



Physics Colloquium

Friday November 06, 2020, 4 pm, Online (Blackboard Collaborate)

Dr. Amanda Cherpak

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Medical Physics – Using Radiation To Shrink Tumors and Prolong Lives

Abstract: How can photons cause damage to DNA? How does particle energy affect tumor dose? What is a medical physicist and what do they do? This talk will cover some of the basics of medical physics and a clinical career path in a cancer centre. It will also describe a newly developed technique to treat lymphoma and multiple myeloma patients called Total Marrow Irradiation. The basics of total body irradiation were developed over a century ago and have been used to increase the likelihood of survival for patients receiving bone marrow transplants. Technological advances have made it possible to spare healthy tissues and focus radiation on regions of active bone marrow, which exist throughout the entire body. This complex technique was commissioned at the Nova Scotia Cancer Centre and the first patient in Canada was successfully treated in January 2016.

Short Bio: Dr. Amanda Cherpak is originally from Cape Breton, NS and an alumni of StFX University. After graduating with a BSc in 2005, she attended Carleton University in Ottawa, ON where she completed her PhD in Medical Physics. Her doctoral research involved the design of a novel detector that combined a MOSFET dosimeter and electromagnetic positioning system. This was used to measure motion and dose of cancer patients during treatment delivery for quality assurance. Amanda now works as a clinical medical physicist at Nova Scotia Health and is an Associate Professor at Dalhousie University with cross appointments in the departments of Radiation Oncology and Physics & Atmospheric Sciences. She is co-director of the Medical Physics Residency program and is actively involved in clinical projects, incident learning and outreach activities with Women in Science and Engineering. Amanda lives in Dartmouth with her husband, Morgan and two young daughters, Rowan and Charlotte.