



## Julie Muccini, MS, OTR/L

Research Engineer, Rad/Musculoskeletal Imaging

### Bio

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#### BIO

Julie Muccini is an occupational therapist who has spent most of her clinical career working with individuals with neurological diagnoses. She is registered and licensed in California and is a member of the American Occupational Therapy Association (AOTA) and the Occupational Therapy Association of California (OTAC). She is actively involved in research working with individuals post-stroke, neuromuscular diseases, and osteoarthritis; additional work includes assessing shoulder movements, sprinting, and balancing tasks; she works in the Human Performance Lab with an interdisciplinary team integrating biomechanics, biomedical engineering, physiology, psychology, and rehabilitation. Ms. Muccini received her bachelor of science in industrial engineering and operations research from the University of Massachusetts at Amherst and her master of science in occupational therapy from Boston University. She started working at the hospital at Stanford in 1997 and transitioned to the Outpatient Neuro Rehab Clinic at the Stanford Neurosciences Health Center in 2014. In March 2021, Julie moved to the Stanford University School of Medicine to work in the Human Performance Lab at the Arrillaga Center for Sports and Recreation, ACSR, as a Wu Tsai Human Performance Alliance member.

#### INSTITUTE AFFILIATIONS

- Member, Wu Tsai Human Performance Alliance

#### EDUCATION AND CERTIFICATIONS

- MSc, Boston University, Sargent College , Occupational Therapy (1996)
- BSc, University of Massachusetts, Amherst , Industrial Engineering and Operations Research (1990)

#### PERSONAL INTERESTS

While an undergraduate, Julie competed in Division I Track and Field in the 400-meter hurdles and triple jump; after graduate school, she became a competitive cyclist on the track and road and won two Masters National Championships on the Velodrome for the Points Race. In addition, she enjoys Muay Thai Fighting, Brazilian Jiu-jitsu, hiking, road cycling, and mountain biking.

#### LINKS

- Human Performance Lab: <https://ortho.stanford.edu/humanperformance.html>
- Engage Health: <https://engagehealth.stanford.edu/our-team>
- Linked In: <https://www.linkedin.com/in/julie-muccini-63991b6>

### Professional

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#### PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, Occupational Therapy Association of California (1997 - present)

- Member, American Occupational Therapy Association (1997 - present)

## Publications

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### PUBLICATIONS

- **Evaluating the Feasibility of an Augmented Reality System for Motor Recovery in Stroke Rehabilitation: Proof-of-Concept Study**  
Kim, E., Cho, Y., Lima, J., Muccini, J., Jindal, J., Scheid, A., Nelson, E., Park, S., Zeng, Y., Sturgis, A., Li, C., Dai, J., Kim, et al  
LIPPINCOTT WILLIAMS & WILKINS.2026
- **Retraining Gastrocnemius Muscle Coordination Reduces Late-Stance Knee Contact Force in Individuals With Knee Osteoarthritis** *IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING*  
Joyce, M. R., Muccini, J., Randoing, B., Delp, S. L., Uhlrich, S. D.  
2026; 34: 1417-1425
- **Treatments for Functional Neurological Disorder: A Practical Guide for Program Development.** *The Journal of neuropsychiatry and clinical neurosciences*  
Martyna, M., Muccini, J., Sandoval, G., Fusunyan, M., Bullock, K., Bajestan, S., Barry, J. J., Lockman, J.  
2025: appineuropsych20230213
- **Virtual reality glove for home-based hand and arm stroke rehabilitation (vREHAB).** *PM & R : the journal of injury, function, and rehabilitation*  
Yan, L., Muccini, J., Lugo, L., Mlynash, M., Michiels, L., Verheyden, G., Saenen, L., Dirlikov, B., Ali, A., Lanphere, J., Huie, H., Lemmens, R., Lansberg, et al  
2025
- **Video-Based Biomechanical Analysis Captures Disease-Specific Movement Signatures of Different Neuromuscular Diseases.** *NEJM AI*  
Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.  
2025; 2 (9)
- **Improved Strength Prediction Combining MRI Biomarkers of Muscle Quantity and Quality.** *NMR in biomedicine*  
Mazzoli, V., Vainberg, Y., Hall, M. E., Barbieri, M., Asay, J., Muccini, J., Rosenberg, J., Kogan, F., Delp, S., Gold, G. E.  
2025; 38 (9): e70112
- **Video-based biomechanical analysis captures disease-specific movement signatures of different neuromuscular diseases.** *bioRxiv : the preprint server for biology*  
Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.  
2025
- **Personalizing the shoulder rhythm in a computational upper body model improves kinematic tracking in high range-of-motion arm movements.** *Journal of biomechanics*  
Maier, J. N., Bianco, N. A., Ong, C. F., Muccini, J., Kuhl, E., Delp, S. L.  
2024; 176: 112365
- **EngageHealth: a mobile device application designed to deliver stroke rehabilitation exercises using asynchronous video recordings.** *Frontiers in stroke*  
Song, A. J., Lugo, L., Muccini, J., Mlynash, M., Lansberg, M. G.  
2024; 3: 1418298
- **Towards Video-Based Movement Biomarkers for Neuromuscular Diseases**  
Uhlrich, S. D., Ruth, P. S., de Monts, C., Falisse, A., Muccini, J., Ataide, P., Day, J., Duong, T., Delp, S. L.  
edited by Pons, J. L., Tornero, J., Akay, M.  
SPRINGER INTERNATIONAL PUBLISHING AG.2024: 501-504
- **OpenCap: Human movement dynamics from smartphone videos.** *PLoS computational biology*  
Uhlrich, S. D., Falisse, A., Kidziński, Ł., Muccini, J., Ko, M., Chaudhari, A. S., Hicks, J. L., Delp, S. L.  
2023; 19 (10): e1011462
- **Home-based Virtual Reality Therapy for Hand Recovery After Stroke.** *PM & R : the journal of injury, function, and rehabilitation*  
Lansberg, M. G., Legault, C. n., MacLellan, A. n., Parikh, A. n., Muccini, J. n., Mlynash, M. n., Kemp, S. n., Buckwalter, M. S., Flavin, K. n.  
2021

- **Embodied Virtual Reality Mirror Visual Feedback for an Adult with Cerebral Palsy** *American Journal of Psychiatry and Neuroscience*  
Bullock, K. D., Stevenson Won, A., Bailenson, J., Muccin, J., Paul, M., Bronte-Stewart, H.  
2021; 9 (2): 59-67
- **How to Design Woke Stroke Tech: The STORIES Project**  
Eakin, M., Gian, A., Kim, F., Muccini, J., Lansberg, M., Flavin, K.  
LIPPINCOTT WILLIAMS & WILKINS.2020