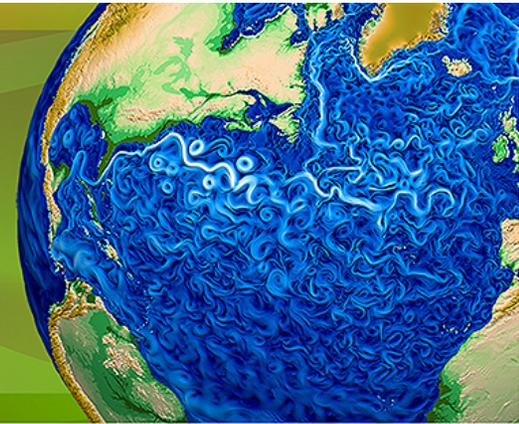




Accelerated Climate Modeling  
for Energy



# ACME Since November 2016:

*Nobody knew Earth system modeling could be so complicated!*

David C. Bader

Council Chair

June 5, 2017

# Project Turns Three on July 1, 2017

- Lots of hard work and progress by lots of people
- Substantially different components than v0
- Many lessons learned
- Computational challenges better defined, but more difficult than thought– e.g. KNL slower clock but greater parallelism that is hard to exploit
- All of the new developments will be used eventually

# Prior Revised Schedule for Next Proposal

June 1, 2017 - Progress Report describing accomplishments from Phase 1 of the project, accompanied by a Whitepaper for Phase 2

December 1, 2017 - ACME v1 code release to occur by; and

December 15, 2017 - Full proposal for ACME Phase 2 due

*Obviously – dates have slipped further*

*We have a grace  
period, but the next six  
months are critical!!!*

# Near Term Priorities and Deliverables (next 3 months)

- Working v1 low resolution model
  - Find the missing ENSO
  - Stable 1850 control simulation with “acceptable” biases
  - Start DECK runs
- “Production” High resolution configuration with acceptable throughput
- Infrastructure (SE and Workflow) review
- SFA Annual Report
- New Strategic Plan
- v1 component papers submitted
- Computer time requests submitted

# Intermediate Term Priorities (3-9 months)

- Production high resolution experiment underway
- Complete 1850 DECK low resolution Control Run
- Complete AMIP 1970-2010 Simulation
- 19<sup>th</sup>-21<sup>st</sup> Century Historical Run and other DECK simulations underway
- Release v1 model
- Write new white paper and proposal
- Complete v2 experimental plans and priorities for new development

# Next proposal

- Ambitions must be realistically achievable within budget
- Science groups will be organized around science questions
- Computer resources will continue to be a problem

# New Proposal, New Structure

- Integration and maintenance of project pieces requires a dedicated core.
- Further evolution toward structure that addresses science questions.
- New structure will be scalable to all budget levels
- 50% scientific developers and analysts, 25% next-generation software and performance, 25% infrastructure
- Desire for core to be comprised of staff working 75%-100% on ACME
  - 75% may not be achievable in all cases
  - Less than 50% not viable

# What YOU can do

- Try to tune out the budget chaos to the degree possible.
- Complete what you have started – papers, codes Discussions of next round of Science Question Simulation Campaigns that will inform Model development priorities

# What WE Will Do

- Be transparent in our actions and decisions
- Listen to input from everyone
- Respond to your concerns as honestly and directly as possible
- Act in the best interest of the project, not our own institutions