SEMINAR SERIES

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Slippery Slopes: Opportunities for Comprehensive Balance Training and Fall Prevention

Featuring Dr. Corbin Rasmussen

University of Nebraska at Omaha

Friday, Oct. 20 | 10:00 am – 11:00 am | BRB 167

PRESENTATION ABSTRACT

Perturbation-based balance training, where individuals undergo repeated balance disturbances like slips in a safe environment, is promoted as a way to strengthen ecologically valid, context-specific recovery skills that are challenging to target with exercise alone. Indeed, past research has shown that perturbation-based methods improve compensatory stepping, enhance trunk posture control, and prospectively reduce falls in the community. Inherent constraints of these methods that are not present in real-world slips, however, may hamper the transfer of reinforced recovery skills to prevent real-world falls. This talk will present our efforts to remove these constraints – namely through the development, validation, and use of a wearable slip perturbation device to study slip recovery and fall risk on curved path or sloped environments. Opportunities inspired by this work for comprehensive yet efficient perturbation-based training programs, new measures of perturbation severity, novel balance recovery mechanisms, and applications to populations with balance deficiencies will also be shared.

ABOUT DR. RASMUSSEN

Corbin Rasmussen is a Research Associate in the Department of Biomechanics at the University of Nebraska at Omaha. He earned his bachelor's in Nutrition, Exercise, and Health Science from the University of Nebraska-Lincoln before joining the Department of Biomechanics as a graduate student, where he earned his master's and doctorate degrees in Biomechanics. His research interests lie in understanding and augmenting the human postural control system, specifically when faced with external balance perturbations and deficits introduced by aging, limb loss, or disease. To date, his work has focused on slip recovery within walking environments or tasks that naturally pose a heightened slip risk compared to the oft-studied straight, level walking.

more info at **cobre.unomaha.edu**

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