

Earth 290T – Paleoceanography/Paleoclimatology

Winter 2015

Long and Short-term Coupling of the Carbon Cycle – Climate

Week 1 – Organization and overview of modern carbon cycle, ocean, terrestrial budgets/Models

Week 2 – Dynamics/Nutrients -Biological Pump/Feedbacks in the Carbon Cycle

Week 3 – Case Studies: Phanerozoic/Permian-Triassic Extinction

Week 4 – Case Studies: End-Triassic/ Cretaceous-Paleogene Extinctions

Week 5 – Case Studies: Paleocene-Eocene

Week 6 – Case Studies: Paleocene-Eocene

Week 7– Case Studies: MECO - Eocene-Oligocene Transition (Glaciation)

Week 8 – Case Studies: O/M and Mid-Miocene Monterey

Week 9 – Case Studies: Plio-Pleistocene

Week 10– Case Studies: Pleistocene - Glacial-Interglacial

290T Readings: Go to Ecommons

Week 1 –

Archer et al 2004; Cox et al 2000; Houghton et al 2004; Le Quere et al 2010

Week 2 – Dynamics/Nutrients -Biological Pump/Feedbacks in the Carbon Cycle

Falkowski et al 2004; Frank et al 2010; Steinarcher et al 2010; Stocker et al 2010; Davidson & Janssens 2006; Heiman & Reichstein 2008; Thorton et al 2009

Week 3 – Case Studies: Phanerozoic/Permian-Triassic Extinction

Cui et al 2010; Luo et al 2014; Meyer et al 2011; Montenegro et al 2011

Week 4 – Case Studies: End-Triassic/ Cretaceous-Paleogene Extinctions

Rampino et al 2011; Ruhl et al 2011; Schaller et al 2011; 2012; D'Hondt et al 1998; 2005; Hull et al 2011; Kump et al 1991; Sibert et al 2014

Week 5 – Case Studies: Paleocene-Eocene

Bains et al 1999; Farley and Eltgroth 2003; Kelly et al., 2010; Dickens et al 2011; Carozza et al 2011;

Week 6 – Case Studies: Paleocene-Eocene

Bowen et al 2013; DeConto et al 2012; Wieczorek et al 2014; Zhou et al 2014

Week 7– Case Studies: MECO - Eocene-Oligocene Transition (Glaciation)

Merico et al 2006; Griffiths et al 2010; Coxall and Wilson 2010; Basak and Martin 2013; Egan et al 2013; Goldner and Huber 2014

Week 8 – Case Studies: O/M and Mid-Miocene Monterey

Zachos et al 2001; Palike et al 2006; Badger et al 2013; Mawbey et al., 2013; Holburn et al 2014

Week 9 – Case Studies: Plio-Pleistocene

Sigman and Boyle 2000; Toggweiler et al 2006

Week 10– Case Studies: Pleistocene - Glacial-Interglacial

Adkins et al 2013; Hoogakker et al 2015

Readings

Week 1:

Kroopnick 1985