

NOVEMBER 16, 2021 meeting announcement.

Using scientific drilling to test the controversial hypothesis of glaciation in late Paleozoic equatorial Pangaea

Abstract

The Late Paleozoic (300 Ma) archives the longest glaciation of the Phanerozoic, with continental glaciers across much of the Gondwanan continent. In contrast, the equatorial region have long been considered uniformly warm, and ice-free. We hypothesize that alpine glaciation occurred in relatively low-elevation uplands of tropical Pangaea. Evidence in the western U.S. (western equatorial Pangea) includes a hypothesized fossil paleovalley and inferred proglacial sediment onlapping this valley. This hypothesis has been widely criticized as “outrageous” and remains poorly accepted; if valid, however, it implies globally cool temperatures at least episodically during the late Paleozoic Ice Age, and raises questions about the climate forcing factors that led to such an extreme state.

Speaker Biography



Lynn Soreghan studies sediments and sedimentary rocks as a means to shed light on Earth’s climate behavior, especially in deep time. She focuses on topics related to atmospheric dust and loess, rock weathering, and glaciation. She is a David Boren Professor and the Eberly Family Chair and Director of Geosciences at the University of Oklahoma, and a Fellow of the Geological Society of America. She is intrigued by the geologic record of dust, especially from the penultimate “icehouse” climate of the Late Paleozoic (300 My). Dust acts as both an archive of climate, and agent for climate change, and the Late Paleozoic Earth preserves our only example of icehouse collapse on a planet with a well-developed terrestrial biosphere. She is currently directing a research drilling project in Unaweep Canyon, Colorado, to test the hypothesis that this landform preserves an unprecedented record of low-elevation upland glaciation in equatorial Pangaea—the theme of her talk. She is also lead PI on a project in development to recover an ~2 km section housing a high-resolution

record of Permian climate from equatorial Pangaea. Lynn earned her B.S. (Geology).