

# Katherine L. Hsieh

## CONTACT INFORMATION

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301 Freer Hall  
906 S Goodwin Ave  
Urbana, IL 61801

Phone: 404-862-5059  
Email: klhsieh3@illinois.edu

## EDUCATION

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University of Illinois at Urbana-Champaign 2016-Present

Ph.D., Kinesiology

Dissertation Title: Fall Risk Assessment with Mobile Technology for People with Multiple Sclerosis

*Preliminary Exams Passed: April 18, 2019*

University of Georgia 2011- 2015

B.S., Exercise and Sports Science

Presidential Scholar, Dean's List

## PROFESSIONAL EXPERIENCE

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**MOTOR CONTROL RESEARCH LAB** 2016-Present

Graduate Assistant

University of Illinois at Urbana-Champaign, Champaign, IL

Advisor: Jacob J. Sosnoff, PhD

**MILITARY PERFORMANCE LAB** 2015- 2016

Research Assistant

Center For the Intrepid

Brooke Army Medical Center

Henry M. Jackson Foundation, Fort Sam Houston, TX

**BIOMECHANICS LAB** 2012-2015

Undergraduate Research Assistant

University of Georgia, Athens, GA

Advisor: Cathleen Brown Crowell, PhD

*Thesis: Ankle Anterior Drawer Laxity and Stiffness via the LigMaster Arthrometer*

## SCHOLARY ACTIVITY

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### PUBLICATIONS

*In Review*

1. **Hsieh K.L.**, Sun R., & Sosnoff J.J. Usability of Self-Guided Mixed Reality Fall Risk Assessment for Older Adults. *Gerontechnology*. Submitted 10/7/2019.

*In Press*

1. Tablerion J.M., Wood T.A., **Hsieh K.L.**, Bishnoi A., Sun R., Hernandez M., An R., & Sosnoff J.J. Motor Learning in People with Multiple Sclerosis: A Systematic Review and Meta-Analysis. *Archives of Physical Medicine and Rehabilitation*.

*Accepted*

1. Sun R., **Hsieh K.L.**, & Sosnoff, J. J. (2019). Fall Risk Prediction in Multiple Sclerosis Using Postural Sway Measures: A Machine Learning Approach. *Scientific Reports*, 9(1), 1-7.
2. **Hsieh K.L.**, Trinh L., & Sosnoff J.J. (2019). Gait Variability is Altered in Cancer Survivors with Self-Reported Neuropathy. *Gait & Posture*. 72, 206-210.
3. **Hsieh K.L.**, Fanning J.T., & Sosnoff J.J. (2019). A Smartphone Application is Valid and Reliable in Older Adults during Real World Testing. *Gerontechnology*. 18(1), 29-35.
4. **Hsieh K.L.**, Wood T.A., An R., Trinh L., & Sosnoff J.J. (2019). Gait and Balance Impairments in Breast Cancer Survivors: A Systematic Review and Meta-analysis of Observational Studies. *Archives of Clinical Translation and Rehabilitation*. doi.org/10.1016/j.arrct.2018.12.001.
5. Wood, T.A., **Hsieh, K.L.**, An R., Ballard R.A., Sosnoff J.J. (2019) Balance and Gait Alternations Observed More than 2 Weeks after Concussion: A Systematic Review and Meta-analysis. *American Journal of Physical Medicine Rehabilitation*. 98(7), 566-576.
6. **Hsieh K.L.**, Roach K.L., Wajda D.A., & Sosnoff J.J. (2019). Smartphone Technology Can Measure Postural Stability and Distinguish Fall Risk in Older Adults. *Gait & Posture*, 67, 160-165.
7. **Hsieh K.L.**, Moon Y., Ramkrishnan V., Ratnam R., & Sosnoff J.J. (2019) Validating Virtual Time to Contact with Home Based Technology in Young and Older Adults. *Journal of Applied Biomechanics*. 35(1), 61-67.
8. **Hsieh K.L.**, Fanning J.T., Rogers W.A., Wood T.A., & Sosnoff, J.J. (2018). A Fall Risk mHealth App for Older Adults: Development and Usability Study. *JMIR Aging*, 1(2), e11569.
9. **Hsieh, K.L.**, Sheehan, R.C., Wilken, J.M., & Dingwell, J.B. (2018). Healthy individuals are more maneuverable when walking slower while navigating a virtual obstacle course. *Gait & Posture*, 61, 466-472.

10. **Hsieh, K.L.**, Sun, R., & Sosnoff, J. J. (2017). Cognition is associated with gait variability in individuals with multiple sclerosis. *Journal of Neural Transmission*, 124(12), 1503-1508.
11. Roeing, K.L., **Hsieh, K.L.**, & Sosnoff, J. J. (2017). A systematic review of balance and fall risk assessments with mobile phone technology. *Archives of gerontology and geriatrics*, 73, 222-226.
12. Brown, C. N., Ko, J., Rosen, A. B., & **Hsieh, K.L.** (2015). Individuals with both perceived ankle instability and mechanical laxity demonstrate dynamic postural stability deficits. *Clinical Biomechanics*, 30(10), 1170-1174.

#### CONFERENCE PRESENTATIONS

\*denotes presenting poster, †denotes presenting talk

1. †**Hsieh K.L.**, Griffin A., Sun R., & Sosnoff J.J. Using Technology for Fall Risk Assessment in Older Adults. *American Congress of Rehabilitation Medicine*. Chicago, IL.
2. †**Hsieh K.L.**, Trinh L., & Sosnoff J.J. Gait Variability is Altered in Cancer Survivors with Neuropathy (2019). *International/American Society of Biomechanics*. Calgary, Alberta, CA.
3. Tablerion J.M., Wood T.A., **Hsieh K.L.**, Bishnoi A., Sun R., Hernamdez M., An R., & Sosnoff J.J. (2019). Motor Learning in People with Multiple Sclerosis: A Systematic Review and Meta-Analysis. *Consortium of Multiple Sclerosis Centers*. Seattle, WA.
4. †**Hsieh K.L.**, Mejia S.T., Fanning J.T., & Sosnoff J.J. (2019). Functional Mobility Variability in an Older Adult Over 30 Days. *Midwest American Society of Biomechanics*. Dayton, Ohio.
5. Frechette M.L., **Hsieh K.L.**, & Sosnoff J.J. (2019). Preliminary Examination of Smartphone-Based Fall Risk Assessment in Individuals with Multiple Sclerosis. *Midwest American Society of Biomechanics*. Dayton, Ohio.
6. \***Hsieh K.L.**, Roach K.L., Wajda D.A., & Sosnoff J.J. (2018). Smartphone Technology Can Measure Postural Stability and Distinguish Fall Risk in Older Adults. *American Society of Biomechanics*. Rochester, MN.
7. \***Hsieh K.L.**, Trinh L., & Sosnoff J.J. (2018). The Romberg Test in Cancer Survivors with Neuropathy. *Progress in Clinical Motor Control*. State College, PA.
8. †Sun R., **Hsieh K.L.**, Mussad S., & Sosnoff J.J. (2018). Assessment of Postural Control in Multiple Sclerosis: Identification of Core Outcome Variables. *Rehabilitation in Multiple Sclerosis*. Amsterdam, Netherlands.

9. Wood T.A., **Hsieh K.L.**, Ballard R.A., An R., & Sosnoff J.J. (2018) A meta-analysis examining objective balance and gait measures following concussion symptom resolution. *Great Lakes Athletic Trainers Association Annual Meeting*, Wheeling, IL.
10. \***Hsieh K.L.**, Wood T.A., McDonagh D., Fanning J., Wajda D.A., & Sosnoff J.J. (2017). Usability of a Fall Risk Mobile Health Application in Older Adults. *Collaborations in Health, Aging, Research, and Technology*. Champaign, IL.
11. \***Hsieh K.L.** and Sosnoff J.J. (2017). Gait Variability is Associated with Reduced Cognitive Function in Individuals with Multiple Sclerosis. *American Congress of Rehabilitative Medicine*. Atlanta, GA.
12. \***Hsieh K.L.**, Moon Y., Ramkrishnan V., Ratman R., & Sosnoff J.J. (2017). Validating Virtual Time to Contact with Home-Based Technology. *International Society of Posture and Gait Research*. Fort Lauderdale, FL.
13. †**Hsieh K.L.**, Sheehan R.C., Ruble M.D., Dingwell J.B., & Wilken J.M. (2016). Individuals with Lower Limb Trauma Prioritize Stability over Maneuverability When Navigating a Virtual Obstacle Course. *Omer Day*. San Antonio, TX.
14. Samson C.O., **Hsieh K.L.**, & Brown C.N. (2015) Lateral ankle complex response to repeated mechanical laxity assessment. *International Ankle Symposium*. Dublin, Ireland.
15. Brown C.N., Samson C.O., **Hsieh K.L.**, & Ko J. (2015). Lateral Ankle Joint Complex Stiffness in Those with Chronic Ankle Instability. *International Ankle Symposium*. Dublin, Ireland.
16. \***Hsieh K.L.**, Ko J., Samson C.O., & Brown C.N. (2015). Functional Performance Test and BMI Scores in Adolescent Athletes with Chronic Ankle Instability. *Southeast Chapter American College of Sports Medicine*. Jacksonville, FL.
17. \***Hsieh K.L.**, Rosen A.B., Leblanc R., Fu Y.U., Simpson K.J., & Brown C.N. (2014). Effect of Patellar Tendon Straps on Knee Joint Moments During a Drop-Jump. *Southeast Chapter American College of Sports Medicine*. Greenville, SC.
18. Hovorka C., **Hsieh K.L.**, & Kogler G. (2014). Motion Control Validation of a Custom Ankle Foot Orthosis. *American Academy of Orthotists and Prosthetists*. Chicago, IL.

#### INVITED TALKS

1. Fall Risk Consequences, Predictors, and Prevention in Older Adults (April 2019). *Brown Bag Seminar for UIUC Medical Students*. Champaign, IL.
2. Fall Prevention in Older Adults: Assessment and Interventions. (April 2019). *Health Alliance*. Champaign, IL.

3. The Role of Mobile Technology for Fall Risk Assessment in Older Adults. (January 2019). *Kinesiology & Community Health Departmental Colloquium*. Champaign, IL.
4. The Science of Falls. (April 2018). *Philanthropic Educational Organization*. Urbana, IL.
5. Tai Chi for Falls Prevention in Older Adults. (November 2017). *Falls: Prevention, Assessment, and Intervention*. Champaign, IL.

## GRANTS

**Hsieh K.L.,** Rogers W.A., & Sosnoff J.J. *Fall Risk Assessment with a Smartphone Application for Older Cancer Survivors*. National Institute of Health (National Cancer Institute). Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship. \$194,892. Unfunded.

## TEACHING EXPERIENCE

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### TEACHING ASSISTANT

KIN 259: Motor Development and Control Fall 2017, Spring 2018, Fall 2018  
 University of Illinois at Urbana-Champaign

UIUC Teachers Ranked as Excellent - KIN 259 Spring 2018, Fall 2018

Certificate in Foundations of Teaching May 2019

## ACQUIRED SKILLS

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### Software:

- Statistics (SPSS)
- Visual 3D Biomechanical Modeling Software
- MATLAB

### Hardware:

- Vicon Nexus Motion Capture
- Cortex Motion Analysis Corporation
- Force Plates (Bertec, AMTI)
- Zeno & GAITRite
- CAREN– Computer Assisted Rehabilitation Environment

## COMMUNITY INVOLVEMENT

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### Manuscript Reviewer:

- Journal of Biomechanics
- Gait and Posture
- Clinical Biomechanics
- PLOS One

### Professional Memberships:

- American Society of Biomechanics

- American Congress of Rehabilitative Medicine
- International Society of Posture and Gait Research

**Search Committee Member:**

- Research Coordinator Position for UIUC
- Visiting Research Specialist Position for UIUC

**Volunteer for National Multiple Sclerosis Society** 2016-Present

**UIUC College of Applied Health Sciences Graduate Student Council** 2019-Present

**HONORS & AWARDS**


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Paul D. Doolen Scholarship for the Study of Aging	2019
UIUC Chittenden Fellow	2019-2020
Progress in Clinical Motor Control Workshop and Travel Award	2018
American Kinesiology Association Undergraduate Scholar	2015