Paleoclimate Reconstruction
Tues & Thurs 9:10 - 10:30
FASB 101
Instructor: Gabe Bowen (gabe.bowen@utah.edu)

The study of past climate change helps scientists understand what the climate system can do and why. How hot and how cold has the Earth been in the past? How wet and how dry? How quickly can Earth’s climate change? Why do these changes happen, and how do they affect the chemistry of Earth’s atmosphere, oceans, and soils, the structure and composition of Earth’s ecosystems? By seeking to answer these questions, paleoclimatologists help us understand the bounds of variability in the climate system, factors that cause climate change, and potential trajectories of future climate.

Organization
Paleoclimate Reconstruction will meet 2 times weekly to survey current methods and topics in paleoclimate research. Each week we will focus on a different class of methods applied in paleoclimate research, including proxies (biological, lithological and geochemical) and models (geochemical, climatological). Techniques will be introduced in a lecture by the instructor during the Tuesday meeting. The Thursday class period will be an informal discussion of a case study from the scientific literature in which the method has been applied. Case studies will center on 2-3 current themes in paleoclimate research that will be selected early in the course based on the interests of course participants. By the end of the semester, participants will have developed a broad understanding of how past climate change is studied and an in-depth understanding of several key problems that motivate current paleoclimate research.

Expectations
1) Diligent reading and active participation in weekly discussions.
2) Lead 1 or 2 Thursday discussions during the course of the semester.
3) A final paper on a current topic in paleoclimatology that integrates information obtained from multiple methods.