

Name: **Vincent Raffault**

SFU faculty/major: Mechatronic Systems Engineering

Title of presentation: Modelling the characteristics of the human's soft tissues during a fall
Abstract

Despite research and community effort, injuries resulting from falls have significantly increased for the past few years. During falls, human soft tissues (skin, muscles, tendons, fat...) are the first body parts to sustain the impact. Subsequently, understanding soft tissue contact mechanics will help to evaluate the injury risk, the impact attenuation and the loading amplitude of these tissues. Further knowledge of contact mechanics will also help to design effective systems and establish preventative interventions to reduce the number of injuries due to falls. In that purpose, a computational model of a falling dummy has been created to simulate the contact between the tissues and the ground during a forward fall. To simulate different scenarios, the properties of the falling dummy will be changed regarding the sizes and weight of the human body and different mechanical tissue characteristics. These numerical models will be validated within vivo indentation experiments on humans.