WANG, YIYU

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Email: yw4722@princeton.edu

EDUCATION

Texas A&M University, College Station, TX
Ph.D. (Distinguished Honor Graduate) in Motor Neuroscience 2018 – 2023

Texas A&M University, College Station, TX
Graduate Certificate in Applied Statistics 2018 – 2020

The University of Illinois at Chicago, Chicago, IL
MS in Exercise Physiology 2014 – 2016

Shanghai University of Sport, Shanghai, China
BS in Kinesiology 2010 – 2014

PROFESSIONAL APPOINTMENTS

Post-Doctoral Research Associate
Department of Psychology, Princeton University, Princeton, NJ 2024 –

Post-Doctoral Research Associate
Shirley Ryan AbilityLab/Northwestern University, Chicago, IL 2023 – 2024

Graduate Research Assistant
Texas A&M University, College Station, TX 2018 – 2023

ACADEMIC HONORS, FELLOWSHIPS & AWARDS

Distinguished Honor Graduate
School of Education and Human Development, Texas A&M University 2023

Huffine Travel Grant ($800)
Huffine Institute for Sports Medicine & Human Performance 2021

Travel Scholarship Award (Conference Travel Cost Reimbursement)
North American Society for The Psychology of Sport and Physical Activity 2020

Dean’s Graduate Award ($4000)
School of Education and Human Development, Texas A&M University 2020

Huffine Travel Grant ($800)
Huffine Institute for Sports Medicine & Human Performance 2019

Conference Travel Grant ($500)

School of Education and Human Development, Texas A&M University 2019

Conference Travel Grant ($500)
Office of Graduate and Professional Studies Travel Grant 2019

Huffine Travel Grant ($800)
Huffine Institute for Sports Medicine & Human Performance 2018

Conference Travel Grant ($500)
School of Education and Human Development, Texas A&M University 2018

Graduate College Tuition Deferment Award (Tuition Waiver)
The University of Illinois at Chicago, Chicago, IL 2015 – 2016

Van Doren Scholarship ($250)
The University of Illinois at Chicago, Chicago, IL 2014

RESEARCH GRANT

Huffine Research Grant ($1500)
Huffine Institute for Sports Medicine & Human Performance 2021 – 2022

Graduate Research Grant ($1132)
School of Education and Human Development, Texas A&M University 2019 – 2020

Graduate Research Grant ($840)
School of Education and Human Development, Texas A&M University 2018 – 2019

TEACHING EXPERIENCE AND COMMUNITY SERVICE

Lecture – KINE 689 (Non-Invasive Brain Stimulation)
Texas A&M University, College Station, TX F2022

Graduate Student Workshop for MATLAB Programming
Texas A&M University, College Station, TX S2022

Invited Lecture – KINE 307 (Motor Development)
Texas A&M University, College Station, TX S2019

Physical Education Class Coach
Texas A&M Consolidated High School, College Station, TX F2017

Physical Education Class Coach
College Station Middle School, College Station, TX S2017

PUBLISHED JOURNAL ARTICLES (*First Author; #Co-first Author)

As of October 27, 2024, I have accumulated a total of 341 citations (source: Google Scholar).

1. de Almeida, F. D., **Wang, Y.,** de Mello Pedreiro, R. C., Brizzi, A. C. B., Campos, S. F., Sales, M. P., Kennedy, D. M., & Pinto Neto, O. (2024). Combining transcranial direct current stimulation with exercise to improve mobility, stability, and tremor management in 25 individuals with Parkinson's disease. Neurology International, 16(6). (2023 Impact Factor: 3.2).
   Keywords: Parkinson's disease; tDCS; exercise; grip strength; balance stability; dual task.

2. **Wang, Y*.,** Neto, O. P., Weinrich, M., Abbott, R., Diaz-Artiles, A., & Kennedy, D. M. (2024). The effect of inherent and incidental constraints on bimanual force control in simulated Martian gravity. Human Movement Science, 95, 103199. (2022 Impact Factor: 2.1).
   Keywords: altered gravity**,** bimanual coordination, neural crosstalk, Lissajous displays

3. Bao, S., **Wang, Y#.,** Escalante, Y. R., Li, Y., & Lei, Y. (2024). Modulation of Motor Cortical Inhibition and Facilitation by Touch Sensation from the Glabrous Skin of the Human Hand. Eneuro, 11(3). (2022 Impact factor: 3.4)
   Keywords: finger stimulation, brain stimulation, the glabrous skin, primary motor cortex, primary somatosensory cortex

4. **Wang, Y*.,** Huynh, A. T., Bao, S., Buchanan, J. J., Wright, D. L., & Lei, Y. (2024). Memory consolidation of sequence learning and dynamic adaptation during wakefulness. Cerebral Cortex, bhad507. (2022 Impact factor: 3.7)
   Keywords: memory consolidation, sequence learning, dynamic adaptation, sensorimotor cortex, wakefulness

5. **Wang, Y*.,** Neto, O. P., Weinrich, M. M., Castro, R., Wright, T., & Kennedy, D. M. (2022). The influence of distal and proximal muscle activation on neural crosstalk. Plos one, 17(10), e0275997. (2022 Impact factor: 3.7)
   Keywords: EMG-EMG coherence, rhythmic bimanual force coordination, distal muscle, proximal muscle, crosstalk

6. Hua, R., **Wang, Y.,** Kennedy, D. M., Hubbard, J. E., & Wang, Y. (2022). Toe Tapping Based Falling Risk Evaluation for Patients With Parkinson's Disease Using Monitoring Insoles. IEEE Sensors Letters, 6(6), 1-4. (2022 Impact factor: 2.8)
   Keywords: acceleration, falling risk evaluation, monitoring insole, Parkinson's disease, toe tapping

7. Bao, S., **Wang, Y.,** Wright, D. L., Buchanan, J. J., & Lei, Y. (2022). Differences in motor unit recruitment patterns and low frequency oscillation of discharge rates between unilateral and bilateral isometric muscle contractions. Human Movement Science, 83, 102952. (2022 Impact factor: 2.1)
   Keywords: bimanual contraction, motor unit, surface EMG decomposition, coefficients of variation, first common component, size principle

8. Diaz-Artiles, A., **Wang, Y#.,** Davis, M. M., Abbott, R., Keller, N., & Kennedy, D. M. (2022). The Influence of Altered-Gravity on Bimanual Coordination: Retention and Transfer. Frontiers in Physiology, 2378. (2022 Impact factor: 4.0)
   Keywords: tilt paradigm, simulated microgravity, force control, Lissajous displays, motor learning

9. Davis, M. M., **Wang, Y#.,** Bao, S., Buchanan, J., Wright., D. L., Lei, Y. (2021) The interaction between primary somatosensory and motor cortex during human grasping behaviors. Neuroscience. (2022 Impact factor: 3.3)
   Keywords: somatosensory cortex, motor cortex, grasping, paired-pulse brain stimulation, dual-site TMS

10. **Wang, Y*.**, Neto, O. P., Davis, M. M., & Kennedy, D. M. (2021). The effect of inherent and incidental constraints on bimanual and social coordination. Experimental Brain Research, 1-17. (2022 Impact factor: 2.1)
    Keywords: bimanual coordination, social coordination, neural crosstalk, Lissajous feedback

11. Kennedy, D.K., Wang, C., **Wang, Y.,** & Shea, C.H. (2021). The influence of accuracy constraints on bimanual and unimanual sequence learning. Neuroscience Letters, 751, 135812. (2022 Impact factor: 2.5)
    Keywords: sequence learning, bimanual coordination, unimanual control, Fitts' Law, accuracy constraints

12. Pinto Neto, O., Kennedy, D. M., Reis, J. C., **Wang, Y.,** Brizzi, A. C. B., Zambrano, G. J., ... & Zângaro, R. A. (2021). Mathematical model of COVID-19 intervention scenarios for São Paulo—Brazil. Nature Communications, 12(1). (2022 Impact factor: 16.6)
    Keywords: SUEIHCDR compartmental model, epidemiology, COVID-19, social distancing strategy, preventive medicine

13. Kennedy, D. M., Zambrano, G. J., **Wang, Y.,** & Neto, O. P. (2020). Modeling the effects of intervention strategies on COVID-19 transmission dynamics. Journal of Clinical Virology, 104440. (2022 Impact factor: 8.8)
    Keywords: COVID-19, mathematical modeling, compartmental model, intervention strategies, pandemic

14. Kovacs, A. J., **Wang, Y.,** & Kennedy, D. M. (2020). Accessing interpersonal and intrapersonal coordination dynamics. Experimental Brain Research, 238(1), 17-27. (2022 Impact factor: 2.1)
    Keywords: bimanual coordination, interpersonal coordination, intrapersonal coordination, coordination dynamics, Lissajous feedback

15. Quan, M., Xun, P., Chen, C., Wen, J., **Wang, Y.,** Wang, R., ... & He, K. (2017). Walking pace and the risk of cognitive decline and dementia in elderly populations: a meta-analysis of prospective cohort studies. The Journals of Gerontology: Series A, 72(2), 266-270. (2022 Impact factor: 6.6)
    Keywords: cognitive decline, dementia, meta-analysis, walking pace

MANUSCRIPT IN PRE-PRINT OR DATA AVAILABLE

16. **Wang, Y.,** Weinrich, M. M., Lei, Y., Wright, D. L., Sandhu, M., Buchanan, J. J., & Kennedy, D. M. (2024). Generalization in motor learning: learning bimanual coordination with one hand. bioRxiv, 2024-04.

Keywords: bimanual coordination, virtual partner, motor generalization, memory consolidation, motor learning

17. **Wang, Y*.,** Weinrich, M., Jimenez, J., Kennedy, D.M. Assessing the difference in bimanual force coordination dynamics between young children and healthy adults (In manuscript).
Keywords: coordination dynamics, bimanual coordination, motor development, Lissajous feedback, bimanual force coherence

18. **Wang, Y*.,** Weinrich, M., Lei, Y., Wright, D., Buchanan, J*., Kennedy, D*. Neural Mechanisms of learning a novel bimanual coordination skill. (Data available)
Keywords: bimanual coordination, virtual partner, motor excitability, interhemispheric inhibition, motor generalization, TMS

CONFERENCE PRESENTATION AND PUBLISHED ABSTRACTS

1. **Wang, Y**., Weinrich, M., Bao, S., Lei, Y., Wright, L.D., Buchanan, J.J. (2023) The representation of a novel bimanual skill is lateralized to the dominant hemisphere. Progress in Clinical Motor Control II Movement and Rehabilitation Science.

2. **Wang, Y**., Weinrich, M., Bao, S., Lei, Y., Wright, L.D., Buchanan, J.J. (2022) The investigation of bilateral M1 excitability after training with a bimanual skill. Society of Neuroscience.

3. Kennedy, D.M., Neto. O.P., Weinrich. M., Keller. N., **Wang, Y.,** Diaz-Artiles, A. (2022) EMG-EMG wavelet coherence analysis of muscle coupling during bimanual tasks in altered-gravity. Society of Neuroscience.

4. **Wang, Y.,** Huynh, T. A., Richardson, B. E., Bao, S., Buchanan, J. J., Wright, D. L., Lei, Y. (2022). The consolidation mechanisms of motor adaptation and sequence learning. NASPSPA.

5. Kennedy, D.M., **Wang, Y.**, Weinrich, M. , & Abbott, R., Diaz-Artiles, A. (2022). Bimanual force control in simulated martian gravity. Journal of Sport & Exercise Psychology, 44, S41.

6. **Wang, Y.**, Neto, O.P., Weinrich, M. ¥, Castro, R. ¥, Wright, T., & Kennedy, D.M. (2022). Proximal and distal muscle activation differentially affect bimanual coordination. Journal of Sport & Exercise Psychology, 44, S58.

7. Weinrich, M., **Wang, Y.** , & Kennedy, D.M. (2022). Time onset and amplitude of force drift during unimanual and bimanual isometric contractions in Parkinson's disease. Journal of Sport & Exercise Psychology, 44, S58.

8. Davis, M.M., **Wang, Y.**, & Kennedy, D.M. (2021). Constant and dynamic bimanual isometric force production in individuals with Parkinson's disease. NASPSPA.

9. Davis, M.M., **Wang, Y.,** Woodruff, R., Diaz Artiles, A., & Kennedy, D.M. (2021). The influence of gravity on in-phase coordination. NASPSPA.

10. Davis M., **Wang Y.,** Woodruff R., Wright T., Dunbar B.J., Diaz-Artiles A., & Kennedy, D.M. (2021). The influence of perceptual constraints on bimanual force coordination in simulated microgravity. International Society for Gravitational Physiology.

11. Diaz-Artiles, A., Woodruff, R., Davis, M.M., **Wang, Y.,** Dunbar, B.J., & Kennedy, D.M. (2021). Bimanual coordination in altered gravity during parabolic flight. NASA HRP IWS.

12. Hondzinski, J.M., Davis, M., **Wang, Y.,** Catro, R., Hua, R., Kennedy, D.M. (2021). The effects of bimanual coordination constraints on postural control. Society for Neuroscience.

13. Kennedy, D.M., Davis, M.M., **Wang, Y.,** & Neto, O.P. (2021). The influence of integrated feedback information on bimanual force control in individuals with Parkinson's disease. NASPSPA.

14. Kennedy D.M., Davis, M.., Woodruff, R.., **Wang, Y.,** Wright T., Dunbar B.J., Diaz-Artiles A. (2021). The influence of altered-gravity on bimanual force coordination. International Society for Gravitational Physiology.

15. **Wang, Y.,** Davis, M.M., & Kennedy, D.M. (2021). Unimanual and bimanual force control in Parkinson's patients. NASPSPA.

16. **Wang, Y.,** Davis, M., Woodruff, R., Wright, T., Dunbar B.J., Diaz-Artiles A., & Kennedy, D.M. (2021) Integrated feedback displays to facilitate bimanual coordination in simulated microgravity. International Society for Gravitational Physiology.

17. **Wang, Y.,** Pinto Neto, O., Davis, M.M., Castro, R.J., Wright, T.J., & Kennedy, D.M. (2021). The influence of proximal and distal muscle activation on bimanual interference. Society for Neuroscience.

18. **Wang, Y.,** Neto, O.P., Davis, M.M., & Kennedy, D.M. (2021). EMG-EMG wavelet coherence between homologous muscles during symmetric and asymmetric bimanual coordination. NASPSPA.

19. Woodruff, R., Davis, M., **Wang, Y.,** Wright, T., Dunbar, B.J., Kennedy D.M., & Diaz-Artiles A. (2021). Effect of centrifuge generated altered-gravity on bimanual coordination. International Society for Gravitational Physiology

20. Davis, M.M., Cohen Gomez,L., **Wang, Y.**, & Kennedy, D.M. (2020). Assessing coordination dynamics in children. NASPSPA

21. Kennedy, D.M., **Wang, Y.**, & Pinto Neto, O. (2020). The effects of neural crosstalk on coordination dynamics. NCM.

22. Kennedy, D.M., **Wang, Y.**, & Pinto Neto, O. (2020). The influence of integrated feedback information on bipedal force control. NASPSPA.

23. **Wang, Y.**, Davis, M.M., Safdari, S., & Kennedy, D.M. (2020). Response biases: The role of interhemispheric transmission time. NASPSPA.

24. **Wang, Y.**, & Kennedy, D.M. (2020). The influence of accuracy requirements on bimanual and unimanual sequence learning. NASPSPA.

25. **Wang, Y.,** Pinto Neto, O., & Kennedy, D.M. (2020). The influence of neural crosstalk on 1:1 in-phase coordination. NCM

26. **Wang, Y.,** Pinto Neto, O., Kovacs, A.J., & Kennedy, D.M. (2020). Stability properties associated with bimanual and social coordination. NASPSPA.

27. **Wang, Y.,** & Kennedy, M. Deanna. (2019). The influence of right limb force level on a multi-frequency bimanual coordination task. Research abstract presented in North America Society of Psychology and Physical Activity, Baltimore, Maryland, USA

28. **Wang, Y.,** Bernard, J., Buchanan, J., & Wright, D. (2019). Remote Activation of The Ventral Midbrain Using tDCS of Prefrontal Cortex Enhances Online Performance of a Motor Sequence Skill. Research abstract presented in the 29th Annual Meeting of the Neural Control of Movement., Toyama, Japan

DISSERTATION

"Hemispheric influence on learning and consolidation of a dynamic pattern with 90-degree relative phase"
(Dissertation is published online; Manuscripts are in preparation for peer-reviewed journals)
Keyword: *Rhythmic Bimanual coordination, Virtual Partner Interaction, TMS, Paired pulse TMS of interhemispheric inhibition*

PROFESSIONAL SERVICES

1. Reviewer for the **Journal of Cognitive Neuroscience**

2. Reviewer for **Frontier in Neurology**

RESEARCH TALKS

"Exploring neural mechanisms of movements using transcranial magnetic stimulation"
-Neuroscience Institute, Princeton University, NJ 2024.02

"Neural competition or cooperation? the way to learn a new bimanual skill"
-Biomedical Engineering Department, Anhembi Morumbi University, Brazil 2022.10

"The influence of proximal and distal muscle activation on bimanual interference"
-Shanghai University of Sports, Department of Kinesiology, Shanghai, China 2021.11

PROFESSIONAL DEVELOPMENT

2024 TMS workshop
-Perelman School of Medicine, University of Pennsylvania 2024.09

Cognitive Control of Action Workshop
-The Department of Psychology, Princeton University 2024.03

EXPERIMENTAL TECHNIQUES AND SKILLS

- Computer-based motor learning tasks programming (MATLAB)

- Statistical analysis and modeling (R, SAS, and SPSS)
- Non-invasive brain stimulation (Transcranial Magnetic Stimulation and Transcranial Direct Current Stimulation)
- Time-series signal decomposition and analysis (Force Transducers, AMTI Force Plate, Electromyography, and Electroencephalogram)

PROFESSIONAL MEMBERSHIPS

- Society for the Neural Control of Movement (NCM)
- North American Society for The Psychology of Sport and Physical Activity (NASPSPA)
- Society for Neuroscience (SfN)