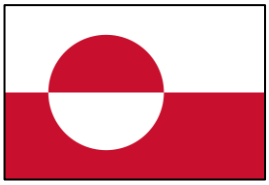
Colorado Scientific Society
SPECIAL TOPICAL SESSION

6:30–9:00 pm, Wednesday, April 22, 2026
Room 380, Benson Hall, CU Boulder campus

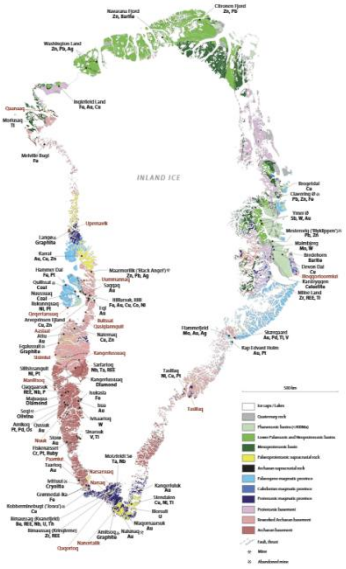
Greenland: A geocitizen's introduction to bedrock geology and glacial history



Dr. Flemming Mengel, Geological Sciences, CU Boulder

Dr. Bradley Markle, Geological Sciences & INSTAAR, CU Boulder

Lecture Highlights:



Greenland has recently been at the center of geopolitical discussions due to its strategic location and potential natural resources. The world's largest island will become increasingly important as warming climates allow greater habitation, increased mineral exploitation, new shipping routes, and heightened geopolitical relevance. Yet the geologic and glacial histories of Greenland remain underappreciated by many. To achieve a better-informed geocitizenry, Drs. Flemming Mengel and Bradley Markle will provide an overview of the 3.8 Ga geotectonic evolution of the crust underlying the world's second largest continental ice sheet, the conditions that lead to its current glacial state, and what that ice can inform us about earth's past and future climates.

Speaker Backgrounds:

Dr. Flemming Mengel has worked extensively on the tectonic evolution of west Greenland and Labrador during and after receiving his PhD at Memorial University, St. John's, Newfoundland, in 1988. He has published widely on tectono-metamorphic evolution of the Paleoproterozoic Nagssugtoqidian orogen. He also has years of experience in conventional and unconventional oil and gas plays focused in Rocky Mtn basins. He is currently a lecturer at CU Boulder.

Dr. Bradley Markle studies Earth's climate system, how it works, and how it changes through time. His research specialties include isotope biogeochemistry; paleoclimate and climate dynamics, particularly in the high latitudes. He uses those tools to investigate geochemical proxy records and models of paleoclimate and climate dynamics. He received his PhD at the University of Washington, Seattle, in 2017 and currently holds positions in the CU Boulder Geosciences department and the Institute for Arctic & Alpine Research.

Keywords

Greenland; geologic evolution; mineral resources, ice sheet; paleoclimate