

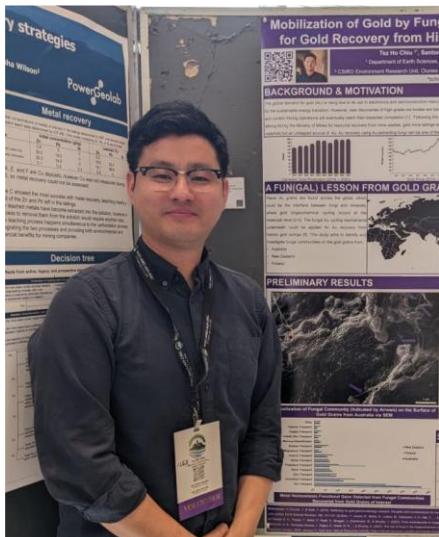
# Earth Sciences

## Colloquium Series

### Alex Chiu

Ph.D. Candidate, Western University; 2025 G. Gordon Suffel Fellowship Award Recipient

## How can we turn gold mine wastes into gold mines using fungi?



**Date:** Friday, January 23, 2026

**Time:** 1:30 pm

**Location:** BGS 0153

Gold may not be as critical as rare earth minerals for the clean-energy transition, but its excellent conductivity and corrosion resistance make it essential for electronics and semiconductor manufacturing. These properties ensure gold remains indispensable to modern technology, and with prices reaching historic highs, demand is expected to continue to increase. As of 2023, Canada is the fourth-largest gold-producing nation, with mining contributing about 5% of its GDP. However, recent challenges have raised concerns about the industry's sustainability. Reliance on (toxic) cyanide-based extraction and declining ore grades highlight the need for alternative approaches, including biomining and the reutilization of gold mine waste (tailings).

High gold prices and an estimated \$10 billion worth of gold in mine tailings further incentivize tailings reuse, particularly through microbial metal recovery methods. A part of my doctoral research examines fungal communities associated with placer gold grains. As gold grains can be easily recovered from fluvial sediment, they are an ideal natural material for studying how microorganisms influence gold cycling. Insights from these materials could be translated to engineered environments, such as tailing ponds, for gold recovery applications. In this talk, we will explore how these fungal "gold diggers" may help unlock the recovery of precious metals from this untapped resource.

*Coffee and Timbits will be served.*