

Advancing Climate Prediction Science

- Current Status
 - Weather: Well advanced and well coordinated between operational centers
 - Seasonal: Now operational at many centers
 - Decadal: Just starting under WCRP; many scientific questions will be addressed
 - Centennial: Effort is being coordinated under the WCRP; Many science questions will be addressed

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- Limitations
 - Science: Improved understanding of physical mechanisms and feedbacks
 - Tools for Making Predictions: Earth System Models involving various feedbacks; adequate observations and generating initial states
 - Technological and Resources: Computing; sustaining and enhancing the observing system
 - Natural Limits on Predictability: Realistic expectations on the delivery side Predictability limits

Advancing Climate Prediction Science

- Expected advances and how to achieve them
 - Basic science understanding of mechanisms that would lead to improved prediction skill (WCRP will play an important role)
 - Improve understanding of physical processes and feedbacks would lead to improved Earth System climate models
 - Computing advances and Model Resolution
 - Better coordination between operational centers