



Spring 2024 Colloquium Series

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The role of geofluids in Earth and planetary processes

Geofluids have played a critical role in the formation and evolution of Earth and planetary systems. Geofluids facilitate mass and energy transport on Earth, and are the main drivers of weathering, volcanism, ore formation, and many other significant dynamic geological processes. Without geofluids, life could not have developed, evolved, and survived on Earth and, perhaps, elsewhere in the Solar system.

Compositions of geofluids vary widely, from essentially pure H₂O meteoric water, to saline seawater and basinal brines, and include salt and gas-rich metamorphic and magmatic fluids. At higher temperatures, geofluids may be represented by silicate, sulfide, or carbonate melts. In this presentation, I will provide some examples of the important role of geofluids in different environments, and the methods employed to study geofluids. Among the topics to be considered are:

- The geohydrologic cycle today and during the Phanerozoic
- The composition and oxidation state of Permian seawater
- Magma chamber processes that govern why some volcanoes erupt explosively, while others do not (and can we predict the nature of a future eruption?)
- Interaction of geofluids with mafic rocks: Implications for the formation of serpentinites and for carbon storage
- Geofluids and the search for life beyond Earth

Bagels, donuts, and coffee
available in **SRCC 219**
before the talk!

March 28, 2024
Thaw 104 @ 4:00PM