



U.S. DEPARTMENT OF
ENERGY

Office of
Science

CESD-ESS Cyberinfrastructure(CI) Working Groups

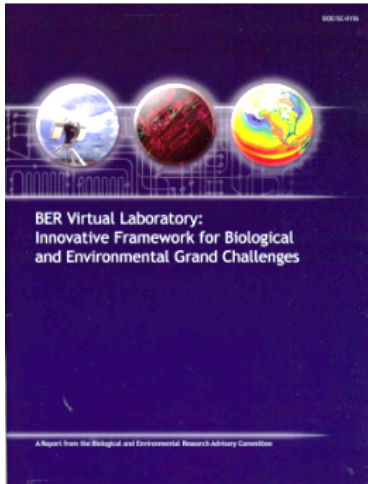
Annual Meeting
April 30, 2018.

DOE Program Managers:
David Lesmes, Jay Hnilo

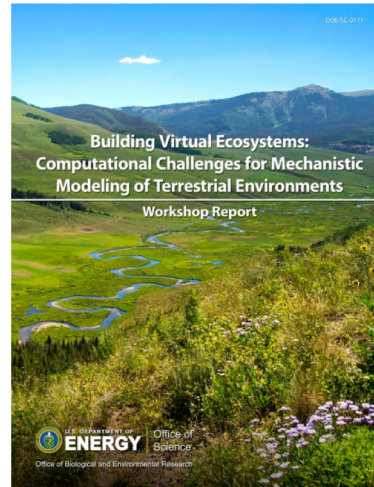
Executive Committee Members:

Building Community Cyberinfrastructure ...

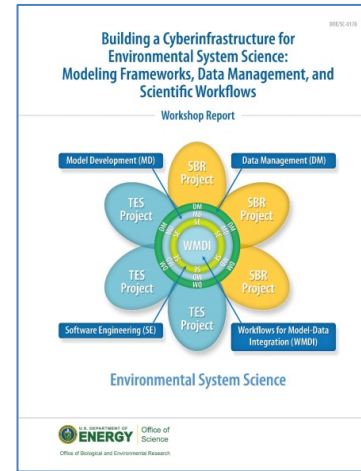
2013



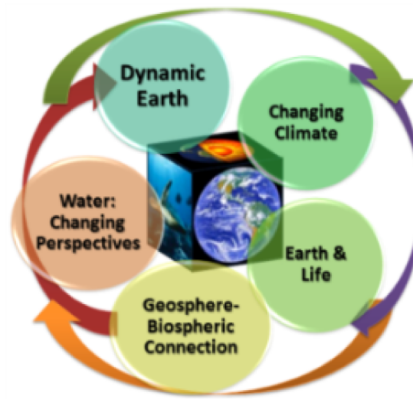
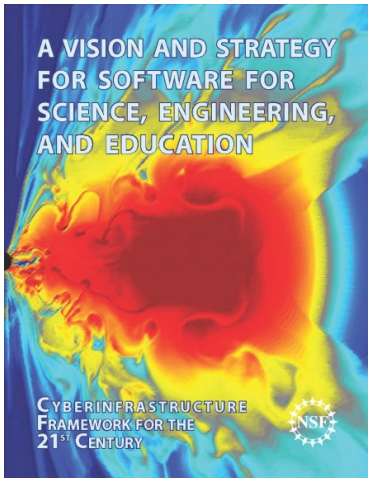
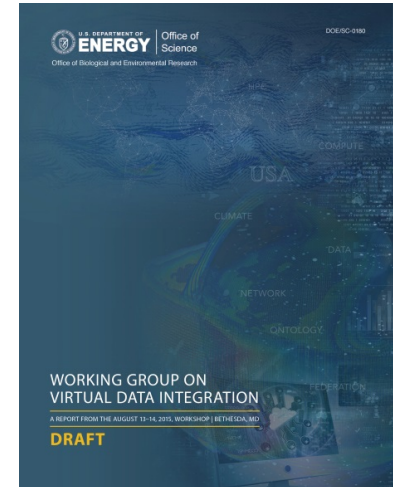
2014



2015



2016



CRITICAL ZONE OBSERVATORIES

studying the zone where rock meets life

funded by NSF



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

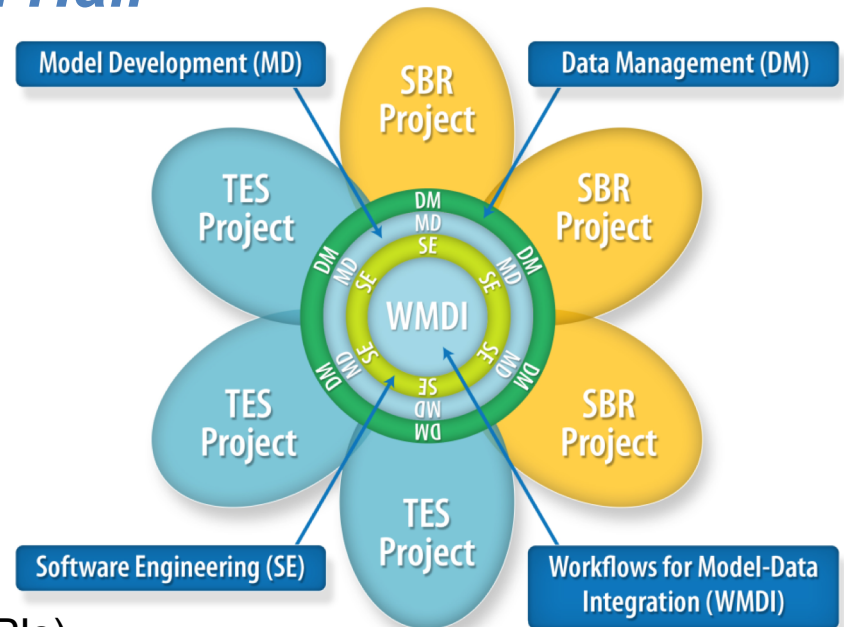
Established Three Working Groups

- 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!*

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



Environmental System Science

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

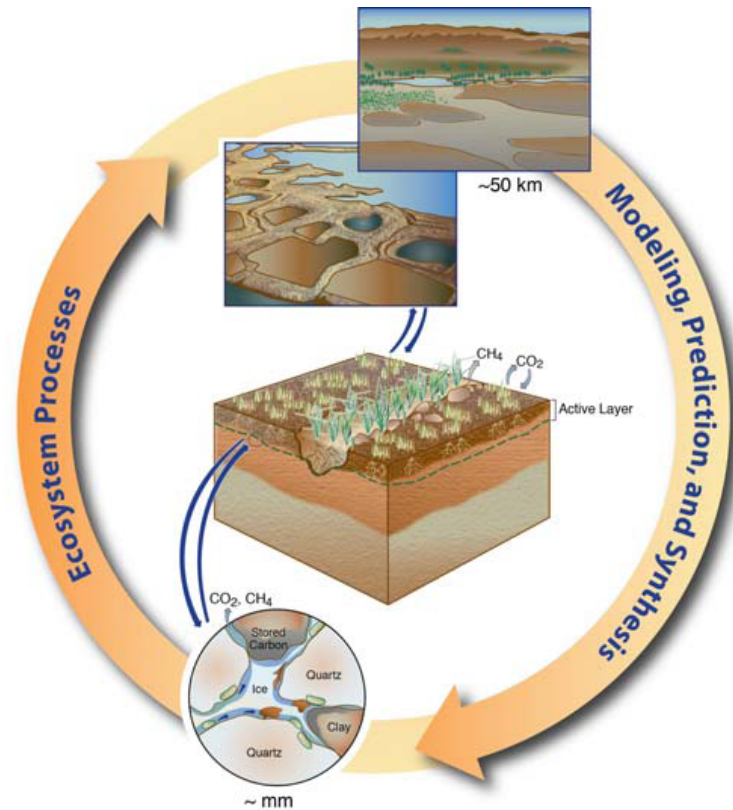
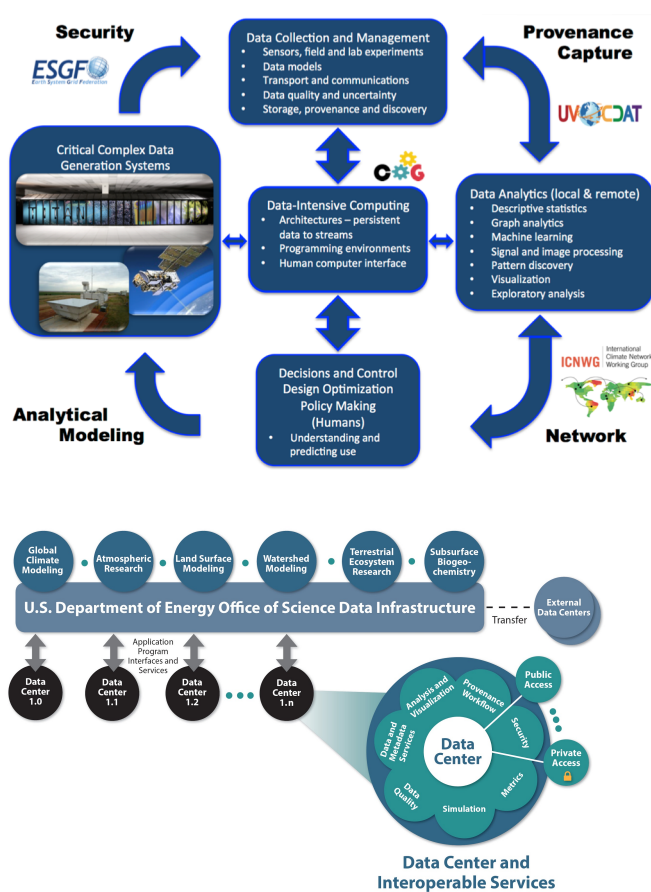


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AGU Fall Meeting, Community-Based Cyberinfrastructure Town Hall
December 12, 2016.

ESS Community Cyberinfrastructure and the Virtual Laboratory



ESD11-006

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



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Successes and Challenges

- **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