



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

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# CESD-ESS Cyberinfrastructure(CI) Working Groups

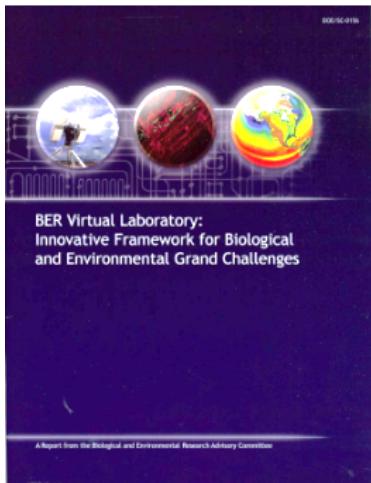
Annual Meeting  
April 30, 2018.

**DOE Program Managers:**  
David Lesmes, Jay Hnilo

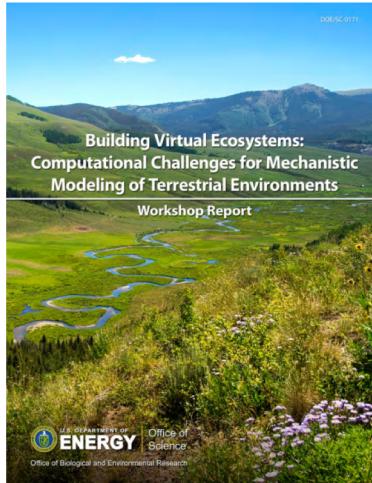
**Executive Committee Members:**

# Building Community Cyberinfrastructure ...

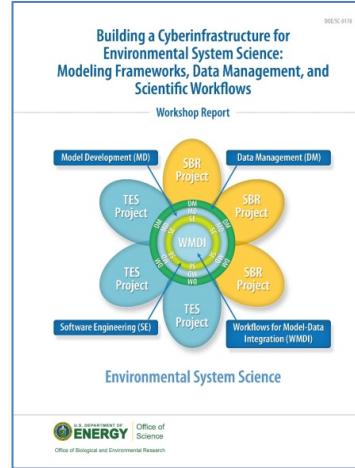
2013



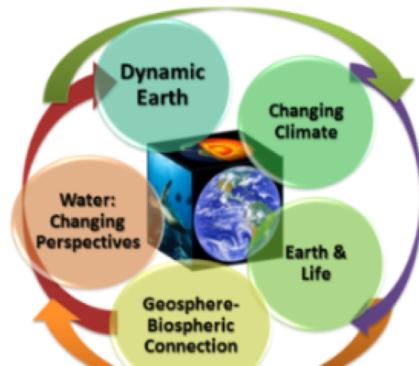
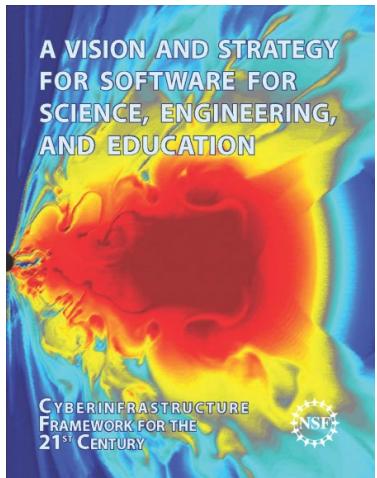
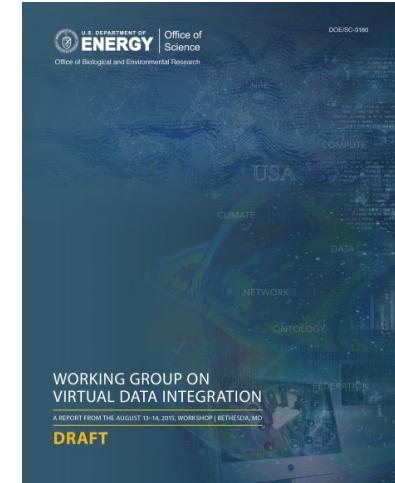
2014



2015



2016



# ESS Cyberinfrastructure Working Groups Kickoff

Monday April 25, 2016; Potomac, MD

*Followed recommendations of the workshop report and feedback from 2015 AGU Town Hall*

## **Established an Executive Committee**

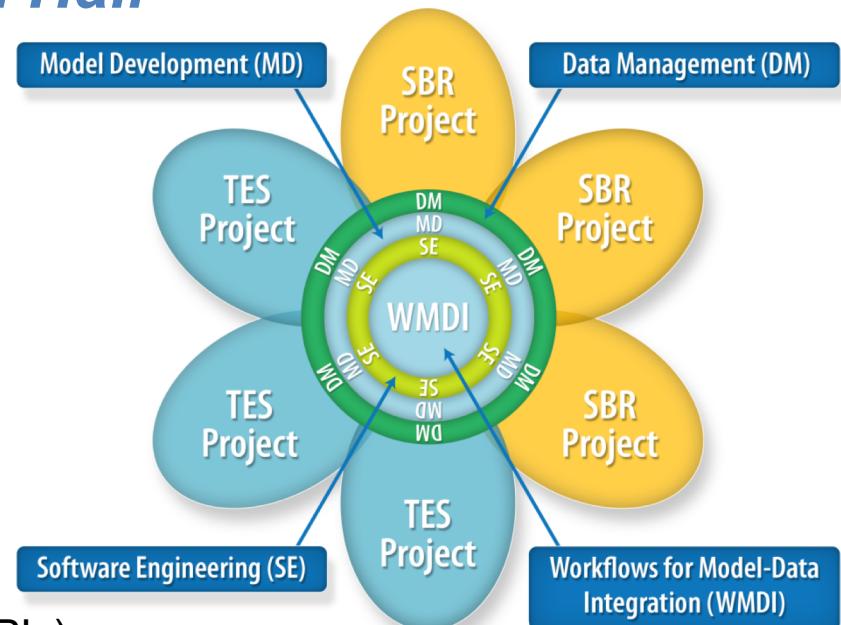
Deb Agarwal, Xingyuan Chen, Paul Hanson,  
Forrest Hoffman, Margaret Torn,  
David Moulton (Chair), Eric Pierce,  
Dean Williams, Roelof Versteeg,  
Stan Wullschleger

## **Established Three Working Groups**

- Data Management
- Model-Data Integration
- Software Engineering and Interoperability

## **Reporting on Working Group Task Status**

- Informal reporting to S.C. (PMs) and E.C. (PIs)
- Annual reporting at ESS PI Meeting
- WGs dissolved when task complete!



**Environmental System Science**

*The proposed Working Group on Community Governance will have initial work pursued by the Executive Committee*

# Executive Committee Workshop on Data Infrastructure

**Workshop:** August 29-30, 2016; Germantown, MD  
**Organizers:** Jay Hnilo (CESD) and David Moulton (LANL, EC – Chair)  
**Participants:** 10 participants representing Executive Committee, 7 DOE PMs

## Motivation:

- "*the innovation most needed is a framework that allows seamless integration of multiscale observations, experiments, theory, and process understanding into predictive models for knowledge discovery*" (BERAC 2013)
- Exponential growth in the amount, variety and complexity of scientific data
- Significant fragmentation across projects and disciplines still remains
- A need for a data center that would be a foundational part of a community cyberinfrastructure

Towards a Shared ESS Cyberinfrastructure:  
Vision and First Steps

*Report from the ESS Executive Committee Workshop on Data Infrastructure*  
August 29-30, 2016.  
DOE Headquarters, Germantown, MD

[http://science.energy.gov/~/media/ber/pdf/workshop%20reports/Towards\\_a\\_Shared\\_ESS\\_Cyberinfrastructure.pdf](http://science.energy.gov/~/media/ber/pdf/workshop%20reports/Towards_a_Shared_ESS_Cyberinfrastructure.pdf)

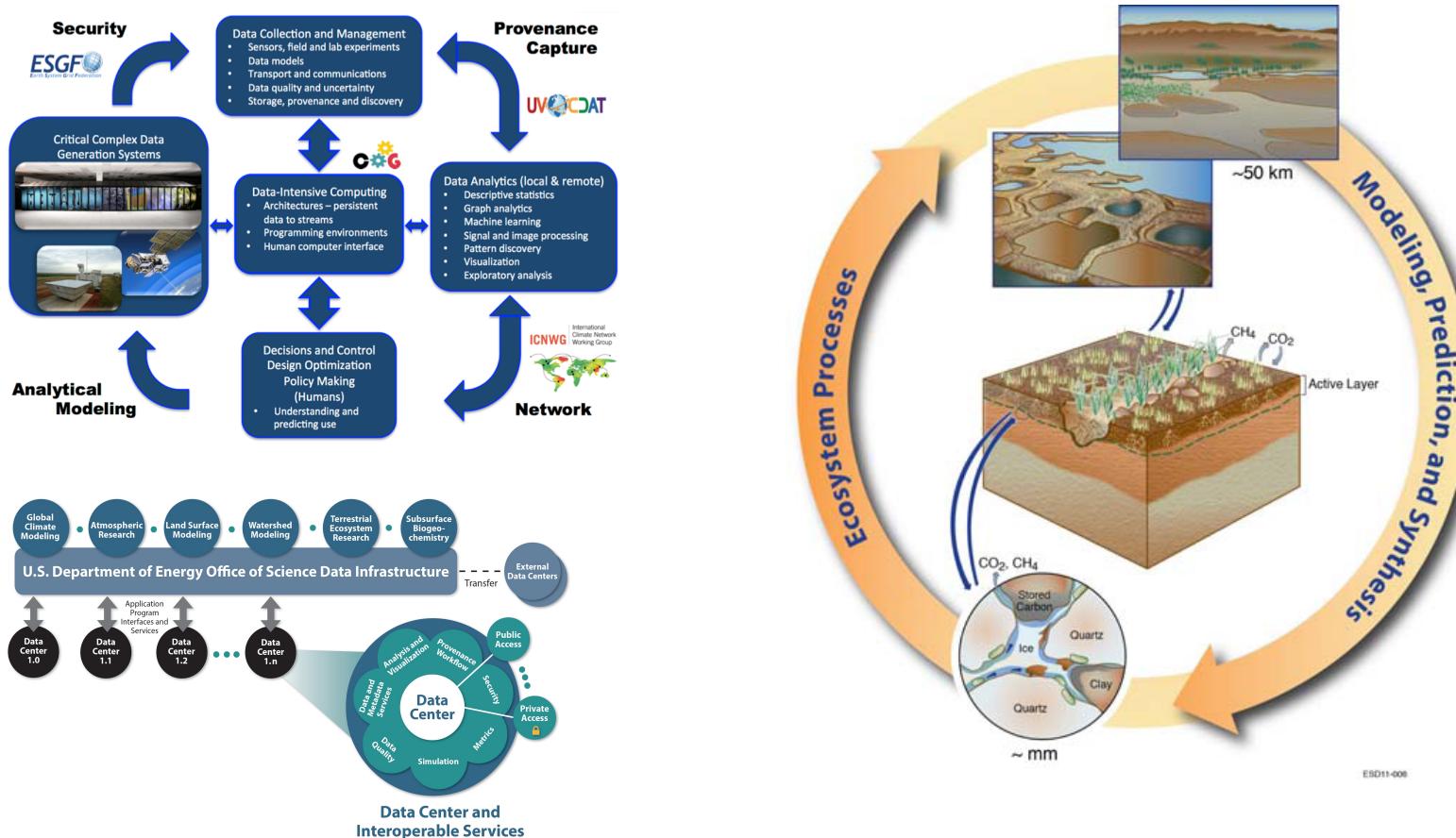


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AGU Fall Meeting, Community-Based Cyberinfrastructure Town Hall  
December 12, 2016.

# ESS Community Cyberinfrastructure and the Virtual Laboratory



**Reconciling different view points and emphasis into requirements for a new data center and a phased approach to community-based cyberinfrastructure development.**

# Successes and Challenges

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- **Success: Community Engagement Outreach**

- AGU Town Halls (2015, 2016)
- Served as reviewers at joint BER/BES/ASCR SBIR call Bigdata Technologies for Science, Engineering and Manufacturing
- Proposed a session for AGU Fall Meeting 2018, “Computational Methods and Tools for Model-Data Integration.”
- Breakout Tuesday night “Building Community Testbeds for Modeling Watershed Systems” (Laura, Xingyuan)

- **Challenge: Finding Time to Meet and Collaborate**

- Too many projects, time is fragmented/overcommitted
- Doodle polls are no longer effective
- Creating a “Fire Drill” may still be out ranked by other “Fire Drills”

***Initiated brainstorming on how to tap into the passion and potential of the community – led to today's workshop***