office of high energy physics

Department of Energy

Office of Science

DOE Office of High Energy Physics

Report to the Astronomy and Astrophysics Advisory Committee

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HEP Office Activities

FY 2008 Execution

- Major funding decisions were made in February Financial Plan
- Fermilab and SLAC Reviews – this summer
- Laboratory Group Reviews – Theory and Accelerator Science – this summer
- Decisions: OJI, Dark Energy solicitation, Advanced Detector R&D, etc.
- Project and targeted Reviews (DES, Daya Bay, …. LHC, ILC, etc.)
- Last University actions end of July

FY 2009 Request / Appropriations

- SC Congressional Hearings in March / Responded to Questions
- Working with NASA for MOU for participation on JDEM
- Analyzed impacts of Continuing Resolution

FY 2010 Budget Process

- Laboratory Managers Budget Briefings – February
- HEP Retreat – consensus on strategic plan/priorities for FY 2010/outyears – March
- Submitted and defended HEP 10-year Budget to SC – April
- There will be no submission of FY 2010 Budget to OMB or OMB Passback
- FY 2010 Budget will be submitted by new administration

- HEPAP P5 Report – expected in June

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Update on FY 2008 Funding

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Reminder:

FY 2008 Omnibus Bill provides $63M less than FY 2007 (-8.5%)

- Language specifies:
  - no funding for NOvA project at Fermilab
  - International Linear Collider (ILC) ad SRF R&D and SRF funding capped at ~1/4 requested

Impacts

- **Facility Operations**
  - Planned Tevatron/Fermilab operations supported
  - B-Factory/SLAC operations prematurely terminated (10 month → 4 months of operations)
- **Research programs**
  - Supported (~+3%/FY07) but eroded by COL and falling value of US$
  - Ongoing projects & R&D (DES, Daya Bay, JDEM R&D, etc.) supported (exception: NOvA)
- **Advanced Technologies R&D**
  - Seriously impacted (ILC & SRF R&D activities essentially stopped)
  - Loss of significant skilled workforce

- Fermilab and SLAC (because of NOvA & ILC/SRF funding) impacted most severely
  - Loss of total of ~400FTEs at the end of FY08 plus a “rolling furlough” at Fermilab
- Loss of science and investments and US credibility as an international collaborator
- Loss of momentum/direction for HEP program future (NOvA, ILC, ...)

There is still some possibility of supplemental funding for FY 2008

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Update on FY 2009 Budget Request

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Reminder:

FY 2009 HEP Budget Request ($805M) provides $115.6M more than FY 2008 (+16.8%)

- This is about COL (+3.5%/yr) from FY 2007
- Includes funding for NOvA project and modified plan for ILC and SRF R&D

Comments

- **FY 2010 Budget Request will be submitted by the new President**

- **Expectation of a 6-month Continuing Resolution**
  - Erosion of HEP efforts because of COL
  - No ability to make investments in needed capabilities for the program

  - Tevatron needs to complete its research program
  - This will be first year of LHC research program - resources will be needed to participate
  - Difficult programmatic decisions will need to be made.

Update on FY 2008 Activities

Outstanding Junior Investigator (OJI)

- FY 2008 funding was increased ($500k →$750k) – recommendation of COV
- Awards were made to 7 outstanding candidates

Dark Energy solicitation

- Received 70 proposals requesting ~ $15.2M involving 198 researchers
- Review panel met last week (available funding ~ $3.5M)

Joint Dark Energy Mission (JDEM)

- DOE, NASA and OSTP have been meeting regularly to lay out the plan for a mission
  - DOE and NASA have agreed to participate in a JDEM
  - JDEM will be a medium-class strategic mission with a competitively selected, PI-led dark energy science investigation
  - DOE and NASA will partner in the fabrication and operation of instrumentation necessary to execute the science investigation
  - DOE's cost for the fabrication and operations phase is estimated at this time to be less than or up to $200M (FY08$), roughly 25% of the expected total lifecycle mission.

  Agencies' Planning Schedule:
  - FY08 – AO released (draft in summer and final near end of FY)
  - FY09 – select particular concept and then start conceptual design
    2014 or 2015 – Launch

GLAST

- Now expected to be launched in June 2008

Update on FY 2008 Activities
Scientific Direction – HEPAP (P5)

DOE/NSF asked HEPAP (November 2007) to identify and evaluate the scientific opportunities and options that can be pursued at different funding levels for mounting a world-class, vigorous and productive national particle physics science program.

"Your report should provide recommendations on the priorities for an optimized high energy physics program over the next ten years (FY 2009-2018), under the following four funding profile scenarios:"

- Constant effort at the FY 2008 (Omnibus) funding level
- Constant effort at the FY 2007 funding level
- Doubling of funding starting in FY 2007
- Additional funding above the previous level, in priority order, associated with specific activities needed to mount a leadership program that addresses the scientific opportunities identified in the National Academy ("EPP2010") report.

Preliminary Comments – March 15, 2008
Final Report – June, 2008