

Joint Biomedical Engineering Seminar Series

MU ▪ MCW ▪ UWM

Seminar Announcement

Friday, November 3, 2017

Noon – 1:00 pm

Olin Engineering, Room 202

Marquette University

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Joint Department of Biomedical Engineering, Marquette University & Medical College of Wisconsin

Abstract

Studying Dynamic Balance using a Motion Base Treadmill System

In the Human Performance Laboratory at Marquette University, we have the ability to measure walking balance while creating a challenging walking environment by placing a treadmill onto a motion base. The treadmill rests on a movable support system of six motors, which allows translation and rotation in three directions. With this system, we are able to simulate uneven terrain through movements of the walking surface while maintaining a safe walking environment.

This talk will highlight current research using the motion base treadmill system to study dynamic balance in healthy and balance-impaired individuals. Specifically, we are using the motion base system as a destabilizing influence to conduct tests of balance while walking. From this, we can capture the individual's motion and understand the strategies used to control dynamic stability (i.e. their balance while walking) under challenging conditions. Second, we are testing the feasibility of using this technology for retraining balance and walking function in people with balance impairments. While a majority of balance and gait rehabilitation interventions focus on assisting with balance, we are investigating whether challenging balance during walking will be a more effective method to improve balance and walking for individuals who have impaired balance due to disease or injury.

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Olin Engineering Center is located at 1515 W. Wisconsin Ave, Milwaukee, WI. Parking is available in Structure 1 on 16th Street between Wisconsin & Wells Aves. Refreshments will be served.