

# SEMINAR SERIES

Supported by The Department of Biomechanics and  
The Center for Research in Human Movement Variability (MOVCENTR)



## Chronic Mechanical Exposures In the Lumbar Spine

Featuring Dr. Jack Callaghan  
University of Waterloo



Friday, Feb. 3 | 12:00 - 1:15 pm | BRB 167

### PRESENTATION ABSTRACT

Low back is the leading workplace sick leave reason, the leading cause of disability globally, has extremely high costs for industry and health care, and has poor medical care outcomes. This is compounded by poor diagnostic ability to identify the specific tissues involved or nociceptive sources. This presentation will span from cell to society, or research to practice. I will discuss the foundations for cumulative injury mechanisms in the spine, highlighting the ability of mechanical exposures to outpace the biological repair processes. The progression from micro-damage to joint altering injuries and translation of this knowledge into practice will be discussed.

### ABOUT DR. CALLAGHAN

Jack Callaghan holds the rank of Professor in the Faculty of Health at the University of Waterloo. He is director of the provincial Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) and holds the Canada Research Chair in Spine Biomechanics and Injury Prevention. Dr. Callaghan is a Canadian Certified Professional Ergonomist (CCPE), is cross-appointed to Mechanical and Mechatronics Engineering, and received the Career Award from the Canadian Society for Biomechanics in 2014. His research is concerned with the etiology of spine injuries at the tissue level from exposure to cumulative loading scenarios and has been funded by Natural Sciences and Engineering Research Council of Canada (NSERC), Canadian Institutes of Health Research (CIHR), and the Ontario Ministry of Labour (MOL). He has collaborated and consulted with a wide range of industrial partners, including automotive and office furniture manufacturing companies. He is the past president of the Canadian Society for Biomechanics and was inducted as a fellow in the Canadian Academy of Health Sciences in 2021.

more info at [cobre.unomaha.edu](http://cobre.unomaha.edu)

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