

NOTE!

- Goals and Programs formulate budgets
- NOAA submits budgets by Line Office
- Line Offices organizations receive funds and execute – CRM is spread across OAR and NWS.

Integration

- CRM is new
- Integration is not mature
- Opportunity

NOAA's Role in Assessments

- How has NOAA science contributed to the major results from the recent assessments?
- How can the outcomes from these assessments, particularly the statements on the unresolved issues and uncertainties, be used by NOAA to steer prioritization of future research?

Integration Between the Climate Programs

- To what extent have the accomplishments of the CRM program impacted activities in the other Climate Goal programs: Climate Observations and Monitoring, and Climate Service Development (and their precursors) and vice versa?
- How does research and modeling supported by the CPO competitive grants program and at NOAA cooperative institutes align with climate research and modeling within NOAA? Do NOAA operational climate models (CFS, CM) make effective use of this research?
- How has NOAA's CRM Program coordinated with other NOAA programs in focusing research, developing priorities and addressing mutual needs?
- How has NOAA utilized *in situ* and satellite observations in its research? Should this be further enhanced within the CRM?

Integration Topics

- Integrating across programs
 - Climate Service Development
 - What is climate service?
 - Who are customers?
 - Emerging sector foci
 - What are their requirements? R. Rood
 - Are existing products and services effective?
 - Observations and Monitoring
 - Observation requirements
 - Data archive and access – (model based data sets)
 - Do R&M activities take advantage of these capabilities?
And vice-versa.

Integration within CRM

- Are the three CRM capabilities effectively working together to synthesize and deliver information needed by decision and policy makers, including regional attributions and manifestations of extreme events, abrupt change, and drought?
- How does research and modeling at NOAA cooperative institutes and other multi-year institutional grantees (ARCs, RISAs, IRI) align with related activities within NOAA and support the other Climate Goal programs?

Integration Topics

- Integrating within CRM – R2R
 - Structure
 - Hub and spoke labs/university(labs (ESRL, GFDL, NCEP), CIs, centers of excellence (ARCs), PI research)
 - Role of academic community (CIs, ARCs, PIs)
 - Recompetition of long-term institutional grantees
 - R2R (GFDL)
 - Climate Process Teams - valuable
 - Grant driven Research alignment good?
 - Role of lab research efforts (ESRL)
 - Scope and priorities:
 - Paleo; Climate – Hydrology; etc.
 - Emerging user interests (drought, ecosystems, etc.)
 - Computational requirements and priorities?
 - Deteriorating relationships within federal agencies

Integration Topics

- Integrating within CRM - Transition (R2O)
 - Institutional (GFDL → NCEP?)
 - Research to applications, etc. and O2R
 - recommendations/findings from CWG
 - Where is strategy for R2O, and R2O
 - Think big - JCurry
 - Test beds
 - Resources

Integration Topics

- Integrating within CRM – Operations (O2R)
 - Structure
 - Hub and spoke (NCEP, ARCs, CTB)
 - Test beds
 - O2R (who is the R? and how will it be engaged?, role of NSF?)
 - Priorities
 - Model improvements CFS1 → CFS2010
 - Multi-model ensemble (is there a NOAA strategy)
 - What are computational requirements for MME
 - Product and service maturity, priorities, development path, selection

Integration with National Agencies on Climate

- How are NOAA's partnerships with other Federal agencies, and other national and international partners faring? Are these successful?
- How can this coordination be improved and co-dependency established for mutual benefits and for jointly advancing the science and deliverables?

Overview Questions

- What have been the major accomplishments of NOAA's climate research and modeling efforts over the past 5 years?
- How is the research leading to scientific advancements and improved deliverables? How have the results been used? Do NOAA's operational climate prediction systems make effective use of research? How is research and operational progress measured?
- What are the current key challenges in NOAA's climate research and modeling program? Where are the gaps?
- Are NOAA's strategies, prioritization and investments in climate research and modeling consistent with the critical scientific questions and needs? Where is NOAA best poised to address the needs and gaps?
- How can NOAA enhance its role in addressing the principal research issues on climate variations and change facing the nation and the world? What is the unique role of NOAA's efforts in climate research and modeling? What are the synergistic research linkages with other Federal agencies and other partners?