SEMINAR SERIES

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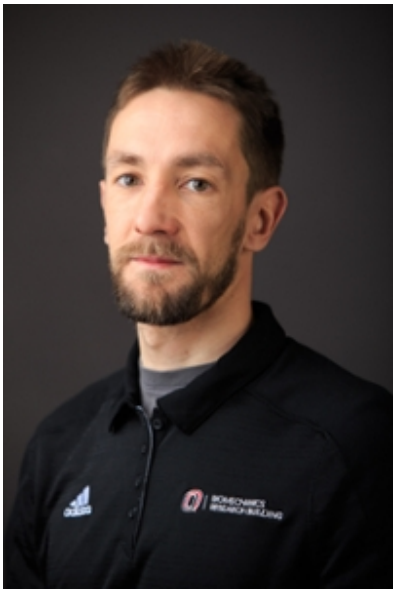

USING WEARABLE ROBOTS TO "FEEL" METABOLIC COST AND PROVIDE SIMPLE TIMED ASSISTANCE

Featuring Dr. Philippe Malcolm

University of Nebraska at Omaha

December 6, 2019 | 12:00 - 1:15 pm | BRB 167

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PRESENTATION ABSTRACT

Modern motion capture laboratories can measure biomechanical data at high frame rates, but we cannot measure changes in metabolic cost within the walking stride. In the first part of this presentation, we discuss estimations of the time profile of metabolic cost based on muscle-simulations as well as an assumption-free approach. Improved estimations of the time profile of metabolic cost could be useful for optimizing exercise therapies and wearable robots to target the least economic part of the gait cycle. In the second part of this presentation we discuss how simpler wearable robots could be used to provide timed assistance.

ABOUT DR. MALCOLM

Philippe Malcolm did his Ph.D. at Ghent University where he worked on ankle exoskeletons for reducing the metabolic cost of walking. He worked as a postdoc at Harvard University on the development of a soft textile-based exosuit for walking and running. He joined UNO as an assistant professor in 2017 where he conducts research using wearable robots to assist walking and as perturbation devices for measuring variables that cannot be measured otherwise.

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

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