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### **Research areas:**

My research focuses on understanding variations in climate, environment, and oceanography over a broad range of temporal and spatial scales as recorded in the marine carbonate record. Understanding past global changes provides insight into the sensitivity of Earth's climate and improves our ability to predict future changes. Current projects include: (1) reconstructions of Precambrian paleoenvironments, (2) examinations of Late Cretaceous paleoceanography and paleoclimate, (3) evaluation of the timing and extent of the late Paleozoic ice age, and (4) studies of modern, shallow-water marine carbonate systems.

I place a strong emphasis on integrating field relationships with geochemical, stable isotopic, and petrographic data obtained in the laboratory. Because the original chemical and textural characteristics of marine carbonates are susceptible to alteration, laboratory data from ancient carbonates are rigorously evaluated in a context of post-depositional history and diagenetic processes. This approach allows for more accurate interpretation of the chemical and textural signatures preserved in the rock record. Studies of modern carbonate systems provide valuable information that aids in the interpretation of ancient analogs.