

MEI-HUA LEE, PH.D.

Assistant Professor
Department of Kinesiology
Michigan State University

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EDUCATION

Ph.D Kinesiology, The Pennsylvania State University	2005-2011
M.E. Physical Education, National Taiwan Normal University	2002-2005
B.E. Physical Education, National Taiwan Normal University	1998-2002

PROFESSIONAL EXPERIENCE

Assistant Professor, Department of Kinesiology Michigan State University	2014-
Postdoctoral Fellow, Sensory Motor Performance Program Rehabilitation Institute of Chicago	2012-2013
Postdoctoral Fellow, Department of Psychology, New York University	2011-2012

JOURNAL PUBLICATIONS

Peer Reviewed Journal Articles

1. *Patel, P., Shi, Y., Hajiaghajani, F., Biswas, S., **Lee, M-H.** (in press). A novel two-body sensor system to study spontaneous movements in infants during caregiver physical contact. *Infant Behavior and Development*.
2. **Lee, M-H.** (in press). Online and offline contributions to motor learning change with practice, but are similar across development. *Experimental Brain Research*.
3. **Lee, M-H** & Ranganathan, R. (2019). Age-related deficits in motor learning are associated with altered motor exploration strategies. *Neuroscience*, 412, 40-47.

4. Ranganathan, R., **Lee, M-H.**, Padmanabhan, M.R., Aspelund, S., Kagerer, F., Mukherjee, R. (2019). Age-dependent differences in learning to control a robot arm using a body-machine interface. *Scientific Reports*, 9.
5. **Lee, M-H.**, Farshchiansadegh, A., & Ranganathan, R. (2018). Children show limited movement repertoire when learning a novel motor skill. *Developmental Science*, 21, e12614.
6. Abdollahi, F., Farshchiansadegh, A., Pierella, C., Gonzalez, I.S, Thorp, E.B, **Lee, M-H.**, Ranganathan, R., Pedersen, J.P., Chen, David., Roth, E. J., Casadio, M., & Mussa-Ivaldi, F.A., (2017). Body-Machine Interface enables people with chronic Spinal Cord Injury to take control with their available body movements. A proof of concept study. *Neurorehabilitation & Neural Repair*, 31, 487-493.
7. Comalli, D. M., Keen, R, Abraham, E., Foo, V., **Lee, M-H.**, & Adolph, K.E. (2016). The development of tool use: Planning for end-state comfort. *Developmental Psychology*, 52, 1878-1892.
8. **Lee, M-H.**, Ranganathan, R., Kagerer, F., & Mukherjee, R. (2016). Body-machine interface for control of a screen cursor for a child with congenital absence of upper and lower limbs: A case report. *Journal of NeuroEngineering and Rehabilitation*, 13, 34.
9. Thorp, E.B, Abdollahi, F, Chen, D, Farshchiansadegh, A, **Lee, M-H.**, Pedersen, J.P., Pierella, C., Roth, E. J., Gonzalez, I.S., & Mussa-Ivaldi, F.A. (2015). Upper body-based power wheelchair control interface for individuals with Tetraplegia. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 24, 249-260.
10. Keen, R, **Lee, M-H.**, & Adolph, K. E. (2014). Planning an action: A developmental progression in tool use. *Ecological Psychology*, 26, 98-108.
11. **Lee, M-H.**, & Newell, K. M. (2013). Contingent Auditory feedback of arm movement facilitates reaching behavior in infancy. *Infant Behavior and Development*, 36, 817-824.
12. **Lee, M-H.**, & Newell, K. M. (2012). Visual feedback of hand trajectory and the development of infant prehension. *Infant Behavior and Development*, 35, 273-279.
13. Ranganathan, R., **Lee, M-H.**, Brown, A. J., & Newell, K. M. (2011). Grasping possibilities for action: Influence of object function and action capabilities. *Human Movement Science*, 30, 1102-1114.

14. **Lee, M-H.**, Ranganathan, R., & Newell, K. M. (2011). Changes in object-oriented arm movements that precede the transition to goal-directed reaching in infancy. *Developmental Psychobiology*, 53, 685-693.
15. **Lee, M-H.**, Bodfish, J. W., Lewis, M. H., & Newell K. M. (2010). Low dimensional temporal organization of spontaneous eye blinks in adults with developmental disabilities and stereotyped movement disorder. *Research in Developmental Disabilities*, 31, 250-255.
16. Hong, S.L., **Lee, M-H.**, & Newell, K.M. (2007). Magnitude and structure of force variability: Mechanical and neurophysiological influences. *Motor Control*, 11, 119-135.
17. **Lee, M-H.**, Liu, Y-T., & Newell, K.M. (2006). Longitudinal expressions of infants' prehension as a function of object properties. *Infant Behavior and Development*, 29, 481-493.

Peer Reviewed Conference Publications

18. Chau, S., Aspelund, S., Mukherjee, R., **Lee, M-H.**, Ranganathan, R., Kagerer, F. (2017). A five degree-of-freedom body-machine interface for children with severe motor impairments. *Intelligent Robots and Systems (IROS)*, 3877-3882.
19. Thorp, E.B., Abdollahi, F., Chen, D., Farshchiansadegh, A., **Lee, M-H.**, Pedersen, J., Pierella, C., Roth, E. J., & Mussa-Ivaldi, F.A. (2014). Using upper body motions to control power wheelchairs for individuals with tetraplegia. *IROS 2014 Workshop on Rehabilitation and Assistive Robotics: Bridging the gap between clinicians and roboticists*.
20. Farshchiansadegh, A., Abdollahi, F., Chen, D., **Lee, M-H.**, Pedersen, J., Pierella, C., Seanez-Gonzalez, I., Thorp, E. B., & Mussa-Ivaldi, F. A. (2014). A body machine interface based on inertial sensors. *Conference Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, 6120-6124.

GRANTS

- 2018 - 2023 National Institutes of Health. *PLAY (Play and Learning Across a Year)*. Karen Adolph, PI. **Sub-award** to Mei-Hua Lee, \$18,527.
- 2017 - 2020 National Science Foundation. *Motor exploration and motor learning during child development*. Role: **PI** (Other PI: Ferdinando Mussa-Ivaldi). Total Costs: \$349,106.

- 2017 - 2020 National Science Foundation. *A High Degree-of-Freedom Body-Machine Interface for Children with Severe Motor Impairments*. Role: **Co-PI** (PI: Ranjan Mukherjee; Other Co-PIs: Rajiv Ranganathan, Florian Kagerer). Total Costs: \$379,925.
- 2016 - 2018 Research in Autism, Intellectual and Neurodevelopmental Disabilities(RAIND) initiative. *Spontaneous Movements During Care-giver Contact as an Early Window into ASD*. Role: **PI** (Other PI: Subir Biswas). Total Costs: \$50,000.
- 2014 - 2016 Office of Vice-President for Research and Graduate Studies, Michigan State University. *Body-machine interface for children with severe motor impairments*. Role: **PI** (Other PIs: Ranjan Mukherjee, Rajiv Ranganathan, Florian Kagerer). Total Costs: \$88,000.

INVITED TALKS

1. **Lee, M-H.** (2014). Motor Development Program- American Standard of Physical Education Model and Content. Society for Sport and Exercise Psychology of Taiwan, Taipei. Taiwan.
2. **Lee, M-H.** (2014). Innovative tools to understand motor development. Society for Sport and Exercise Psychology of Taiwan, Taipei. Taiwan.
3. **Lee, M-H.** (2014). Development of Reaching Movements in Infancy. Human-Development Initiative Group. Michigan State University, MI.
4. **Lee, M-H.** (2013). Body-Machine Interfaces for Controlling Assistive Devices and Promoting Motor Recovery. Rehabilitation Institute of Chicago, IL.
5. **Lee, M-H.** (2013). Development of Reaching Movements in Infancy. National Taiwan Normal University. College of Sports and Recreation, Taipei. Taiwan.

CONFERENCE PRESENTATIONS

1. *Patel, P., Myers, N & **Lee, M-H.** (2019). Missing data practices: a systematic review in motor learning and development. North American Society for the Psychology of Sport and Physical Activity (NASPSPA), Baltimore, MD.
2. Ranganathan, R., Lin, M., Carey, S., Lokesh, R., **Lee, M-H.**, Krishnan, C. Does motor variability predict individual differences in learning a redundant skill learning task? Neural Control of Movement (NCM), Toyama, Japan.
3. *Patel, P., & **Lee, M-H.** (2018). Motor exploration in children and adults when learning a novel motor task. Neural Control of Movement (NCM), Santa Fe, NM.
4. *Patel, P., Hajiaghajani, F., Biswas, S & **Lee, M-H.** (2018). Effect of caregiver physical interaction on characteristics of spontaneous movements in infants. North American Society for the Psychology of Sport and Physical Activity (NASPSPA), Denver, CO.
5. *Padmanabhan, M., Aspelund, S., Ranganathan, R., Kagerer, F., Mukherjee, R., **Lee, M-H.** (2017). Age-Related differences in controlling a robot arm. Society for Neuroscience, Washington, DC.
6. *Patel, P., Padmanabhan, M., Hajiaghajani, F., Biswas, S & **Lee, M-H.** (2017). Spontaneous Movements during Caregiver Contact as an Early Window into ASD. North American Society for the Psychology of Sport and Physical Activity (NASPSPA), San Deigo, CA.
7. **Lee, M-H.** (2016). Differences in motor skill learning across lifespan. Society for Neuroscience, San Deigo, CA.
8. *Padmanabhan, M., **Lee, M-H.** (2016). Age differences in movement coordination are dependent on task difficulty. North American Society for the Psychology of Sport and Physical Activity (NASPSPA), Montreal, QC, Canada.
9. **Lee, M-H.**, Farshchiansadegh, A. (2015). Differences in motor skill learning across lifespan. Society for Neuroscience, Chicago, IL.
10. **Lee, M-H.**, Farshchiansadegh, A. (2015). Age differences in movement coordination when learning a novel virtual task. NASPSPA, Portland, OR.
11. **Lee, M-H.**, Farshchiansadegh, A. (2014). Age related effects on motor learning when using a novel body-machine interface. Society for Neuroscience, Washington, DC.
12. **Lee, M-H.**, Farshchiansadegh, A. (2014). The Use of Body-Machine Interfaces to Examine Developmental Change in Motor Skill Acquisition. American Society of Neurorehabilitation, Washington, DC.
13. *Bizzigotti, E., Cusmano, A., Farshchiansadegh A & **Lee, M-H.** (2014). The use of body-machine interfaces to examine developmental change in motor learning. NAFAPA, Ann Arbor, MI.
14. **Lee, M-H.**, & Farshchiansadegh, A (2014). Self-controlled Practice Schedules for Learning Body Machine Interfaces. NASPSPA, Minneapolis, MN.

15. **Lee, M-H.**, Farshchiansadegh Ali., & Ranganathan Rajiv (2013). Designing practice schedules to optimize motor learning in body-machine interfaces. Society for Neuroscience, San Diego, CA.
16. **Lee, M-H.**, & Newell, K.M. (2011). Influence of auditory feedback on the development of reaching in infancy. NASPSPA, Burlington, VT.
17. **Lee, M-H.**, & Newell, K.M. (2010). Development of prehension movement in infancy. Society for Neuroscience, San Diego, CA.
18. **Lee, M-H.**, & Newell, K.M. (2010). The transition of infant spontaneous arm movements to goal-directed reaching. NASPSPA, Tucson, AZ.
19. **Lee, M-H.**, & Newell, K.M. (2009). Variability in the development of prehension in infancy. Canadian Society for Psychomotor Learning and Sport Psychology (SCAPPS), Toronto, Canada.
20. **Lee, M-H.**, & Newell, K.M. (2009). Longitudinal expressions of infants' prehension as a function of task goal. Society for Neuroscience, Chicago, IL.
21. **Lee, M-H.**, & Newell, K.M. (2009). Visual information and the transition from spontaneous movements to goal directed reaching in infants. NASPSPA, Austin, TX.
22. **Lee, M-H.**, & Newell, K.M. (2009). The development of visually guided prehension during infancy. Society for Research in Child Development Biennial Meeting, Denver, CO.
23. **Lee, M-H.**, & Newell, K.M. (2008). Characteristics of the transition from spontaneous to reaching movements in infancy. 2nd International Congress of Complex Systems in Sport (2nd ICCSS) & 10th European Workshop of Ecological Psychology, Madeira, Portugal.
24. **Lee, M-H.**, & Newell, K.M. (2008). The development of visually guided reaching during infancy. NASPSPA, Niagara Falls, Canada.
25. **Lee, M-H.**, & Newell, K.M. (2008). Organization of natural eye blinks and dopaminergic function. 12th International Congress of Parkinson's Disease and Movement Disorders, Chicago, IL.
26. **Lee, M-H.**, & Newell, K.M. (2007). Low dimensional organization of natural eye blinks in stereotypic movement disorders. Society for Neuroscience, San Diego, CA.
27. **Lee, M-H.**, Hong, S.L., & Newell, K.M. (2006). Complexity tradeoffs in force output across force dimensions in isometric tasks. Society for Neuroscience, Atlanta, GA.
28. **Lee, M-H.**, Liu, Y-T., & Mayer-Kress, G. (2005). On task constraints to infants' prehension behavior. NASPSPA, St. Pete's Beach, FL.

(* indicates student mentored by me)

TEACHING

KIN 251 Principles of Human Movement Michigan State University	Fall 2016 - Fall 2018
KIN 360 Physical Growth and Motor Behavior Michigan State University	Spring 2014 - Spring 2016
KIN 860 Growth and Motor Behavior Michigan State University	Fall 2015, Fall 2017 & Fall 2019

ADVISING

Doctoral Student

Priya Patel, Kinesiology 2016 -

Master Student

Sachin Devnathan, Kinesiology 2017 - 2019

Donatella Simonetti (Visiting student, University of Genoa) 2016

Roberta Manunta (Visiting student, University of Genoa) 2017

Amy Bellitto (Visiting student, University of Genoa) 2018

Undergraduate Students

Autumn Bennett, Kinesiology 2019 -

Stephanie Tran, Kinesiology 2018 -

Logan Ben-Ezra, Kinesiology 2018 -

Jaret Allred, Kinesiology 2018 - 2019

Jenna Borchanian, Kinesiology 2017 - 2019

Timothy Havern, Kinesiology 2017 - 2019

Christian Poelstra, Kinesiology 2017 - 2018

Claire Sickon, Kinesiology 2016 - 2018

Samuel Hoesch, Kinesiology 2016 - 2018

Hannah Moote, Kinesiology 2016 - 2017

Calvin Montgomery, Mechanical Engineering, 2015 - 2017

Professorial Assistantship Program

Madison McLean, Kinesiology 2015 - 2016

Emily Matthews, Chemistry, Professorial Assistantship Program	2014 - 2016
Arielle Farhi, Kinesiology, Professorial Assistantship Program	2014 - 2016
Vinai Reddy, Kinesiology, Professorial Assistantship Program	2015
Danielle Puckett, Kinesiology	2015
Austin Lints, Kinesiology	2015
Brittany Ladson, Human Biology	2015
Emma Bizzigotti, Kinesiology	2013 - 2015
Andrew Cusmano, Kinesiology	2013 - 2015

High School Student

Shreya Mishra	2015 Summer
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PROFESSIONAL AFFILIATIONS

Society for Neuroscience	2005 – Present
North American Society for the Psychology of Sport and Physical Activity	2006 – Present
Society for Research in Child Development	2009 – Present

SERVICE

Journal Reviewing

Frontiers in Human Neuroscience, Gait & Posture, IEEE, IEEE ICORR, IEEE RAS, Journal of Biomechanics, Journal of Experimental Child Psychology, Journal of Physiology, JoVE, Medicine & Science in Sports & Exercise, PLOS ONE, Scientific Reports, Transactions on Neural Systems & Rehabilitation Engineering

Grant Reviewing

National Science Foundation. Ad Hoc Reviewer. Perception, Action, Cognition and Developmental Science

National Institutes of Health. Ad Hoc Reviewer. Biobehavioral and Behavioral Sciences.

Panel & Conference Programs

Childhood Motor Disorders (Initiative of National Institute for Neurological Disorders & Stroke and National Institute for Child Health and Development). Feb 2012

NASPSPA conference, Motor development committee 2018

Department/College Service

Member, Faculty Search Committee, Department of Kinesiology, Michigan State University 2016

Member, Graduate Studies Committee, Department of Kinesiology, Michigan State University 2016-2017

Member, Curriculum and Undergraduate Studies Committee, Department of Kinesiology, Michigan State University 2014-2016

Member, Undergraduate Scholarship Review Committee, College of Education, Michigan State University 2015

Member, University Council & Faculty Senate, College of Education, Michigan State University 2018-

Community Outreach

MSU Science Festival 2014 - current
Grandparents University 2014 - current