

**CCSM Biogeochemistry Working Group Meeting
Future Science Directions: Spring 2005 Meeting
31 March and 1 April 2005**

Short term plans (2-3 years):

Linking components in CCSM3:

- Repeat fossil fuel simulations—pre-industrial→future
 - C4MIP—spin ups started or ready to go
 - Ocean coupling: needs plan

- Include dust coupling with carbon

For the next version of the CCSM(4)→ prognostic carbon included as part of tuned system!

IPCC Assessment 5 plans (2011→runs done 2009?):

AIMES/WGCM→ coordinate planning for AR5

- Include coupled-carbon runs that are intercomparable
- Agreement on non-CO₂ forcings
- 3 years to decide how many couplings, which ones would be included
 - include chemistry/carbon coupling

Plans for computing requirements, other resources will limit what we can do.

From radiative forcing perspective (this sells to physical scientists), need e.g. methane (e.g. pigs)

- for methane need water flooding, plus biogeochemistry
- anthropogenic or climate portion dominates????
- Important to make sure methane balances (concentration vs. fluxes)

“Manage expectations” set our own agenda

- need something ‘exciting’ but believable
- Improve our diagnostics of existing carbon coupling model simulations (avoiding physical biases??)

One alternative: C/N/Fe, with consistent other radiative forcing

- Tropospheric/stratospheric ozone
- Also sulfur?
- Methane, halogens
- Paleoclimate: e.g. LGM carbon dioxide

2 approaches:

- Entrepreneurial (neat new stuff)
- IPCC AR5 requirements