Theme 4: Research to Applications, Operations and Services

Serving Stakeholders - Summary

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Science Review
12-14 May 2015
Boulder, Colorado
Other presentations on R2X

- **Darren Jackson** – “Description and capabilities of an automated objective technique for identifying atmospheric rivers”
- **Katherine McCaffrey** – “XPIA: Development of remote sensing techniques for renewable energy applications”
- **Henry Winterbottom** – “High resolution ensemble data assimilation for operational hurricane prediction”
- **Michael Alexander** – “Impact of Climate Variability and Change on Marine Ecosystems”
- **Andrea Ray** – “Stakeholders interactions to improve the use of climate information”
- **Donald Murray** – “FACTS data access and visualization”
- **James Scott** – “The climate change web portal”
- **Catherine Smith** – “PSD web-based visualization and analysis tools” (*)

(*) AMS Award
PSD 2016-2020 Strategic Goals

• Rigorously **characterize** and **predict** weather, water, and climate **extremes** and their uncertainties to inform decision-making

• Develop **new processes understanding observational and modeling capabilities** to predict conditions associated with too much or too little water for improved early warnings and to inform preparedness and resource management decisions

• Develop new knowledge and capabilities to explain observed climate trends, variations, and extreme events and their impacts to **inform risk management and adaptation decisions**
Notable Successes

- **Long term institutional knowledge**
  *(seasonal forecast guidance for California precipitation since 2008)*

- **Synergy between observations and models**
  *(observations used to evaluate NOAA's operational model products)*

- **Risk tolerance**
  *(simulation and optimization approaches for water management)*

- **Collaborations**
  *(field campaigns in partnership with other NOAA and external groups)*

- **Quality, Relevance and responsiveness**
  *(new tools relevant to societal needs providing information when needed)*

- **Technology transfer**
  *(advances transferable to other regions and to other regional problems and integrate well into national services and applications)*
Future Directions

- **Understand, predict and prepare**
  
  *Science to inform climate change adaptation and mitigation*
  
  *Rigorously characterize and predict weather, water, and climate extremes and their uncertainties to inform decision-making*
  
  *Develop new methods to understand observational and modeling capabilities and better predict extreme conditions for improved early warnings and resource management*

- **Technology transfer**
  
  *Develop technology in partnership with others and make PSD's innovations transferable to other regions and other regional problems*

- **Accessibility**
  
  *Make results from PSD R&D readily available to stakeholders and the public*
What You Heard

James Wilczak: “The Wind Forecast Improvement Projects: WFIP and WFIP2”

Klaus Wolter: “Improving seasonal forecasts to help with drought planning in California”

Allen White: “Developing data tools and products in support of research to applications”

Lynn Johnson: “A "Sea to Summit to Sea" approach to improve management of water resources”