

**CESD Response to the
COV findings and recommendations
(2013-2015)**

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The COV Charge

1. Efficacy and quality of funding processes

- a) Solicit, review, recommend, and document application and proposal actions**
- b) Processes to monitor active awards, projects and programs**

2. Effect of the award process on portfolios

- a) Breadth and depth of portfolio elements**
- b) National and international standing of portfolios elements**

3. Other review criteria

The Programs and Facilities Reviewed

- 1. Atmospheric System Research (ASR)**
- 2. Earth System Modeling (ESM)**
- 3. Regional and Global Climate Modeling (RGCM)**
- 4. Integrated Assessment Research (IAR)**
- 5. Terrestrial Ecosystem Science**
- 6. Subsurface Biogeochemical Research (SBR)**
- 7. ARM Climate Research Facility (ACRF)**
- 8. Environmental Molecular Sciences Laboratory (EMSL)**
- 9. Data Science and Management**

Cross Cutting Themes

- 1. Facilities**
- 2. Interagency coordination**
- 3. Workshops and initiatives**
- 4. SFA management and CESD strategic plan**

The Committee of Visitors (COV)

Jeff Arnold	Army Corps Engineers
Joe Berry	Carnegie Inst.
Jae Edmonds	PNNL
Rong Fu	Texas A&M
Stuart Grandy	New Hampshire
Roy Haggerty	Oregon State
Helen Hsu-Kim	Duke
Tsengdar Lee	NASA HQ
Norman Loeb	NASA Langley

Sandy Lucas	NOAA/CPO
Jerry Meehl	NCAR
Kerstin Kleese van Dam	BNL
Rob Pincus	Colorado
Dave Randall	CSU
Bert Semtner	NPS
Neil Sturchio	Delaware
Mike Wehner	LBNL
Minghua Zhang	SUNY/SB

COV Operation: Materials Examined

- **Funding Opportunity Announcements (FOAs)**
- **SC Merit Review Guidance**
- **Preproposals, preproposal decisions**
- **Reviewer and panel compositions**
- **Proposals**
- **Reviews**
- **Summary by PMs**
- **Justifications of award or declinations**
- **Communications with PIs**
- **Progress reports and their usage**
- **Monitoring methods**
- **Workshops and meetings**
- **Evidences of portfolio quality**
- **Response to previous reviews**

General Recommendations

General Recommendation #1

CESD should continue and enhance coordination with other US and international agencies to, e.g., seek opportunities for joint solicitations.

Response and Actions

- **CESD acknowledges importance of interagency coordination, and recognizes that solicitations are one mechanism that adds value.**
- **CESD will continue to:**
 - **Coordinate investments via NSTC committees and subcommittees**
 - **Collaborate with other agencies where appropriate**

General Recommendation #2

Program Managers should provide more detailed feedback to P.I.'s, particularly for proposals that are not supported.

Response and Actions

- **CESD is committed to providing feedback to all applicants.**
- **CESD will provide more detail in panel review summaries, e.g., with more explicit explanations why proposals that were submitted were declined.**

General Recommendation #3

Program Managers should carefully track diversity metrics for both review panels and the participants of strategic planning workshops.

Response and Actions

- **CESD is committed to promoting diversity, e.g., within panel reviews and participation in workshops.**
- **In consultation with SC, BER will determine if diversity metrics can be collected and reported; and then, if appropriate, will explore which demographics and diversity statistics apply.**

General Recommendation #4

CESD should ask the NAS to create a study group to strengthen strategic planning.

Response and Actions

- **CESD recognizes the value added of NAS advice and recommendations. During past years, NAS advice to USGCRP has been incorporated into CESD planning processes.**
- **Upon completion of the updated CESD strategic plan, CESD will consider options for using USGCRP and NAS study groups to assist with future strategies and priorities.**

General Recommendation #5

CESD should formulate a more formal and transparent process of initiating and terminating SFAs and other large projects; and consistency is needed for review frequency and process.

Response and Actions

- All BER-supported SFA, CA, and other large research projects undergo regular peer review based on standard SC Merit System Review and other procedures.**
- Review frequency is determined based on a variety of factors including, e.g., annual progress; science integration; and maintaining highest caliber.**
- CESD will continue to evaluate its process for review, initiation and termination of large projects for consistency and transparency.**

General Recommendation #6

CESD should increase funding to Universities relative to Laboratory funding.

Response and Actions

- **CESD recognizes the value of University funded research as part of its investment strategy.**
- **Besides direct support via FOAs, CESD also provides indirect support to University partners of Lab projects and via BER scientific user facilities.**
- **CESD will strive to achieve and maintain an appropriate balance of University and Lab research, in support of the Division's strategy.**

General Recommendation #7

CESD should expand its number of performance metrics beyond number of publications, to include e.g. conference presentations and citations.

Response and Actions

- **CESD recognizes that scientific productivity is not just numbers of publications.**
- **CESD currently considers a wide set of scientific productivity outcomes and research accomplishments as criteria that can be applied to all reviews.**
- **BER will assure consistency of metrics is applied across BER.**

General Recommendation #8

Individual Program Managers should have travel budgets and management support to attend key meetings and visit Labs.

Response and Actions

- **CESD agrees with the importance of engaging the national and international scientific communities to maintain scientific leadership of BER Program activities.**
- **CESD will continue to work with DOE management to maximize and optimize Program Manager participation in national and international scientific meetings as well as Lab visits.**

Program Recommendations

Recommendation to Programs

Climate and Earth System Modeling

The 100 km atmosphere of ACME should be for efficient testing in support of developing the very high resolution version of ACME, and its applications should be aimed at those related efforts within DOE that demand high resolution projections.

Response and Actions

- **CESD is committed to the development of an ESM platform, able to serve the scientific vision and mission of DOE. While some of the mission needs, e.g., projections of extremes, demand high resolution, other mission needs (e.g., drought) demand low resolution.**
- **CESD has decided that ACME must retain low and high resolution versions of its atmospheric model.**

Recommendation to Programs

Environmental System Science

1. Research in subsurface radionuclide transport should not be abandoned.

Response and Actions

- **CESD recognizes the importance of this scientific topic, including providing capabilities at its scientific user facilities.**
- **CESD will continue to maintain an appropriate investment, that includes a balance of University and Lab funded research and capabilities through EMSL.**

2. Further integration of elements of SBR and TES is encouraged, where feasible

Response and Actions

- **SBR and TES share important scientific challenges, e.g., biogeochemistry, hydrology, and root dynamics.**
- **CESD will continue to develop the ESS strategy with elements of SBR and TES.**

Recommendation to Programs

Atmospheric System Research

1. The ASR program should strive to maintain a balance between the scientific use of ARM data and innovative remote sensing approaches for new data product development.

Response and Actions

- The ASR program is committed to advance atmospheric process science by utilizing best available observing capabilities.**
- CESD will continue to expand opportunities for its ASR scientists to exploit remote sensing approaches that complement capabilities available in the ARM facility.**

Recommendation to Programs

Atmospheric System Research

2. ASR should expand its scope to include research that does not make use of ARM data.

Response and Actions

- **ASR supports research that includes complementary non-ARM data.**
- **CESD will continue to require that its investments support DOE-supported data, including ARM data.**

3. ASR should consider joint solicitations with other agencies to exploit other data sets for process research

Response and Actions

- **CESD is committed to advancing efficient mechanisms to support DOE mission.**
- **CESD will continue to explore new options for interagency coordination, including coordinated solicitations where appropriate.**

Recommendation to Programs

Data Management (DM)

1. The DM program should develop a list of high priority capabilities it needs to provide to the CESD community, that exploit opportunities across SC and other agencies.

Response and Actions

- CESD is committed to the development and maintenance of archives, informatics tools, and practices, in service to the CESD scientific community.**
- CESD organized a series of workshops (FY15-FY16) to outline requirements for next generation data archiving and analysis capabilities.**
- CESD will work with ASCR and the scientific community with a goal to build the best possible capabilities in service to CESD science.**

Recommendation to Programs

Data Management (DM)

2. CESD should determine if the data management infrastructure would function better as a User Facility.

Response and Actions

- **CESD is committed to engaging the research community and determining through reviews and workshops how to best serve their data management needs.**
- **CESD will continue to review research-related infrastructure, user facility needs, and other requirements to accomplish BER programmatic priorities.**

Recommendation to Programs Facilities

The ARM facility should be reviewed externally within the next few years to supplement the 2014 internal review.

Response and Actions

- **CESD is committed to engaging the research community and determining through reviews and workshops how to best serve their data management needs.**
- **CESD will continue to review research-related infrastructure, user facility needs, and other requirements to accomplish BER programmatic priorities.**

Summary

- 1. The funding processes across all CESD programs are rigorous, appropriate, and well documented. The awards and projects are monitored effectively.**
- 2. The CESD programs are of high quality. They are nationally and internationally respected.**
- 3. The Program Managers are dedicated and effective.**
- 4. The COV provided constructive recommendations in the report on portfolio balance, travel, efficiency, metrics, CESM, program breadth, usage and budget vigilance on facilities.**