where next?

- continue to evaluate/understand CESM-WACCM4
  current known issues:
  - (1) cold pole problem
  - (2) LS temperature trends

- migration to CAM5 physics → ongoing

- add an internally generated QBO

- GEOMIP

- prepare for Wyoming
  → HOMME dynamical core evaluation
  → some short hi-resolution runs

WACCM-lite…?

+versions of WACCM with "modest" computational resources…?

\+ an example (from yours truly)

- at Columbia we have a 1-year old beowulf cluster
- for about \$120K we got 34 nodes with 8 cores each (272 cores)

\+ our timings:

CAM3 – AMIP (1 node/8cores): 5 hrs/year
CAM4 – AMIP   "   : 9 hrs/year
CESM-WACCM   "   : 9 hrs/month

\+ bottom line: a single 50-year run ~ 200 days > 6 months!

WACCM-lite…?

→ option 1: adopt a coarser grid ~3° FV core (Lauritzen/Neale)

→ option 2: resurrect the WACCM-'GHG' (specified chemistry)

→ option 3: use 'super-fast' chemistry + stratospheric mods

→ option 4: remove thermospheric physics (no ions / aurora)

→ option 5: high-top CAM (Bacmeister/Richter)

strat dynamics vs strat chemistry