

# **13th CMMAP Team Meeting**

## **August 7-9, 2012**



**No one from NSF is at this meeting. Eric DeWeaver said that he needed to use his travel money to go to places that “are not in as good shape as CMMAP.”**

**The EC and a few others visited NSF in May for our annual evaluation. The review went very well.**

**In ~May 2013, we will be site-visited again.**

# External Advisory Panel



**Brian Mapes, Chair**

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**Indira Nair**

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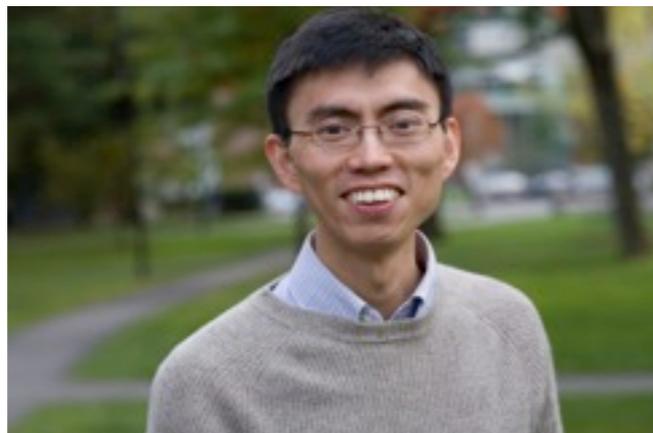
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**Zhiming Kuang**

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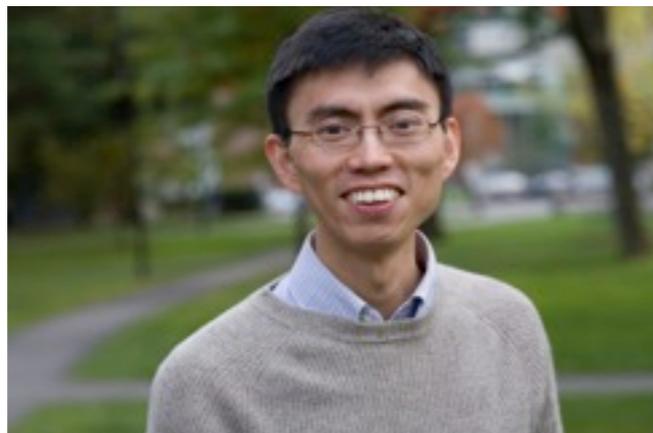
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**Zhiming Kuang**



**Mike Wehner**

# ED Retreat, yesterday



# 2012 Summer Interns



# Summer schools

- ◆ **GFDL**
- ◆ **DCMIP (organized by Christiane Jablonowski et al.)**
- ◆ **NCEP (2013)**



**CMMAP's unique role, within the climate research community, is to take advantage of its academic setting, sustained funding, and talented research team to attack important research problems that are too risky to undertake in a mission-oriented center or laboratory that is constrained by operational or quasi-operational deadlines and commitments.**



# Research Objectives, Renewal

- 1. Further development of global models with diverse representations of cloud processes.**
- 2. Further development and testing of improved parameterizations of microphysics, turbulence, and radiation.**
- 3. Application of CMMAP models to study multiscale interactions of the atmosphere and land-surface.**
- 4. Application of CMMAP models to study the coupled climate system.**
- 5. Community-based evaluation of results produced by CMMAP models, through the use of diverse observations.**
- 6. Management, analysis and visualization of very large model output datasets.**

Work with the  
first-generation  
MMF

Q3D MMF

Unified  
Parameterization

Global Cloud  
Resolving Model

**We are fully in control of these projects.**

# New parameterizations for CRMs

Radiation

Microphysics

Turbulence

Aerosols

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Radiation

**RRTM**  
**McICA**

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Aerosols

**Ghan-Gettleman-Wang**

# New parameterizations for CRMs

Radiation

**RRTM**  
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Microphysics

**Morrison-Grabowski**

Turbulence

**NASA**  
**Utah**  
**CSU**  
**CLUBB**

Aerosols

**Ghan-Gettleman-Wang**

**Coupled tests are needed.**

# Evaluation of Turbulence Parameterizations

- ◆ **Participation by IHOP, DHOC, CLUBB, and THOR**
- ◆ **Tests in SAM, SP-CAM, CAM, and the GCRM**
- ◆ **Evaluation based on:**
  - ▲ **Numerical results**
  - ▲ **Theoretical merits,**
  - ▲ **Computational performance**
- ◆ **DOE funding**

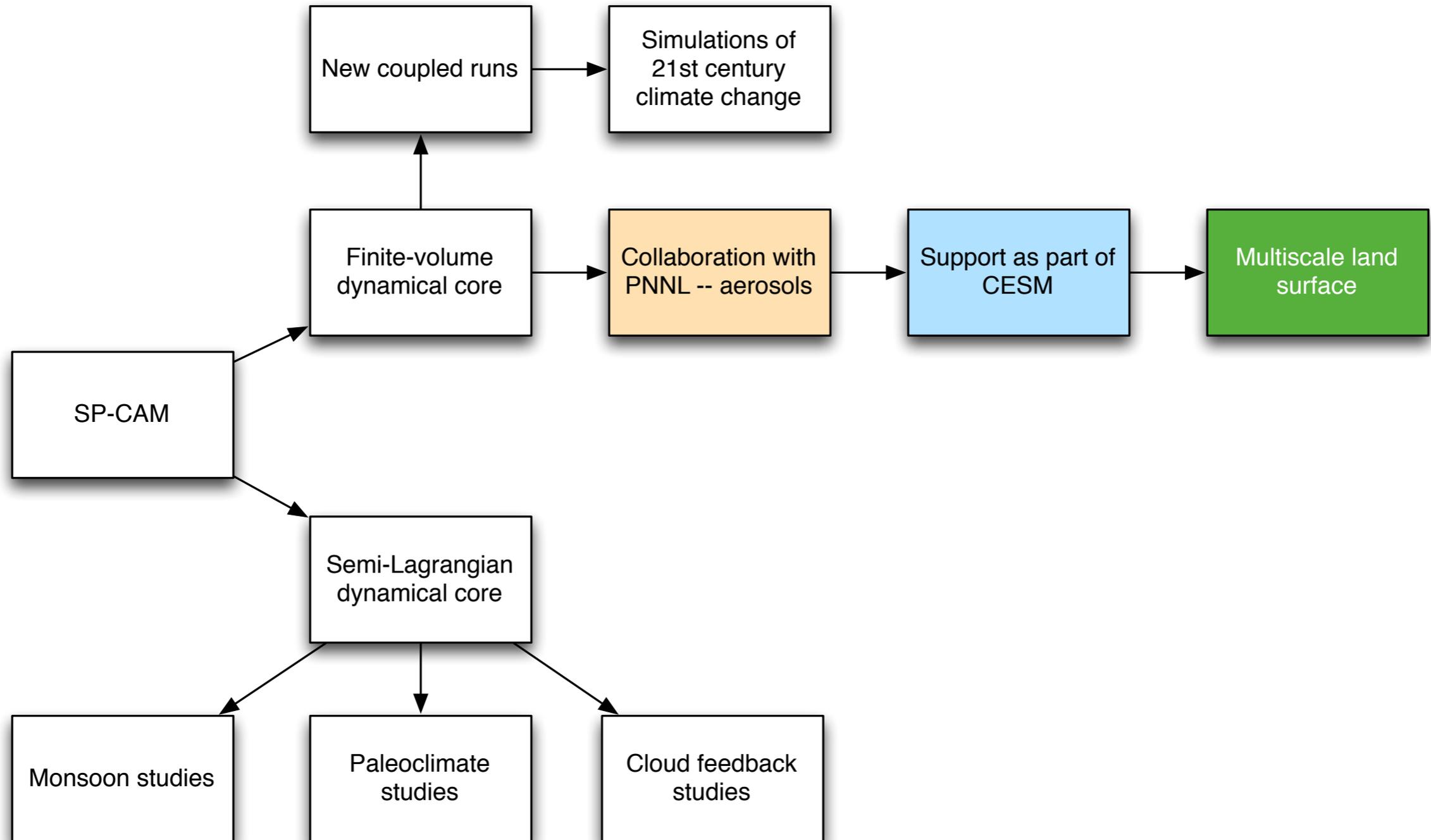




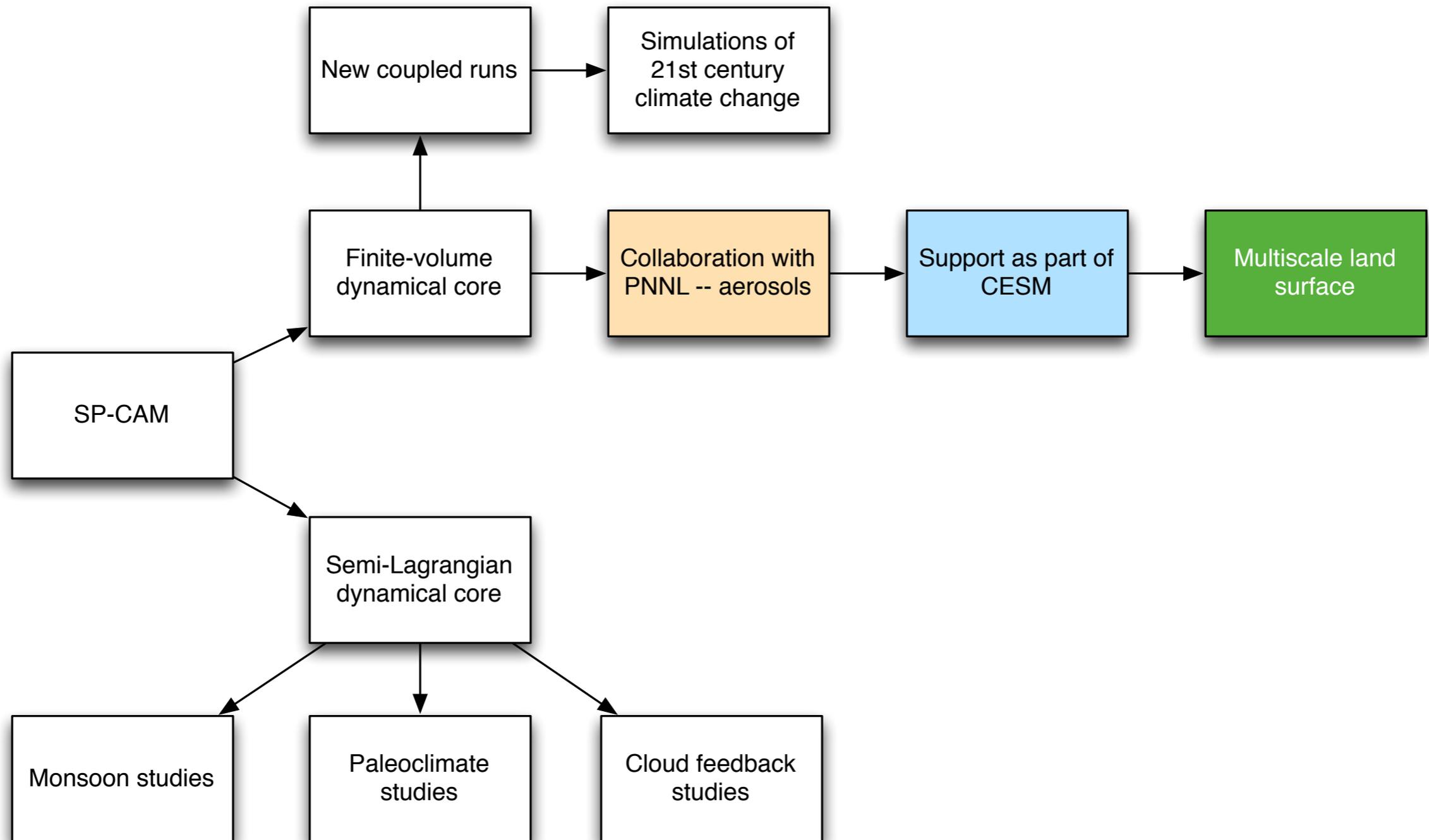
**We are planning a second Giga-LES.**

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# Research with the evolving SP-CAM



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**We have only partial control of these various projects.**

Q3D MMF

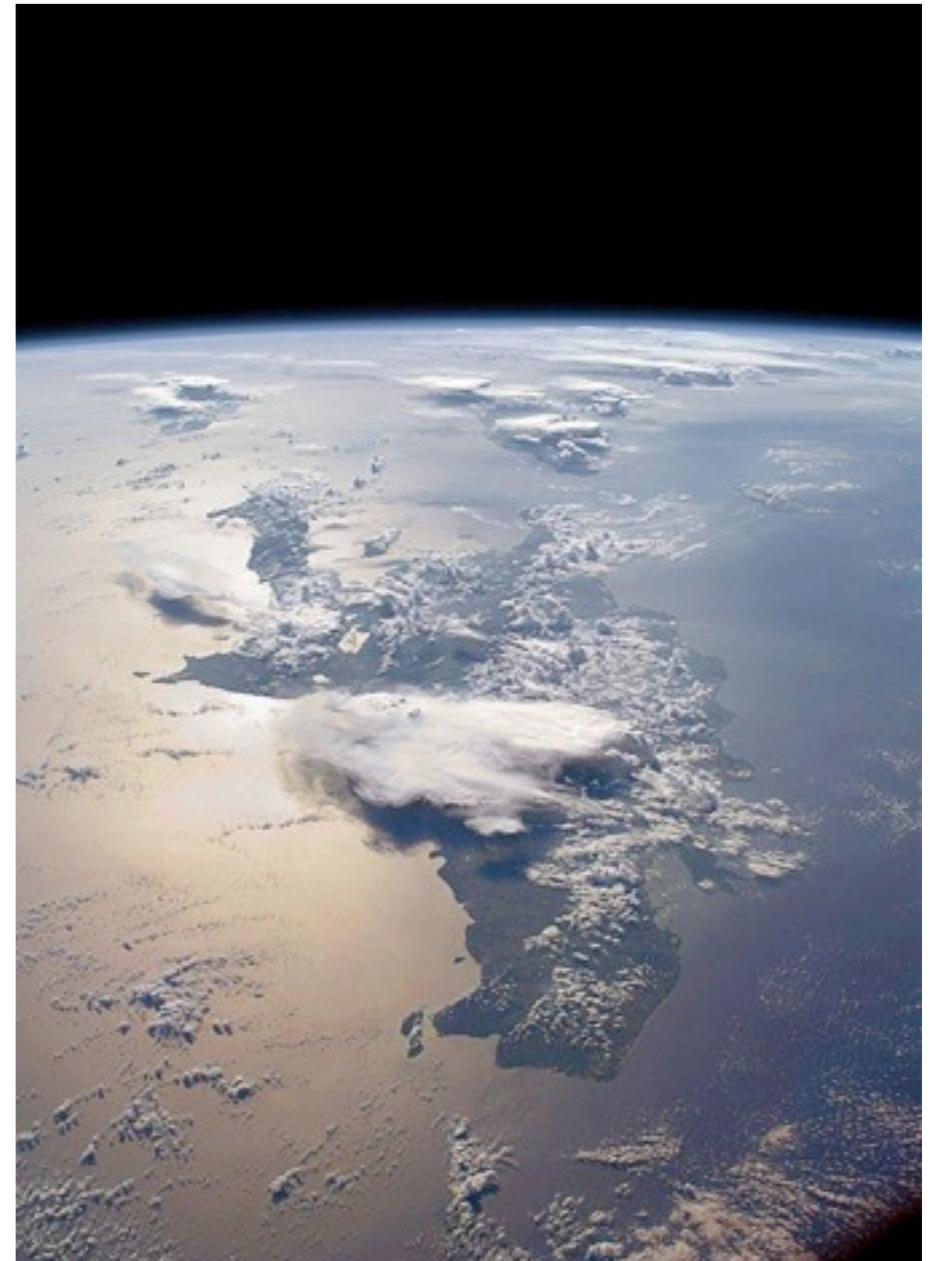
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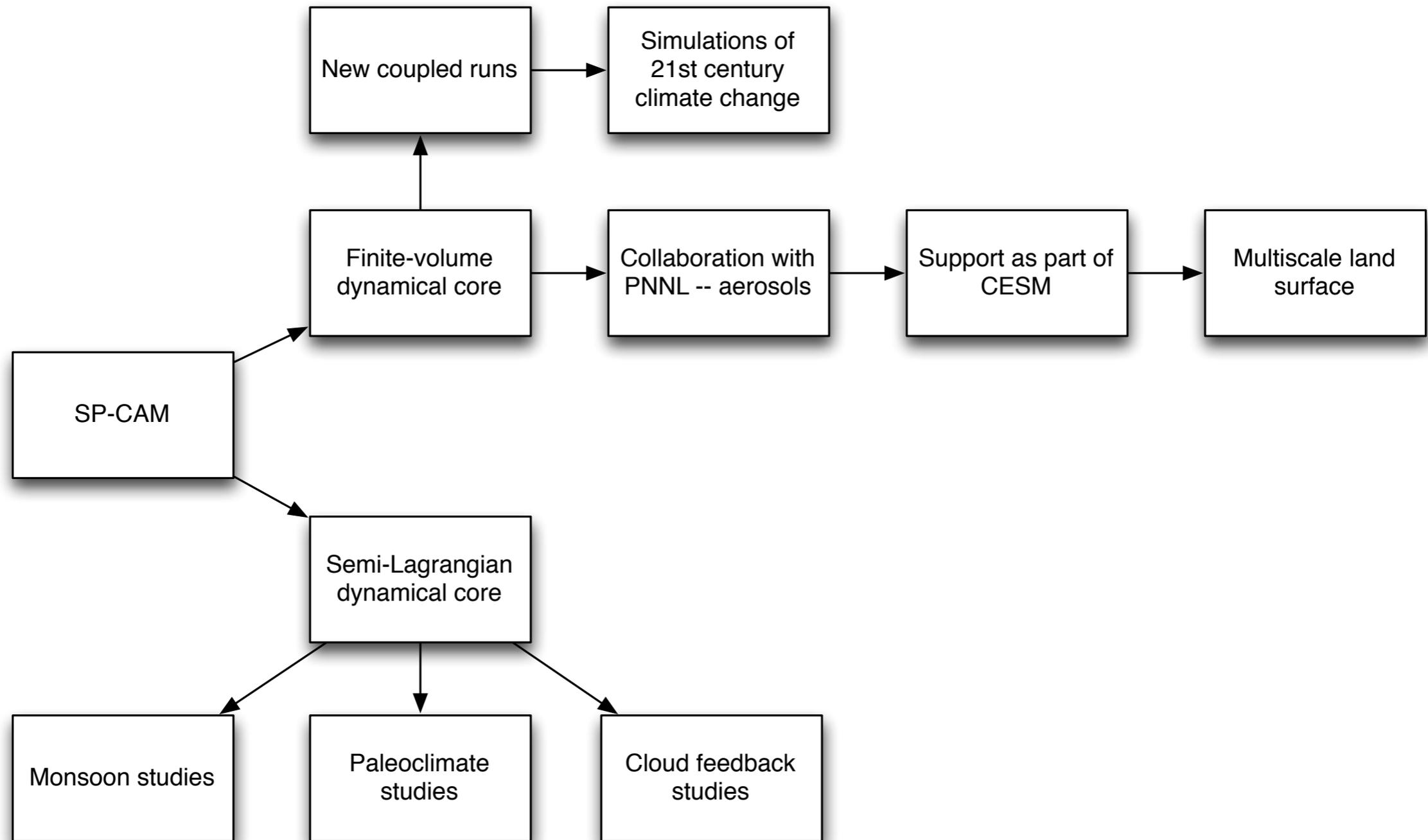
**We are fully in control of these projects.**

# Multiscale Methods for Accurate, Efficient, and Scale-Aware Models of the Earth System

- ◆ **Atmosphere and ocean, including “scale-aware cloud and convection”**
- ◆ **SciDAC lab proposal with University collaborators**
  - ▲ **LANL, LBNL, LLNL, ORNL, PNL, SNL**
  - ▲ **CSU, NCAR, UCLA, UWM**
- ◆ **DOE funding**



# Research with the evolving SP-CAM



# Legacy

- **We want to do a long list of interesting things.**

# Legacy

- **We want to do a long list of interesting things.**
- **We want to do them well.**

# Legacy

- **We want to do a long list of interesting things.**
- **We want to do them well.**
- **We want to “finish” them.**

# **CMMAP 13th Team Meeting**

**August 7 - 9, 2012**

**Tuesday, August 7, 2012**

<b>8:30</b>	<b>David Randall</b>	<b>Opening remarks, Agenda, Logistics, and Updates</b>
<b>9:15</b>	<b>Minghuai Wang</b>	<b>SPCAM5: Multi-scale Modeling of Aerosols, Clouds, and Precipitation</b>
<b>10:00</b>	<b>Break</b>	
<b>10:15</b>	<b>Scott Denning</b>	<b>Education and Diversity</b>
<b>11:00</b>	<b>Rachel McCrary</b>	<b>The West African Monsoon: Insights from the MMF</b>
<b>11:45</b>	<b>Lunch on your own</b>	
<b>1:15</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session # 1 - Cloud feedback and CyberInfrastructure</b>
<b>3:15</b>	<b>Break</b>	
<b>3:30</b>	<b>Breakout - Team Leads</b>	<b>Prepare for Working Group Summaries</b>
<b>4:00</b>	<b>Working Group Summaries</b>	
<b>4:30</b>	<b>Katie McShane</b>	<b>Climate Change and Environmental Ethics</b>
<b>5:15</b>	<b>Break for Dinner</b>	
<b>6:00</b>	<b>Team Dinner - Dave Randall's House</b>	

# **CMMAP 13th Team Meeting**

**August 7 - 9, 2012**

<b>Wednesday, August 8, 2012</b>		
<b>8:30</b>	<b>Hiroaki Miura</b>	<b>Recent activities of the NICAM group and our scientific targets on K-computer</b>
<b>9:15</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #2 Multiscale Land Surface and Physical Processes</b>
<b>10:00</b>	<b>Break</b>	
<b>10:15</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #2 Continues</b>
<b>11:30</b>	<b>Lunch on your own</b>	
<b>1:00</b>	<b>Gabe Kooperman</b>	<b>"Estimating global aerosol indirect effects: a method for reducing the influence of natural variability"</b>
<b>1:45</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #3 - Sustainability and Dynamical Framework</b>
<b>3:00</b>	<b>Break</b>	
<b>3:15</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #3 - Continues</b>
<b>4:00</b>	<b>Prepare for Working Group Summaries</b>	
<b>4:30</b>	<b>Working Group Summaries</b>	
<b>5:00</b>	<b>Melinda Laituri</b>	<b>Cultural Uses of GIS and Intersects with Climate Science</b>
<b>5:45</b>	<b>Break</b>	
<b>6:00</b>	<b>Poster Session and Reception at the Hilton Hotel</b>	

# **CMMAP 13th Team Meeting**

**August 7 - 9, 2012**

<b>Thursday, August 9, 2012</b>		
<b>8:30</b>	<b>Tony Del Genio</b>	<b>Conventional Cumulus Parameterization - Dead and Loving It</b>
<b>9:15</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #4 - Climate Change and Knowledge Transfer</b>
<b>10:15</b>	<b>Break</b>	
<b>10:30</b>	<b>Breakout - Team Leads</b>	<b>Breakout Session #4 continues</b>
<b>11:30</b>	<b>Prepare for Working Group Action Items</b>	
<b>12:00</b>	<b>Lunch on your own</b>	
<b>1:30</b>	<b>Working Group Action Items</b>	
<b>2:00</b>	<b>Dave Randall</b>	<b>Wrap-Up</b>
<b>2:30</b>	<b>END OF MEETING</b>	

# **CMMAP 13th Team Meeting**

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## **List of Breakout Sessions:**

	<b>Breakout Session #1 Tuesday PM</b>	<b>Breakout Session #2 Wednesday AM</b>	<b>Breakout Session #3 Wednesday PM</b>	<b>Breakout Session #4 Thursday AM</b>
<b>Main Meeting Room - Salon III</b>	<b>Cloud Feedback</b>	<b>Physical Processes</b>	<b>Dynamical Framework</b>	<b>Climate Change</b>
<b>Breakout Room - Green &amp; Gold Room</b>	<b>Cyber- Infrastructure</b>	<b>Multiscale Land Surfaces</b>	<b>Sustainability</b>	<b>Knowledge Transfer</b>

# Minghuai Wang

Pacific Northwest National Laboratory

