



Thursday  
March  
23rd

**EARTH AND ENVIRONMENTAL SCIENCES**

# DEPARTMENT SEMINAR

## Howard Street Robinson Lecture Tour

### The Archean-Proterozoic transition and emergence of modern-type tectonics.

The Archean-Proterozoic transition between ca. 2.5 and 1.8 billion years ago was characterized by fundamental transformations in the scale and style of plate tectonics, introducing, for the first time in Earth's history, processes that more closely resembled those found in modern environments. These processes include continental margin rifting and eruption of continental flood basalt, establishment of passive continental margins, arc and back-arc magmatism, generation of supra-subduction zone ophiolites, as well as accretion of juvenile terranes and micro-continents. Elements of modern-type continent-continent collision also emerged, such as indentation tectonics, formation of oroclines, as well as deep exhumation of continental crust and escape tectonics. This lecture focuses on the Trans-Hudson orogen, which has preserved a ~ 270 m.y. long, near-complete record of ocean opening, closure, accretion, and collision spanning from Saskatchewan to the North Atlantic coast and beyond. We will also see how thick, cold sub-continental lithospheric keels acquired during the Archean played a role in subsequent tectonics and preservation of continental crust.

David  
Corrigan  
Geological  
Survey of  
Canada (retired)  
*Corrigan  
Geoscience*

#### **WHEN**

Thursday, March 23, 2023  
2:00 p.m.

#### **WHERE**

University of Waterloo  
DC 1304

**FREE ADMISSION ~ ALL WELCOME**