

# SEMINAR NOTICE

*Department of Physics and Engineering Physics  
University of Saskatchewan*

---

**SPEAKER:** Dr. Robert Green  
Department of Physics & Engineering Physics

**TOPIC:** *Revealing and Tuning Exotic Emergent Phases in Quantum  
Materials*

**DATE:** September 28, 2021

**TIME:** 3:30-4:30 p.m.

Join Zoom Meeting:  
<https://usask-ca.zoom.us/j/96818469630?pwd=aGpiVUticEJmZzBqclZ2S042eGpiQT09>

Join by Telephone:  
Local Saskatoon Dial-in Number: (639) 638-7474  
Other Zoom Dial-in Numbers: <https://usask-ca.zoom.us/j/96818469630>

Join by Video Conferencing Device (SIP):  
[96818469630@zoomcrc.com](https://usask-ca.zoom.us/j/96818469630)

Meeting ID: 968 1846 9630  
Passcode: 07412447  
Telephone Passcode: 07412447

## **Abstract:**

The impact of materials science over the past century has been immense – for example, the solid state transistor emerged out of materials science efforts 75 years ago and today most people carry billions of transistors with them wherever they go, enabling uninterrupted access to global communications and information. Now, a new generation of materials science is emerging in the form of “quantum materials”, and has the potential to again revolutionize electronic devices. However, as the properties of these materials are a product of quantum many-body physics, they can be exceptionally difficult to understand and control. In this talk I will give an introduction to the field of quantum materials, and describe some of our relevant recent experiments at the Canadian Light Source. By studying the reflection of x-rays from various engineered materials and using detailed quantum mechanical models to analyze the data, we have gained key insights which will help us harness their properties for future technologies.