



**CESD Response to the  
COV findings and recommendations  
(2010-2012)**

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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/Carbon Dioxide Information Analysis Center (TES/CDIAC)**
- 6. Subsurface Biogeochemical Research (SBR)**
- 7. ARM Climate Research Facility (ACRF)**
- 8. Environmental Molecular Sciences Laboratory (EMSL)**

# Cross Cutting Themes

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

# The Committee of Visitors (COV)

<b>Enriqueta Barrera</b>	<b>NSF</b>	<b>Peter Jaffe</b>	<b>Princeton U.</b>
<b>Ana Barros</b>	<b>Duke</b>	<b>Lisanne Lucas</b>	<b>NOAA</b>
<b>Joe Berry</b>	<b>Carnegie Inst.</b>	<b>Chin-Hoh Moeng</b>	<b>NCAR</b>
<b>Ken Bowman</b>	<b>Texas A&amp;M</b>	<b>Kathryn Nagy</b>	<b>UI Chicago</b>
<b>William Collins</b>	<b>LBNL</b>	<b>Michael Prather</b>	<b>UC Irvine</b>
<b>Robert Dickinson</b>	<b>UT Austin</b>	<b>Gemma Reguera</b>	<b>Michigan State</b>
<b>Leo Donner</b>	<b>GFDL</b>	<b>Gary Saylor</b>	<b>U. Tennessee</b>
<b>Jae Edmonds</b>	<b>PNNL</b>	<b>Anne-Marie Schmoltner</b>	<b>NSF</b>
<b>Robert Ellingson</b>	<b>FSU</b>	<b>Peter van Oevelen</b>	<b>GEWEX</b>
<b>Jeffrey Gralnick</b>	<b>U. Minnesota</b>	<b>Diane E. Wickland</b>	<b>NASA</b>
<b>Christopher Hill</b>	<b>MIT</b>	<b>Minghua Zhang (chair)</b>	<b>Stony Brook</b>
<b>Ross Hinkle</b>	<b>U. of Central FL</b>		

# 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

**Maintain flexibility and balance in funding to allow both Science Focus Areas (SFAs) and exploratory or cutting edge research by individual PI's at the Labs. Reduce administrative burden placed on SFA teams by reviews, especially for projects where the most recent reviews are excellent.**

## **Response and Actions**

- SFAs are dynamic funding mechanisms, able to include exploratory research**
- BER will continue to encourage labs to take full advantage of SFA goals**
- BER will work to minimize burdens while maintaining integrity of review process.**



## General Recommendation #2

The COV considers the current overall balance of laboratory and university research to be appropriate and we recommend that such balance be approximately maintained in the future.

### Response and Actions

- **BER appreciates feedback.**
- **BER will continue efforts to maintain an appropriate balance between National Laboratory and University funding.**

## General Recommendation #3

The COV strongly recommends that DOE increase travel fund allocations to allow PMs to attend scientific meetings both domestically and internationally. It is imperative that CESD PMs attend some of these meetings in order to enhance the impact of DOE sciences, to exert leadership in setting research directions in the international community, and to leverage DOE resources.

### Response and Actions

- **BER agrees with the importance of engaging the national and international communities to maintain scientific leadership.**
- **DOE will continue to work with DOE management to optimize PM participation in major meetings.**

# General Recommendation #4

The COV recognizes the tremendous workload and responsibilities of the PMs who made the CESD programs successful. We recommend that DOE improve its electronic grant information system to better assist the PMs and support staff for project management.

## Response and Actions

- **BER is enthusiastic about improvements in SC electronic grants management, and more improvements in the near future.**
- **The first phase of the SC Portfolio Analysis Management System (PAMS) is on-line (Nov 2013), and subsequent improvements will be incorporated in the next year.**

## General Recommendation #5

The COV encourages PMs to develop program-wide metrics of performance and progress synthesis in addition to the quantitative measure of publications to measure programs and to enhance their impact.

### Response and Actions

- **BER acknowledges the value of program-wide metrics of performance and progress as effective tools for Program Management.**
- **BER will establish a working group of PMs across BER to identify metrics that are effectively used by other DOE programs and agencies for possible development of metrics of BER-wide metrics of performance and progress beyond scientific publications.**



# Program Recommendations

# Recommendation to Programs

## ASR & ESM & RGCM

CESM and its component models are DOE's highly leveraged assets. The COV considers CESM as the single most important element contributing to DOE's position of international leadership in climate modeling. The COV strongly recommends that DOE maintain its proactive collaborations with the community and its investments in CESM activities.

### Response and Actions

- **BER acknowledges the diversity of expertise in national labs and universities that is required to advance the Community models.**
- **BER will continue to develop strategies to best use the vast resources of the Labs and within the Universities to rapidly advance development of climate modeling in support of DOE and national needs.**

# Recommendation to Programs: IAR

Given the history and scope of research activities in the Integrated Assessment Research (IAR) Program, the COV recommends consideration of the establishment of formal cooperative agreement in meeting its objectives.

## Response and Actions

- **BER acknowledges the maturity of the IAR project at MIT, and recognizes the value of converting this project to a Cooperative Agreement**
- **BER initiated steps to convert the MIT project from a grant to a Cooperative Agreement.**

# Recommendation to Programs: TES

The COV recommends that CESD engage other federal agencies to address how voids in ecosystem and carbon cycle research at DOE, including both managed ecosystems and the oceans, can be filled and information about these elements of the Earth system be included in DOE modeling efforts.

## Response and Actions

- **BER acknowledges the value of working across government to coordinate research programs.**
- **BER will continue to coordinate its research activities and leverage opportunities with other agencies, through formal mechanisms such as legislated committees, the Office of Science and Technology Policy, and informally with interagency working groups.**



# Recommendation to Programs: SBR

The COV recognizes the need of the NGEA Arctic project within the CESD Environmental System Science (ESS) programs. NGEA has necessitated the adjustment of some SBR SFAs from geochemical processes to carbon cycle research. The COV recommends that SBR maintain appropriate funding to retain key expertise and activities in radionuclide research.

## Response and Actions

- **BER recognizes the key role that SBR has played in the science of subsurface radionuclide fate and transport. BER also recognizes that many of the traditional SBR research can also benefit research on subsurface nutrients and carbon.**
- **BER will maintain expertise and research on subsurface fate and transport of radionuclides, as it works in parallel to explore synergies with challenges facing the subsurface science of climate change.**

# Recommendation to Programs: ARM(1)

The Atmospheric Radiation Measurement (ARM) Climate Research Facility management was proactive in the development of the “best estimate” data sets. The COV recommends that the PMs continue these efforts.

## Response and Actions

- **BER acknowledges the value of these ARM data sets.**
- **BER will continue to develop these data sets as part of the ARM Climate Research Facility.**

# Recommendations to programs: ARM(2)

Scientific input from the Science and Infrastructure Steering Committee (SISC) and the Infrastructure Management Board (IMB) should be better documented and included in proposal files so that the history and reasons for specific actions can be more easily tracked.

## Response and Actions

- **BER welcomes suggestions to improve the management processes applicable to the ARM facility.**
- **BER will improve its documentation of scientific input as part of the operation and management of the ARM Climate Research Facility.**

# Recommendations to Programs: ARM(3)

Proposals should have a succinct summary of previous activities with a focus on critical events and achievements to improve and build institutional memory.

## **Response and Actions**

- **BER welcomes suggestions to improve the management processes applicable to the ARM facility.**
- **BER will request that future ARM proposals include a succinct summary of previous activities with a focus on critical events and achievements.**

# Recommendation to Programs: EMSL

The COV recommends that the Environmental Molecular Sciences Laboratory (EMSL) continue to increase the user pool, especially to attract new investigators.

## Response and Actions

- **BER acknowledges the value of continuing to expand the pool of users at its scientific user facilities.**
- **BER will continue to work with EMSL to encourage the expansion of its pool of users, especially new users. This is a metric of EMSL performance.**

# Recommendation to Programs: Facilities

Recognizing the growing costs of instruments and maintenance for the CESD facilities, the COV recommends that ARM and EMSL PMs continue to engage the science community to set priorities and to maintain the proper balance of protecting legacy datasets and acquiring new instruments.

## **BER response and actions**

- **BER acknowledges the value of engaging the scientific community to help set priorities for user facilities.**
- **BER will encourage the ARM and EMSL facilities to continue to engage the scientific community in recommending priorities and approaches for legacy data sets and instrument acquisitions to advance the science.**

# 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 made recommendations in the report on portfolio balances, travel, efficiency, metrics, CESM, program breadth, usage and budget vigilance on facilities.**