Western Science

DEPARTMENT OF PHYSICS AND ASTRONOMY

Physics Undergraduate Conference (PhUnC)

KEYNOTE TALK

Thursday, 9th March 2017 @ 2:30 p.m.
PAB Seminar Room 100

Dr. Nigel Smith

Director, SNOLAB

"The SNOLAB Science Programme: Cutting-edge science from a deep hole in the ground"

Canada's most recent Nobel Prize was awarded to Art McDonald for studies of solar neutrinos, undertaken 2 kilometres underground at the SNOLAB facility in the Creighton mine, near Sudbury. Why do we need to go to such great depths to probe the Universe? This work, and several of the major questions studied in contemporary astro-particle and sub-atomic physics—such as the search for the Galactic dark matter and studies of neutrinos from supernova—require the ultra-quiet radiation environment afforded by such deep underground facilities. In these facilities, the cosmic radiation induced backgrounds in the detection systems are reduced to a manageable level, with additional shielding from natural ambient radioactivity and low background construction of detector systems. This talk will provide a review of the science programme at SNOLAB outlining the main science objectives, will review the detectors used for these studies, and outline future plans for the facility.