

REHABWEEK
2025

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Category: Research

Workshop Title: Beyond Clinical Walls: The Importance of Real-World Data and Community Monitoring in Modern Rehabilitation

Organizer(s): Sara Nataletti

Speaker(s): Jayaraman, Arun, Shirley Ryan AbilityLab

Lee, Sunghoon Ivan, University of Massachusetts

Miller, Allison, Washington University School of Medicine

Nataletti, Sara, Shirley Ryan AbilityLab

Workshop Time: 10:30 - 12:00

Attendee Engagement: In our workshop, we plan to engage attendees through a variety of interactive methods. We will demonstrate the technologies and sensors we use, allowing participants to see them in action. The session will include interactive slides that update in real-time based on audience responses, making the content dynamic and tailored to attendee interests. We'll also provide practical examples and incorporate discussion rounds, where participants can explore these technologies' applications in real-world scenarios. This hands-on approach will encourage active participation and deepen understanding

Abstract: For individuals recovering from illness or injury, restoring independent mobility within their communities is a central goal of rehabilitation. Community mobility not only impacts physical health but also mental well-being, social participation, and quality of life. Despite its importance, traditional clinical assessments often fall short in reflecting a patient's actual performance in their everyday environments. To address this gap, real-world data collection and community monitoring offer a promising solution that can transform rehabilitation outcomes. This workshop will explore how technologies such as of wearable devices, GPS, and in-home monitoring systems allows for continuous tracking of patients beyond the clinical setting. These tools provide critical insights into real-world mobility, health behaviors, and rehabilitation progress, offering more accurate data for clinical decision-making and personalized interventions.

Dr. Arun Jayaraman will introduce the significance of real-world monitoring, emphasizing how it bridges the gap between clinical assessments and daily life. Dr. **Allison Miller** will share her work on actigraphy for monitoring physical activity and sleep in patients post-stroke. Dr. Sunghoon Ivan Lee will showcase how machine learning and wearable technologies can provide insights into individuals' inherent motor severity caused by neurological or musculoskeletal conditions, and Dr. Sara Nataletti will conclude with practical applications of smartphone and GPS data for tailoring rehabilitation interventions to individual needs.

This session will offer attendees a comprehensive understanding of how real-world outcomes and community monitoring are reshaping rehabilitation. Through case studies, research presentations, and interactive discussions, participants will explore how these technologies can enhance patient outcomes, personalize interventions, and improve mobility in everyday life.