

NOAA Climate Variability and Change Science Challenge Workshop

Toward Understanding and Predicting Regional Climate Variations and Change

**September 20-22, 2011
NOAA/Earth System Research Laboratory
Boulder, Colorado**

Meeting Strategy

Approach: Focus on specific high priority regional science problems where significant scientific progress is possible over the next 5-6 years. In the plenary sessions, introduce examples of outstanding problems in understanding and predicting regional climate variations and change, including extreme events. These plenary presentations are intended to help focus breakout discussions on key challenges, gaps, needs and opportunities in observations, process understanding, and modeling of regional climate variations and change. The findings of this workshop will inform the development of research priorities and directions in NOAA's new Five-Year Research Plan.

Day 1: Regional Climate Science: Identifying the Challenges

Plenary Presentations

8:30 am Welcome and Introduction - Meeting Background, Objectives and Organization
(Randy Dole)

Overview presentations (Randy Dole, Chair)

8:45 am - Serving society: Benefits of regional climate information (Steve Zebiak)

9:15 am - Outstanding challenges in regional climate trends and variations (Marty Hoerling)

9:45 am - Regional climate and extreme events: severe convective storms (Harold Brooks)

10:15 am - *Break*

Toward Understanding Regional CVC (Leo Donner, Chair)

10:30 am - Tropical climate variations and change and regional implications (Gabe Vecchi)

11:00 am - Heat waves, droughts, and regional climate trends: Ocean and land influences
(Siegfried Schubert)

11:30 am - Impacts of aerosols on climate (John Ogren)

12:00 pm - Arctic climate variations and change (Clara Deser)

Lunch, including presentation (12:30 pm – 1:30 pm)

12:45 pm - A climate observing system for global and regional science and applications (Ed Sarachik)

Plenary Session (Robin Webb, Chair)

Toward Predicting Regional CVC (Robin Webb, Chair)

1:30 pm - Overview of global modeling issues (Leo Donner)

1:50 pm – High-resolution global models for simulation and prediction of extreme events and their applications to regional climate (S-J Lin)

2:10 pm – Key regional challenges from the CPC perspective (Wayne Higgins)

2:30 pm - Predictability, predictions and the role of attribution (Lisa Goddard)

3:00 pm - Open discussion, with presenters as panelists

3:25 pm - Charge to breakout groups (Randy Dole)

3:30 pm - Break

3:45 pm - ***Breakout group discussions***

Focus on refining key challenges, end-to-end perspective – take advantage of cross-disciplinary expertise in discussions.

- Are there specific high priority problems where near-term progress is feasible?
- What are the critical gaps limiting progress?
- Are there common challenges that cut across several problems that, if addressed, would allow progress on multiple problems?

5:15 pm - *Plenary* – Brief summary of day, next steps (Randy Dole)

5:30 pm – End of day 1

6:30 pm – Group dinner for those interested (Chautauqua)

Day 2: Regional Climate Science: Key Gaps, Needs and Opportunities

Breakout sessions (continued)

8:30 am – Breakout groups reconvene on science challenges and gaps

10:00 am - Break

Plenary session

10:30 am - Breakout group report out – science challenges, high-priority problems and gaps

11:30 am - Open discussion and synthesis

Lunch, including presentation (12:00pm – 1:30 pm)

12:30 pm - Challenges in Communicating What Know - and Don't Know - About Regional Climate Variations and Change: A Perspective from the Front Lines (Andrew Freedman)

1:30 pm – *Breakout group discussions*

What steps are needed to address key gaps in observations, process understanding and modeling?

What are opportunities to address regional science challenges and improve regional climate understanding and predictions, especially over the next ~5-6 years?

How can NOAA work together with partners to address these challenges?

3:30 pm – Break

3:45 pm – Breakout group discussions (cont.)

Begin summarizing/drafting findings on needs and opportunities for advances.

5:30 pm – End of day 2

Day 3: Regional Climate Science: Recommendations for Advances

Plenary session

9:00 am - Breakout group summaries – opportunities, needs and partnerships

10:00 am - *Break*

10:30 am - Open discussion - Initial summary of findings; next steps

12:00 pm - Meeting Conclusion