Syllabus: Geo 538, Paleoclimatology (Spring, 2004)

Introduction (lectures)
* Friday, Feb. 6: Ocean and atmosphere dynamics relevant to glacial-interglacial climate change
* Friday, Feb. 6: Signature features of the Pleistocene and Holocene climate records
* Monday, Feb. 9: Isotopes in paleoclimate

What was the climate of the ice age world, and how was it maintained?
* Monday, Feb. 16: Extent of the ice sheets
* Friday, Feb. 20: Isotopic constraints on glacial temperatures and ice volumes
* Friday, Feb. 20: Faunal, alkenone, and Mg/Ca paleotemperatures in the tropics
* Monday, Feb. 23: Faunal, alkenone, and Mg/Ca paleotemperatures in the tropics, continued
* Monday, March 1: Continental paleoclimates, Snowlines during the LGM
* Friday, March 5: Continental paleoclimates, continued
paleoclimate record spanning the past 25,000 years in Southern East Africa, Science, 296, 113-132 (but note that the article is only 4 pages).


* Monday, March 8: Guest lecture, Jess Adkins, Caltech
* Friday, March 12: Environmental models of the LGM

**What was the nature of the 100 kyr climate cycle, and what was its origin?**

* March 22: Lecture
* March 26:

* March 29: Climate terminations:

What was the nature of rapid climate change events, and what were the dynamics?
* Friday, April 2
o Evidence for a connection between rapid climate change and the ocean conveyor circulation: Patrick: Elliot, Mary, Laurent Labeyrie, and Jean-Claude Duplessy (2002) Changes in North Atlantic deep-water formation associated with the Dansgaard-Oeschger temperature oscillations (60-10 ka), Quaternary Science Reviews, 21, 1153-1165.

* Monday, April 5 (2 hour class)
o Modeling studies of the relation between the conveyor circulation and rapid climate change: pro and con: Yi: Stocker, Thomas F., and Johnsen, Sigfus (2003) A minimum thermodynamic model for the bipolar seesaw, Paleceanography, 18, 1087, doi:10.1029/2003PA000920. Your guess is as good as mine as to what all these numbers mean.

How did climate change shape the physiological and cultural evolution of man during the past 50 kyr, up to the Holocene?
* Monday, April 12
  o Overview (1 hour lecture): Michael
* Friday, April 16
o Climate, megafaunal extinctions, and the appearance of man in Australia


* Monday, April 19

o Late glacial climate history of Beringia, Bering land bridge, and the appearance of man in the Americas Class paper: Kelly, Robert L. (2003) Maybe we do know when people first came to North America; and what does it mean if we do? Quaternary International, 109-110, 133-145.


What are the major climate changes of the Holocene, and have these been influenced by man?

* Friday, April 23

o Overview (1 hour lecture): Michael


* Monday, April 26


* Friday, April 30


