



U.S. DEPARTMENT OF
ENERGY

Office of
Science

2016 HEP COV

Next Steps and Questions from HEP

*HEPAP Meeting
December 1, 2016*

Glen Crawford
Director, Research and Technology R&D
Office of High Energy Physics
Office of Science, U.S. Department of Energy

Outline

- **Formalities/Next Steps**
- **Recap responses to 2013 COV**
- **Questions regarding 2016 COV recommendations**



Formalities

- **HEP COV is a subpanel of HEPAP**
 - Subpanels report their recommendations and advice to the full panel for deliberations and discussion
 - HEPAP can accept, reject, or recommend changes to any part of the report
- **When the final COV report is accepted it becomes formal HEPAP advice to the Director of the DOE Office of Science**
 - DOE will provide a written response to the report within 30 days of approval
 - Until then, we do not have any official response to the recommendations or other content of the COV report
 - However, we are very interested in the HEPAP discussion, and in particular understanding the sense of the committee on the intent of the Recommendations. This will help us formulate an accurate and effective response.
 - We will do our best to answer questions regarding current DOE processes and practices
 - We will not offer opinions on the content of the report
- **Findings and recommendations that require SC-wide response will be referred by HEP management to SC-2 for response.**
- **Follow-up as needed with report(s) to HEPAP at future meetings**



COV Context

- DOE/SC Programs that recommend or award funds are generally externally reviewed by a COV (or similar mechanism) every three years
 - Period covered by this COV review is FY2013-2015
- HEPAP was charged in July 2016 with conducting an external review to assess the operations, process and procedures of the Office of High Energy Physics (HEP) in the DOE Office of Science, and evaluate the resulting research portfolio.
 - This is the fifth in a series of recurring triennial reviews (2004, 2007, 2010, 2013)
- The Committee of Visitors (COV) met in Germantown, Maryland Sept 27-29, 2016.
 - The 2016 HEP COV consisted of 38 expert reviewers from across HEP disciplines
- The Deputy Director for Science Programs posts each COV report and program response on the SC website. Official copies of the reports and responses are maintained on the SC website:
 - <http://www.science.doe.gov/SC-2/committees-of-visitors/hep-cov/> or http://www.science.doe.gov/hep/panels/reports/hepap_reports.shtml



Summary of Responses to 2013 COV (updated)

- There were 30 Recommendations in the final 2013 COV report
- We agreed with most of the 2013 COV recommendations and have worked to implement them in a timely fashion
 - 24 have been fully implemented, 2 partially, 2 are ongoing. **Details in Backup slides.**
 - Recommendation on improved review feedback to PIs [#9] has been mostly implemented
 - Recommendation on theory postdoc program [#26] was not implemented due to budget constraints; however, new student training/workforce development programs exist in DOE/SC
 - Recommendation on detector R&D program [#14] has been deferred pending community input (CPAD report, issued Oct 2016) and hiring of full-time Fed program manager (achieved)
 - Recommendation on lab/university balance [#18] has been deferred pending HEPAP action. We note that current HEP effort on lab program optimization can be a useful precursor.
- We disagreed with two recommendations [#10, 19]
 - We did not consider these recommendations beneficial to the HEP review process for reasons discussed in the Backup and 2014 HEPAP presentation on this topic.
- There were 3 “suggestions” outside the purview of the 2013 COV, related to Stewardship
 - The 2016 HEP COV was the first external review of the Accelerator Stewardship program



Questions on 2016 COV Recommendations. I

- **Recommendation 2:**

Adopt, in consultation with HEPAP, an annual mechanism to determine the best plan of action to implement the P5 vision

- **Questions/Comments:**

- **What would HEPAP like to see?**

- Note there is a related Comment on this item in Energy Frontier appendix

- **Currently DOE/HEP briefs HEPAP on the current FY budget plan**

- First, when it is proposed to Congress in Pres Budget Request (typically Feb before actual FY)
- Again once Congress passes the actual FYxx budget (in recent years, several months into FY)
- Changes imposed by Congress (or changed situation in interim) may impact budget execution

- **The timing and restrictions of the DOE budget process make it difficult to consult on P5 implementation plan in advance of budget execution in any given Fiscal Year**

- E.g., Pres Budget Request cannot be changed once it is released
- Time to respond to Congressional action is often short



Questions on 2016 COV Recommendations. II

- **Recommendation 4:**

Augment discussion with HEPAP of budgets by annually presenting the disposition of reserves and explaining how the final HEP allocations to the research programs of the frontiers are consistent with P5 recommendations

- **Questions/Comments:**

- **What would HEPAP like to see?**

- **A more detailed discussion of budget execution processes is possible**

- **Is this also useful for Recommendation #2?**

- **A post-facto (after end of FY) discussion of budget puts/takes is also possible**

- **However there is often not a simple linear relationship between competing P5 recommendations, current program needs, urgency of action, program balance, etc.**

Questions on 2016 COV Recommendations. III

- **Recommendation 8:**

Charge HEPAP to convene the subpanel envisioned in the 2013 COV to evaluate roles and responsibilities in university and laboratory research, and the ways in which this research is evaluated

- **Questions/Comments:**

- Is there a crisp statement of the “problem(s)” to be addressed?
- What is the desired outcome of such a process?



Questions on 2016 COV Recommendations. IV

- **Recommendation 19:**

 - *Develop a plan for increasing diversity in the programs HEP supports.*

- **Questions/Comments:**

 - Obviously the problem is larger than HEP alone, so this is at some level an SC management issue
 - We note DOE labs have been requested to develop diversity plans and publish data per Secretarial initiative
 - Review and assessment of progress in this area will require more data, and help from outside experts



Questions on 2016 COV Recommendations. V

- **Recommendation 24:**

The budget for Theory should not be cut further, in order that the Tier 3 scientists remain funded and that the research of Tier 1 and 2 scientists not be further compromised by reduced funding.

- **Questions/Comments:**

- Implementation of this Recommendation will inevitably have impacts on other parts of the HEP Research portfolio
- In the absence of increasing core research budgets, **what would HEPAP like to see?**

2013 HEP COV Recommendations and Responses

BACKUP



HEP Response to the Report of the 2013 Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status/Comment
1) HEP should strive to keep the overall program management coherent, keeping in view the connections and balance among the frontiers, and minimizing the obstacles to well-motivated transfers of funds across frontier boundaries.	We agree with the principle enunciated here, and will work to develop mechanisms to maintain balance among programs and ease funding transfers across program boundaries as consistent with programmatic needs and priorities.	Done. 2016 COV can assess how well this has been achieved.
2) Continue the comparative reviews. These should be augmented with independent mail-in reviews.	Agreed.	Done
3) Ensure that comparative reviews evaluate a particular proposal in the context of the full program over the full three year cycle within each frontier.	It is difficult to require reviewers to evaluate the “full program” for large umbrella grants (though we currently invite them to do so). We will consider adding appropriate guidance to the FOA and the reviewer instructions to emphasize context of the full program when evaluating proposals.	Done. FOA language and reviewer guidance have been updated.



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status/Comment
4) Ensure that review committees are given appropriate charges, that there are sufficient reviewers of each proposal, and that program manager oversight of reviews is uniform.	Agreed.	Done
5) Modify the FOAs to request that proposals which address topics in several different review panel areas include a discussion of the synergy gained from this broader scope.	Done. Guidance to PIs on preparing a better common narrative in a proposal was included in the FY14 HEP Comparative Review FOA.	Done
6) Institute mechanisms to streamline the movement of PIs moving from one frontier to another. The past record of such PIs should be considered in the reviews.	We will consider appropriate measures to ease transitions of PIs across frontiers. We note it is incumbent upon the PI to provide context and relevant past record of achievement in the proposal	Done. See discussion of Transition proposals on COV website.
7) HEP should charge the comparative review panelists to collectively discuss the relative strengths and weaknesses of proposals so that the program managers can judge the relative rankings of proposals.	This is currently done in all comparative review panels.	Done



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
8) Ensure that program manager's comments in grant folders clearly document the reasons for the action taken.	Agreed.	Done
9) Work to further reduce the time between proposal and proponent notification and to provide appropriate redacted review comments that will enable PIs to refine future proposals. Provide information to proponents on their comparative review score and the distribution of scores over all proposals reviewed by a panel.	We will continue to work to reduce the time between proposal deadlines and final decisions and providing redacted reviews. We will consider providing comparative review scores or other indicative measures of a proposal's relative ranking within a given panel for future comparative reviews.	Done (partial). All PIs received redacted reviews and time from proposal submission to decision has been significantly improved. See data in Research COV presentation. We do not provide review scores to PIs.



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
10) Refrain from using university startup funds as a consideration in establishing grant funding levels.	We disagree. As stewards of taxpayer funds, it is the responsibility of OHEP staff to manage funding appropriated by Congress in a way that optimizes the scientific productivity of the US HEP program. Consideration of other sources of funding (such as university startup funds, or other pending federal or private support) are valid programmatic and budgetary factors in determining grant funding levels.	Not Done
11) Further increase in the budget fraction devoted to projects is desirable but should be subject to the recommendations of the 2014 P5 report and budget constraints.	Agreed.	Done
12) Allocate a few dedicated pages in proposals for senior research scientists to describe their activities and critical accomplishments.	We will take this under consideration.	Done



HEP Response to the Report of the 2013 Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
13) Once goals, milestones and costs have been established for small scale experiments, formal HEP project oversight should be kept to a minimum.	We agree with the principle. Formal project oversight should be the minimum necessary to successfully manage and execute the project. Customization of management tools is often needed and should be tailored to the particular requirements of the project.	Done. Oversight of small projects continues to be an issue.
14) HEP should develop a coherent and stable approach to funding detector R&D which embraces the broad range of proposals for new ideas and techniques appropriate to its mission.	Agreed.	Ongoing
15) An additional IPA serving the theory program should be found.	Done. New Theory IPA will join HEP in January.	Done
16) Seek to increase the HEP travel budget	HEP does not control this budget (SC does). Strong arguments will be needed to make the case that HEP has unique and compelling travel requirements.	Done



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
17) We urge HEP to redouble and improve its communications both with the HEP community and in the wider governmental circles	Agreed. We have a AAAS fellow (M. Cooke) on board helping with P5 and communications issues generally. We will look for other ways to improve HEP communications.	Done.
18) Undertake a separate review of the balance between the Laboratory and university research programs.	We expect this issue to be taken up by HEPAP.	Ongoing
19) Provide summary information on previous proposals, PIs, FTEs, experiments and funding allocations to reviewers.	We will consider providing appropriate summary information as needed and relevant, but we note that explaining the historical roles and responsibilities of a given HEP group is the job of the PI(s) . Current and pending sources of support must be provided in the application and this information also gives some context to reviewers. We reiterate that historical levels of support are not relevant to current proposals under review.	Not Done



HEP Response to the Report of the 2013 Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
20) If there are clear guidelines on COLA for overseas experiments, provide them to the reviewers.	Done. This was covered in the 2014 Energy Frontier panel instructions and we will continue this practice. We will also work with the experiments (e.g., LHC) to understand whether more uniform COLA rates can be developed between the different experiments.	Done
21) The management of the research, operations and upgrade components of the LHC experiments should be closely coordinated.	Agreed. DOE managers of the respective programs meet regularly. One will be assigned responsibility for ensuring coordination.	Done. Energy Frontier PM ensures coordination.



HEP Response to the Report of the 2013 Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
22) Improve the quality of administrative support.	Agreed. We are working on this.	Done. Admin support has been reconfigured.
23) Maintain U.S. science in the lead of the Cosmic Frontier.	Agreed. The integration of the Cosmic Frontier with the other “traditional” HEP experimental areas is one of the signature successes of the US HEP program.	Done.
24) Support computation, simulation, and phenomenology that are directly needed for planning, execution, and analysis of Cosmic Frontier Stage III and Stage IV experiments	Agreed. Cosmic Frontier, Theory and Computation PMs are aware of the issues and working to develop mechanisms to appropriately review and support these efforts.	Done.
25) HEP should explicitly recognize that a thriving theory program is essential for identifying new directions and opportunities for the field, in addition to supporting the current program.	Agreed.	Done.



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
<p>26) Create a new theory postdoc fellowship program. The detailed structure of the program should be determined by OHEP, but could be modeled via selection of recipients from a national competition, with three years of support to recipients working at a DOE supported university or lab group of their choice.</p>	<p>We note that education programs are generally not considered part of the DOE mission and therefore we can no longer support any “fellowship” or “scholarship” programs, or those which have a purely educational mission. However, we also note that advanced training and workforce development <i>are</i> considered part of the DOE mission and we are exploring ways of incorporating advanced training in HEP Theory as part of future DOE programs. [<i>See also discussion of SC charge to HEPAP on training and workforce development</i>]</p>	<p>Done (partial)</p>
<p>27) Evaluate the General Accelerator R&D (GARD) program to identify and prioritize components that are central to the evolving HEP mission, after delivery of the 2014 P5 report</p>	<p>Agreed.</p>	<p>Done</p>



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Suggestion

HEP Response

Status

28) Identify goals and areas of mutual and/or complementary accelerator R&D interest jointly with other parts of the Office of Science and other agencies and stakeholders, at the foundation of the Accelerator Stewardship program.

29) Establish procedures to jointly review proposals addressing Accelerator Stewardship goals, including those outside traditional boundaries, at the initiation of the program.

30) Review the progress of the Accelerator Stewardship program periodically (e.g. annually), reporting to HEP, including reviewers representing other parts of the Office of Science, and representing other governmental agency stakeholders. Consider including SciDAC accelerator activities in the periodic reviews.

We agree with the principles put forward here but note that Accelerator Stewardship is intended to be a coordinated SC-wide program managed by HEP, and is (as yet) a proposed new subprogram that has not received Congressional approval, and therefore beyond the scope of the COV charge. We welcome the COV subcommittee's strong interest in the nascent Accelerator R&D Stewardship program and will respond to these Suggestions in an appropriate venue at a later date.

2016 COV is doing initial assessment of Accelerator Stewardship program.



HEP Response to the Report of the 2013

Committee of Visitors Review of HEP

COV Recommendation	HEP Response	Status
31) Perform reviews that allow the establishment of well-defined goals, deliverables and multi-year budget plans for programs that have significant budgets and extend over multiple years.	Agreed. This has been done on an <i>ad hoc</i> basis in the past. We will develop a consistent methodology to review such efforts.	Done
32) Request that the LARP leadership address the recommendations from a compilation of the 2010-2012 LARP reviews.	Agreed.	Done
33) Monitor activities that are transitioning from R&D to full construction (e.g. LARP magnet program) so as to clearly define and track the transition steps	Agreed.	Done

