



Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: **Thursday, 24 October 2019**

Time: **1:30 p.m.**

Location: **Physics & Astronomy Seminar Room 100**

Dr. Rowan Thomson

Department of Physics
Carleton University

“Advancing cancer radiation therapy with physics: Multi-scale modeling from patient to cells”

ABSTRACT

Radiation therapy is a common treatment for cancer, aiming to maximize tumour cell kill while limiting healthy tissue radiation exposure. Sophisticated simulations using the Monte Carlo technique are used to model the passage of radiation through matter and calculate dose, the energy deposited in tissue by radiation. This presentation will focus on the development and application of computational techniques to study energy deposition in different contexts towards advancing radiation therapy. These include patient-level simulations with direct applications in current treatments, cell-level simulations including applications for prospective treatments involving nanoparticles and, finally, subcellular-level simulations considering possible quantum effects in electron transport.

HOST: E. Wong

COFFEE + light snacks will be available in the Atrium, 2nd floor, at 1:15 p.m.