

## **CAM Development Plan**

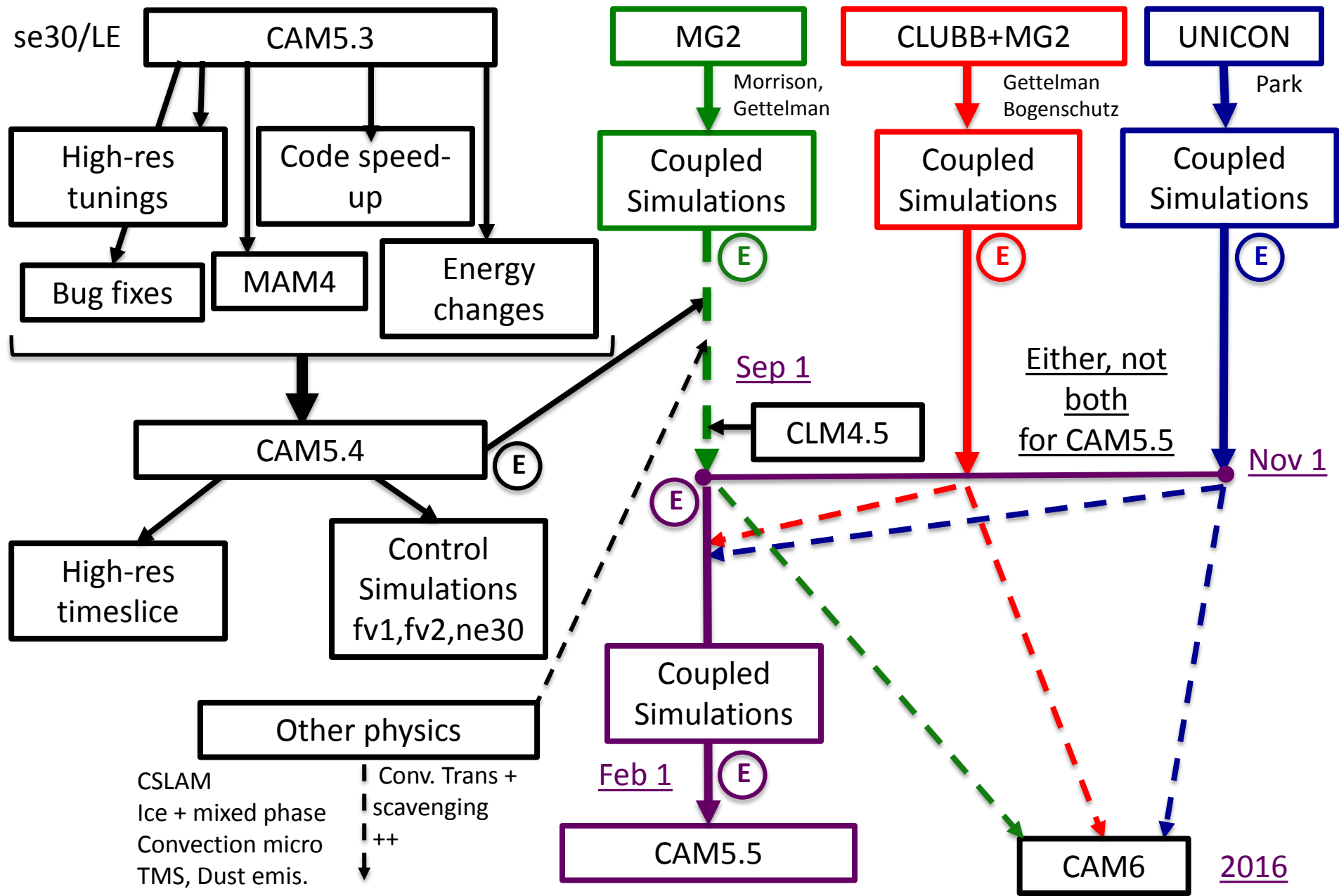
**CAM5.4**

**CAM5.5**

**Toward CAM6 and CESM2**

## **AMWG Strategic Plan**

## **Near-Term Science Priorities**



# CAM Development Process

## CAM development protocols

- ✓ Code base and requirement
- ✓ Test steps and validation requirements

CAM standalone simulations

Coupled model simulations

Software engineering test

- ✓ Review of code and results
- ✓ Decision process

[http://www.cesm.ucar.edu/working\\_groups/Atmosphere/Reports/AMWG\\_DeveloperGuidelines\\_May13.pdf](http://www.cesm.ucar.edu/working_groups/Atmosphere/Reports/AMWG_DeveloperGuidelines_May13.pdf)

# **AMWG Strategic Plan**

**Goal 1: Build robust community tools for model diagnostics and analysis**

**Goal 2: Understand model behaviors**

**Goal 3: Reduce model biases**

**Goal 4: Promote education and community participation**

**To address CESM Science Questions  
and  
AMWG Challenges**

# **1: Build robust community tools for model diagnostics and analysis**

- **Diagnostic packages (AMWG, Variability#)**
- **Single column model**
- **Simpler model configurations**
- **Initialized experiments**
- **Data assimilation capabilities (DART)**
- **Specified/dynamics nudging**
- **Column radiation model/port**
- **Satellite simulators**
- **Asynoptic output**

## **2: Understand model behaviors**

- **Sensitivities to physics**
- **Sensitivities to resolution**
- **Cloud feedback**
- **Aerosol indirect effect<sup>#</sup>**
- **Modes of variability in circulation/precipitation**
- **Atmospheric phenomena of high societal impact**
- **Coupled behavior with other CESM components<sup>#</sup>**

### **3: Reduce model biases**

- **Mean climate**
- **Double ITCZ**
- **MJO and other tropical transient variations**
- **Full characteristics of precipitation (amount, distribution, intensity, frequency, and timing such as diurnal cycle).**
- **Monsoons**
- **Biases in coupled system<sup>#</sup>**

## **4: Promote education and community participation**

- **Tutorials**
- **Workshops**
- **Close collaborations with other WGs**
- **Protocol of incorporating new codes**
- **Maintenance and release policy**
- **Model application user groups**



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**Science Priorities**

## **Near-term Priorities:**

- ✓ **Test of alternative convection schemes**
- ✓ **Sensitivity of model physics to resolutions and scale-aware parameterizations**
- ✓ **Reduction of systematic model biases**

**??**