- Diana Oh Summer 2018, Revier Hill High School, MD
- Alexander Oh Summer 2018, Revier Hill High School, MD

Undergraduate Student Research Advising

- 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

- Bemnet Abebe
 - Erica Wentz
 - Gary Toussaint
 - Jeff Hsu
 - Alexander Hooke
 - Sung-Jin Sunwoo
 - Jennifer Aidikoff
 - Tracey Epstein
 - Albert Lee
 - Chukwuka Onyewu
 - William Kool
 - David Bates
 - Kimberly Ziegler
 - Daniel Halayko
 - Lisa Fox
 - Allison Zetts
 - Ben Shefter
 - James Ritchie
 - Eliza Reynolds
 - Hilary Hoffman
 - Maya Mudambi
 - Kyle Bruin
 - Melanie Schultz
 - Collen Gulick
- Currently at US Health and Human Services (HHS).
Fall 2005 – Spring 2006, URA, Major in Biology
 - Fall 2005 – Spring 2006, URA, Major in Physiology and Neurobiology
 - Fall 2005 – Spring 2006, URA, Major in Electrical Engineering & Kinesiology
 - 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
 - Fall 2005 - Spring 2006, URA, Major in Physics,
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.
 - Spring 2007 – Fall 2007, URA, Major in Bioengineering
 - 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.
 - Winter 2007 – Spring 2008, URA, Major in Kinesiology
 - Spring 2007 – Spring 2008, URA, Major in Kinesiology
 - Spring 2008 – Spring 2008, URA, Major in Kinesiology
 - Thesis title: Effects of spacesuit gloves and a depressurized environment on motor control performance.
 - Fall 2007 – Spring 2009, URA, Major in Kinesiology
 - **Howard Hughes Medical Institutes (HHMI) Undergraduate Research Award** (\$7,500)
 - 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.
 - Fall 2008 – Spring 2009, URA, Major in Kinesiology
 - 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
 - Spring 2010 – Spring 2011, Major in Kinesiology
 - Fall 2010 – Spring 2011, URA, Major in Kinesiology
 - Fall 2010 – Spring 2011, URA, Major in Kinesiology
 - Fall 2010 – Spring 2011, URA, Major in Bioengineering
 - Fall 2010 – Spring 2011, URA, Major in Bioengineering
 - Fall 2010 – Spring 2011, URA, Major in Kinesiology
 - Fall 2011 – Spring 2012, Major in Kinesiology
 - 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")
 - 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 Domalalpally 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
 - **Fraley 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 – Current, 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 – Current, URA, Major in Mechanical Engineering
- Tim Crane Spring 2018 – Current, URA, Major in Kinesiology
- Rebecca Vaudreuil Spring 2018 – Current, URA, Major in Kinesiology
- Aida Kebede Fall 2018 – Current, URA, Major in Bioengineering
- Amanda Poulakowski Fall 2018 – Current, URA, Major in Kinesiology
- Melissa Hewitt Spring 2019 – Current, URA, Major in Kinesiology

Graduate Student Advising

Previous Masters Students

- 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

- Kelsey Christensen
 - Currently PhD Student at Neuromechanics Research Core at UMD
 - Fall 2014 – 2016 Fall, Kinesiology (Thesis title: “The Organization of Motor Synergies in Joint and Individual Multi-Finger Force Production Tasks”)

Current Masters Students

- 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
 - Public Health Research Day Best Poster Award, 2015
 - Currently PhD student at University of California, Davis
- Liz Bell
 - Spring 2016 – 2018, 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
- Sarah Honarvar
 - Spring 2017 – Current, Kinesiology
- Hyunji Lee
 - Spring 2018 – Current, Mechanical Engineering, Kyung Hee University

Previous Ph.D. Students

- Jaebum Park, PhD
 - Fall 2005 – Fall 2009, Ph.D. Student, Kinesiology 2008
 - Thesis title: “Multi-finger Prehension in Humans”
 - ISB Student Travel Grant Award (\$1,000), 2007
 - Jacob K. Goldharber Travel Grant (\$1,500), 2007
 - Graduate Research Initiative Project Award (\$2,400), 2008
 - Ann G. Wylie Dissertation Fellowship (\$10,000), 2009
 - Previously Tenure-track Assistant Professor at Montana State University
 - Currently Associate Professor at Seoul National University, Korea
- Junfeng Huang, PhD
 - Fall 2005 – Spring 2012, Neuroscience and Cognitive Science
 - Thesis title: “Multi-digit manipulation of a circular object”
 - David E. Clarke Ph.D. Fellowship, 2005
 - Currently Software Engineer at NET Esolutions, Washington D.C.
- Sohit Karol, PhD
 - Fall 2008 – Spring 2012, Kinesiology
 - Thesis title: “Sensory feedback modulates maximum voluntary force in multi-finger pressing”
 - ISB Student Travel Grant Award (\$1,000), 2007
 - Distinguished Teaching Assistant Award, 2010
 - Graduate Research Initiative Project Award (\$2,400), 2007
 - Previously at Research Associate (Liberty-Harvard Fellowship) at Harvard University
 - Currently Research Scientist at Microsoft Windows Laboratory
- Brian Baum, PhD
 - Fall 2006 – Spring 2012, Kinesiology
 - Thesis title: “Kinetics in individuals with unilateral transtibial amputations using running-specific prostheses”
 - Graduate Research Initiative Project Award (\$2,400), 2010
 - Graduate Student Summer Research Fellowship (\$5,000), 2010
 - Ann G. Wylie Dissertation Fellowship (\$10,000), 2011
 - Distinguished Teaching Assistant Award from KNES, 2011
 - Previously Research Program Manager, Department of Defense
 - Currently Tenure-track Assistant Professor at Regis University, Colorado
- 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

Current Ph.D. Students

- 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 – current, 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

Postdoctoral Mentorship

Previous Post-doctoral Researchers

- 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 Postdocotral 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 Postdocotral 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 Univeristy, 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

- Kyung Koh, PhD
 - Currently Faculty Artist, Guitar Ensemble Director at the Peabody Institute
Fall 2016 – Fall 2017, Kinesiology
- Yushin Kim, PhD
 - Currently Research Associate at University of Maryland Baltimore Medical School
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

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
- Ross Miller, PhD
 - Fall 2012 – current, Assistant Professor, Kinesiology, UMD
 - **ISB Promising Young Scientist Award (honorary)**
- Hyunjoon Kwon, PhD
 - Fall 2014 – current, Assistant Research Professor, Kinesiology, UMD

Other Research Scientist Mentorship

Post-Masters

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

International Exchange Student Mentorship

- Yong Hyun Park
 - Fall 2008, Biomechanics, Seoul National University
- Minjoo Kim
 - Fall 2009 – Summer 2010, Seoul National University
- Dawon Park
 - Fall 2014, Hanyang University

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

14. UNIVERSITY 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
Burrus 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
 - Burrus 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)

School

- 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

University

- 2007-2008
 - University of Maryland iTuneU Committee
 - 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

Other Programs

- 2006-2007
 - Bioengineering Graduate Program Steering Committee
- 2007-2008
 - Bioengineering Graduate Program Steering Committee
 - Neuroscience and Cognitive Science (NACS) Executive Committee, **Elected**
- 2008-2009
 - Bioengineering Graduate Program Steering Committee
 - Neuroscience and Cognitive Science (NACS) Executive Committee
- 2009-2010
 - Bioengineering Graduate Program Steering Committee
- 2010-2011
 - Bioengineering Graduate Program Steering Committee

15. COMMUNITY 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**