PSD Strategic Priorities and Review Themes

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Planning Process in Four Steps

1) Something new  (Scientists)

2) Something new  (Reorganization)

3) Review  (You)

4) Renew  (the Plan)
Core Strategic Factors
PSD Scientific Expertise

- Problem-focused observations

- Physical Sciences Research
  - Processes
  - Phenomena
  - Predictability
  - Predictions

+ Partnerships
Science and Societal Challenges

Priority research areas:

• Extremes

• Water

• Arctic
From the Past to the Future: Example

An integrated information system for decision support on water-related risks and impacts

Examples of potential PSD Contributions

**Past to Present:** Reanalyses, attribution, and assessments of past and ongoing conditions and their impacts. Improved real-time observations and monitoring.

**Future:** Seamless forecasts of water-related risks across time scales

Needs for observations, process understanding and user interactions extend across all time scales
PSD Draft Strategic Goals

Overarching Science Goals (adapted for presentation)

1. Develop new knowledge and capabilities to explain observed weather and climate extremes, variations, trends, and their impacts.

2. Identify new sources of predictive skill and improve predictions of weather, water, and climate through physical sciences research and observations.
Priority Research Goals

1. Rigorously characterize and predict weather, water, and climate extremes and their uncertainties.

2. Develop scientific capabilities to predict conditions associated with too much and too little water.

3. Increase process understanding of the coupled Arctic system and Arctic-lower latitude interactions to improve forecasts.
Summary of Strategic Priorities

Overarching Science Goals
1. **Understand** (explanations are the product)
2. **Predict**

Priority Research Goals
1. Extremes
2. Water
3. Arctic

Key science questions, research objectives, and indicators of success are defined for each Goal.
Review Themes

The **Oral Sessions** are organized by capabilities:

1. **Observing** the Physical System (next)
2. **Understanding** the Physical System
3. **Modeling** the Physical System
4. **Research to Applications, Operations and Services**

Together, these constitute a connected, end-to-end system. They are best understood in this context.