

RECLAMATION

Managing Water in the West

S2S Forecasting Activities

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S2S Forecasting and Reclamation

- Water Allocations
- Flood
- Drought
- Stakeholder Planning
- Environment

Reclamation Modes for S2S Research

- Prize Competitions
 - Posting date, duration are flexible
 - Community of solvers
 - S2S flood/drought extremes competitions in development
- Research
 - Annual call
 - Brokered, solicited
 - Universities, internal, other federal agencies, state agencies, others
 - Several current projects with S2S application

How Competitions Work

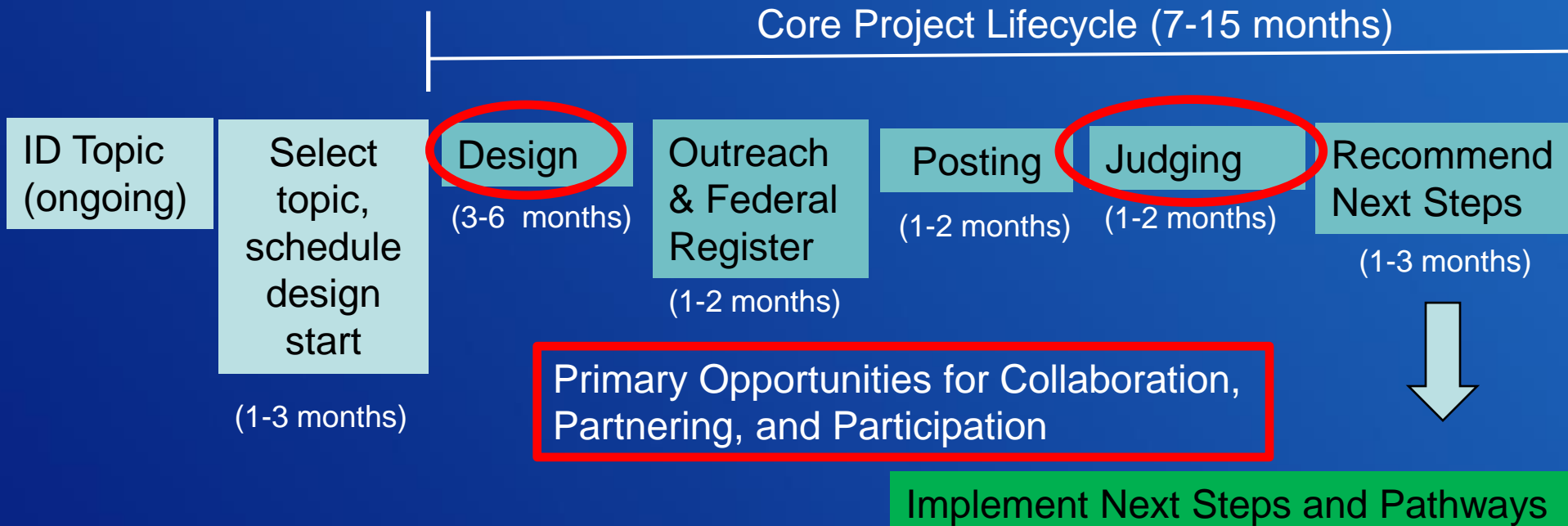
- Issue a national challenge to solve a specific, typically difficult problem.
- Establish monetary and/or non-monetary incentive prizes.
- Winners must achieve predetermined performance metrics established by sponsors.
- Anyone can compete at their own risk (limitations on federal employees).

When to Use Competitions

Problems that are typically better suited for solving through prize competitions:

- An adequate or strong solution has been evasive or expensive.
- You find yourself saying that somebody, somewhere probably knows a better way of doing this.
- Market forces may not provide appropriate incentives to solve...or solve well.
- You would like to reach beyond the usual sources of potential solvers and experts that commonly work in your domain.

Workflow and Small “Online Crowdsourcing” Competitions



The Benefits of Federal Collaboration

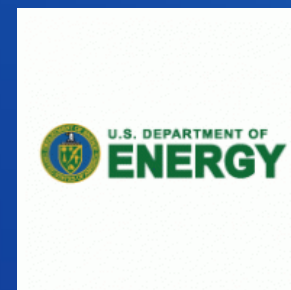
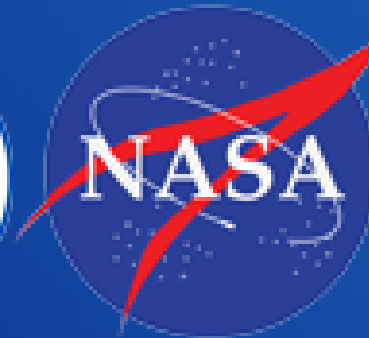
1. Leverages collective Federal capabilities
2. Ensures a federal solution does not already exist
3. Avoids duplication
4. Catalyzes interagency working relationships
5. Better defines and solve joint problems
6. Solutions will have broader impact
7. Better serves the stakeholders and the public
8. Consultation across federal gov't required by prize competition law

Feds Utilizing Prize Competitions



US Army Corps
of Engineers
*Engineer Research and
Development Center*

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce




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Innocentive Pavilion

Solvers Our Offering Challenge Center Resources



Water Pavilion



Water PRIZE COMPETITION CENTER

You Are Viewing: **Water** X

Show Challenge Types: ☒ All ☐ Ideation ☐ Theoretical ☐ RTP ☐ eRFP

Title	Posted	Deadline	Award
 Detecting the Movement of Soils (Internal Erosion) Within Earthen Dams, Canals, Levees, and their Foundations TAGS: Engineering/Design Physical Sciences Public Good Royal Society of Chemistry Water IdeaLab View More	3/31/16	Under Eval	\$20,000 USD
PREMIUM CHALLENGE			
 Downstream Fish Passage at Tail Dams TAGS: Engineering/Design Life Sciences Physical Sciences Public Good Royal Society of Chemistry Water IdeaLab View More	3/31/16	Under Eval	\$20,000 USD
PREMIUM CHALLENGE			

Challenge.gov

 **Challenge.gov**
Government Challenges, Your Solutions

LOG IN

699 Competitions Found

Geospatial Intelligence Agency Challenge



\$10,000 in prizes

Dynamic and easy-to-read version control for everyone

Open Until: Jul 15, 2016

Posted by: [National Geospatial Intelligence Agency](#)

Great Lakes Observing System Data Challenge



\$9,500 in prizes

Use technology, open data and innovation to solve Great Lakes problems.

Open Until: Aug 15, 2016

Posted by: [National Oceanic and Atmospheric Administration](#)

Innovations in Food and Agricultural Science and Technology (I-FAST)



View Prize List On This Challenge

I-FAST will provide entrepreneurship I-Corps training to USDA NIFA grantees

Open Until: Jul 22, 2016

Posted by: [National Institute of Food and Agriculture](#)

- Fish tracking
- Internal erosion
- Fish passage

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S2S Prize Competition

- Scope: Drought and flood
- Design Team: Reclamation and NOAA
- Schedule: Fall 2016 launch
- Competition Type
 - Ideation/theoretical
 - Real time forecast competition
- Considerations
 - Skill / Judging
 - Forecast period
 - Payout performance and baseline
 - Sub-region vs. full domain

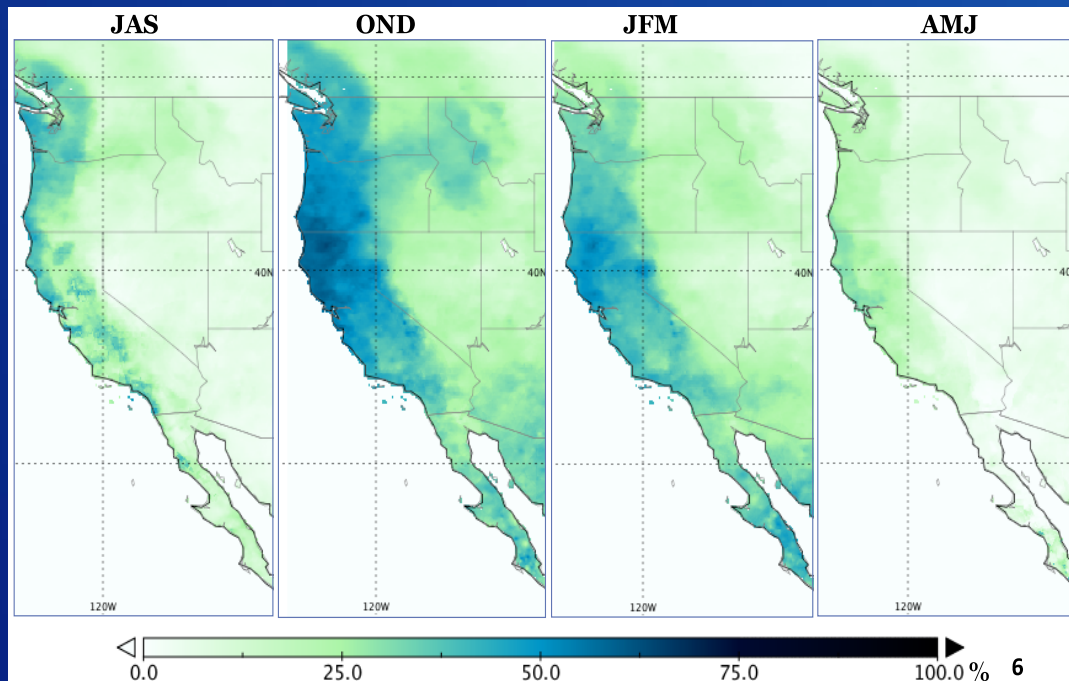
Research Project Benefits

- Forecasting models and data are complex
- Access specialized institutions
- Engage topic experts
- Leverage years of experience and resources
- Participation in research process

West Coast AR Forecasting

- Scripps, CW3E, Reclamation

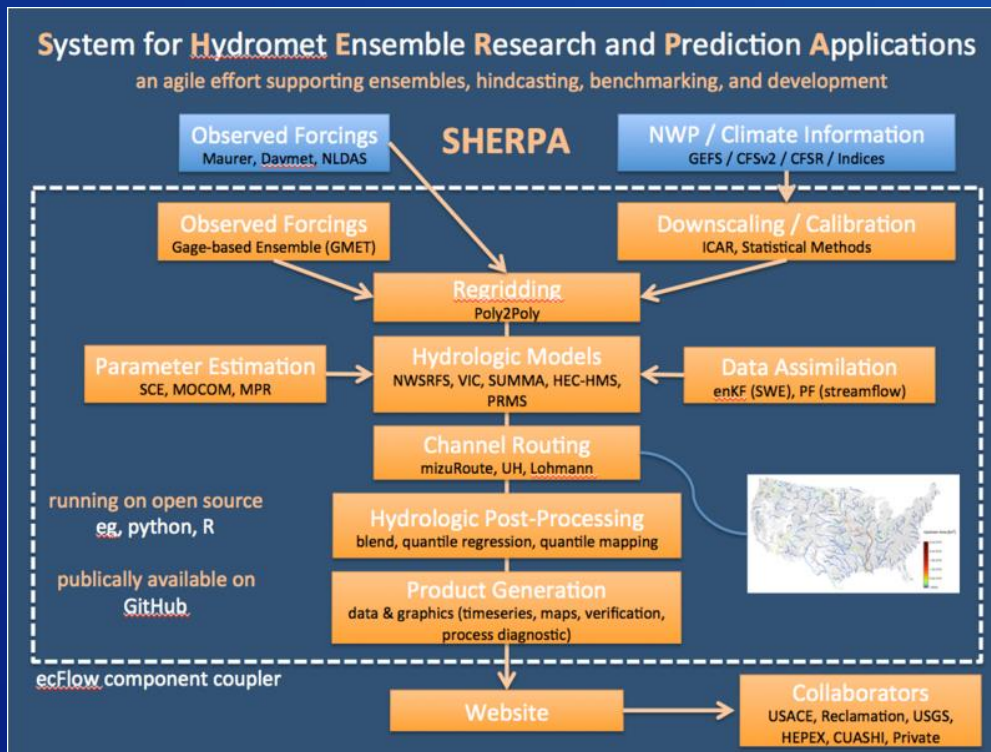
- Create a catalog of past ARs spanning ~ seven decades
- Study catalog to understand AR processes
- Develop methods to aid AR forecasting at the S2S timescale



Average percent of total seasonal precipitation contributed by Atmospheric Rivers. Seasons are abbreviated as follows. JAS: July – September; OND: October – December; JFM: January – March; AMJ: April – June. Figure Credit: Tamara Shulgina, CW3E/SIO.

SHERPA (System for Hydromet Ensemble Research and Prediction Applications)

- NCAR, USACE, Reclamation, and others
- Experimental streamflow forecast testbed
 - Hind-cast
 - Real-time
- Leverages advances in data sets and models
 - Inputs
 - Hydrologic modeling
- “Over-the-Loop”



Summary

- **Seasonal to Subseasonal forecasting is of interest and value for Reclamation**
- **Prize competitions may offer a complimentary avenue for progress to funded research projects**
- **More information on research projects and prize competitions is available at:**

www.usbr.gov/research