

# Recommendations from Previous Review

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# LAB MANAGEMENT PERFORMANCE

FNAL Directorate must be diligent to ensure that the US HEP community sees FNAL as the major resource for all US HEP.

Management needs to display more openness and finesse in visible decision processes. “Programmatic stewardship” without the perception of heavy-handed FNAL-dominance is needed.

Continued and substantial engagement in all three frontiers is appropriate and recommended

New director and new style of communication – nationally and internationally

Management is aware and working on it. Ongoing communication across the field—domestic, international, universities, and laboratories. Also instituting more open processes at the lab:

- Scientist retreats and prioritization groups
- Web site for input by staff

- This is ongoing

# STRATEGIC PLANNING

Develop a straw man timeline that shows the different stages of LBNE, Project X and the time when new smaller experiments could fit into the program. The straw man program should be flexible enough to respond to possible changes in the assumed HEP budget.

- LBNE is in the process of developing international partnerships to expand the scope of the first phase to include an underground far detector and a near detector, while maintaining the same DOE total project cost.
- Fully engaged in and responding to the community planning process that is underway. We will incorporate results of that process

# Budget/Workforce Planning

The lab would benefit from an in-depth cost review. The goal of the review will be a coherent picture of the tasks and resources going into the various elements of its long term planning document. Manpower management would be an important component of such a review. The lab's workforce planning process should encompass the entire workforce, not just the projects as shown during the review, and it should be extended out to 2020.

- Management team initiated the development of a single, integrated Laboratory Agenda
  - Captured the major initiatives, enabling capabilities, strategies and critical outcomes needed to deliver the laboratory's mission
  - Serve as the foundation for the Laboratory Annual Plan and Budget.
- A major review of the Lab Agenda initiated in September 2013 to validate, and modify emphasis and direction.
- Attention being paid to matrix management and over-commitment

# Accelerator Operations

The funding profile for the PIP should be reevaluated, particularly in FY13, and the impacts on the post shutdown experimental program should be determined.

- PIP funding re-evaluated following sequestration and budget reprogramming. Additional funding provided in late FY13.
- The actual PIP funding profile has not followed the plan formulated in FY11.
- Progress slower than the original plan,
- Sharing of beam between NOvA, MicroBooNE and the SY120 program is required.
- The metrics model presented in this review reflects the program planning priorities.

# Scientific Computing

FNAL should continue to vigorously seek needed additional resources from US Universities to mitigate limitations and problems in software packages and their support.

- Scientific Computing Division met with collaborators to learn how to enable new users to quickly become productive
- Situation is much improved and productive engagement with the collaborations is being maintained

# Scientific Computing

The scientific computing division should present their current status and plans for developing and supporting simulation tools at a focused review after Snowmass. If there is no plan, they should develop one because adequate simulation tools are critical to the lab's success in developing new intensity frontier initiatives. The plan should address the problem stated by several groups at this review – that simulations of several of the most important intensity frontier experiments at FNAL, including MicroBooNE and LBNE, are lagging other approaches to developing experimental designs and are, therefore, not actively contributing to the success of the program.

- Provided more active support of the simulation efforts of the Intensity Frontier Collaborations
- Starting process to support GENIE ( event generator)
- Added scientific support

# NOvA

FNAL must intervene as needed to prepare a realizable plan B if the problems with the APD/thermo-coolers compromise the NOvA's schedule and cost.

- Major technical progress since last review
- The particular problem highlighted did not materialize, but others did
- Substantial laboratory effort and management attention directed towards NOvA
- Expect successful completion in late June

# MicroBooNE

FNAL should take steps to ensure that MicroBooNE has all reasonable and necessary support to maximize its probability of early success.

- The lab has provided space at the D0 assembly building to house short term university guests here to construct the detector.
- Provided scientific, engineering, design/drafting, and technical assistance to keep the systems on schedule.
- Particle Physics Division has carefully budgeted for transition to operations

# Mu2e

FNAL should review why the team has not considered other reasonable experimental concepts that could produce results at interesting levels of sensitivity less than  $10^4$ , but at much earlier times. Such a review should consider if staging of this experiment is feasible, cost effective and more timely.

- Mu2E has re-considered staging scenarios:
  - Very difficult to accelerate the schedule, deliver interesting physics, and significantly reduce costs.
  - Ultimately increases cost and schedule to reach full physics potential
- Renewed attention to collaborate with other muon efforts

# Summary

- We have carefully considered and tried to respond constructively to all recommendations.
- Further details in later talks and in discussions during the next couple of days.