

Performance prediction and injury risk reduction for active populations

Thursday, Aug 12th, 3:30 - 4:30 PM
#078 Freeman Hall Auditorium

Zoom: <https://viriniatech.zoom.us/j/5978447955>

Athletes and soldiers are challenged to navigate through intense, fast-paced environments that require advanced coordination of movement despite continuous changes in temporal and spatial demands. Adaptive and efficient movement patterns facilitate the maintenance of consistently high levels of performance across diverse environmental conditions and reduce risk for injury by allowing for increased capacity to explore alternative motor solutions. But how can these be effectively quantified? In the first part of this talk, Dr. Ulman will briefly discuss her dissertation work which investigated different aspects of performance, including motor learning, experience, and adaptability to fatigue, and the utility of gait variability as a predictor of performance in a military population.

Numerous efforts have been made to develop return-to-play (RTP) criteria following sport-related injuries, however, most are highly variable, dependent on population, and lack a general consensus. In addition, popular functional performance tests are unable to detect abnormal movement patterns that increase a patient's risk of re-injury as they underestimate performance deficits and overestimate function, recovery, and RTP readiness. Therefore, a number of projects have been initiated to test the validity and reliability of a comprehensive RTP protocol developed to utilize motion capture technology to more accurately identify injury risk and RTP readiness in youth athletes following an injury. Dr. Ulman will present preliminary findings of this work and detail more novel evaluations of movement that incorporate measures of physiology, cognitive processing, and psychology to gain a better understanding of functional recovery.

Dr. Sophia Ulman holds a PhD from Virginia Tech, and is the Assistant Director of the Movement Science Lab at Scottish Rite for Children. She leads clinical research projects focused on pediatric patient populations primarily treated for sport-related injuries. Her primary research interests include evaluating biomechanical and physiological measures to determine injury risk and enhance functional performance, movement efficiency, and long-term health.

