Earth Sciences

Colloquium Series

CSEG
Canadian Society of Exploration Geophysicists

Dr. Alison Malcolm

Professor, Memorial University and CSEG Distinguished Lecturer

Geophysics: Combining Technology and Fundamental Science to Improve our World

Abstract:
Many key problems in the world are fundamentally geoscience problems. We will play a vital role in locating critical minerals, sequestering CO2 underground, finding energy resources, selecting sites for wind farms, and continuing to develop systems that warn populations of natural disasters. These contributions require an understanding of topics from geoscience to computer science and all are affected by and contribute to how technology changes. Drawing on contributions from my team and others, I will highlight a series of examples in which we use and develop technology tailored to specific geoscience problems. We will discuss 'right-sizing' computations for CO2 sequestration, adapting machine-learning techniques to improve our understanding of geological structures like faults and mineral deposits, and even how we can use Minecraft to teach geoscience to others. My goal is for geoscience students to see some new applications and the technologies underlying them, for other science and engineering students to see exciting applications of their studies, and for experienced geophysicists to see some new applications and share toolkits to promote the breadth and excitement of geophysics.

Biography:
Professor Alison Malcolm is a geophysics prof in the Earth Sciences Department at Memorial University (MUN). Together with students, postdocs and other collaborators, she works to study more efficient ways to form seismic images of the subsurface and to understand how waves move through and interact with rocks. She did her BSc at the University of British Columbia and her PhD at the Colorado School of Mines. She joined MUN in 2014 as an NSERC Industrial Research Chair after six years as an assistant professor at the Massachusetts Institute of Technology.

Date: Tuesday November 24

Time: 1:30 pm

Location: BGS 1069

Coffee and Timbits will be served.