

NSF-PHY News

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**HEPAP
June 3, 2010**

An Item of News and a Thank You

Ed Seidel has been appointed Assistant Director for MPS.

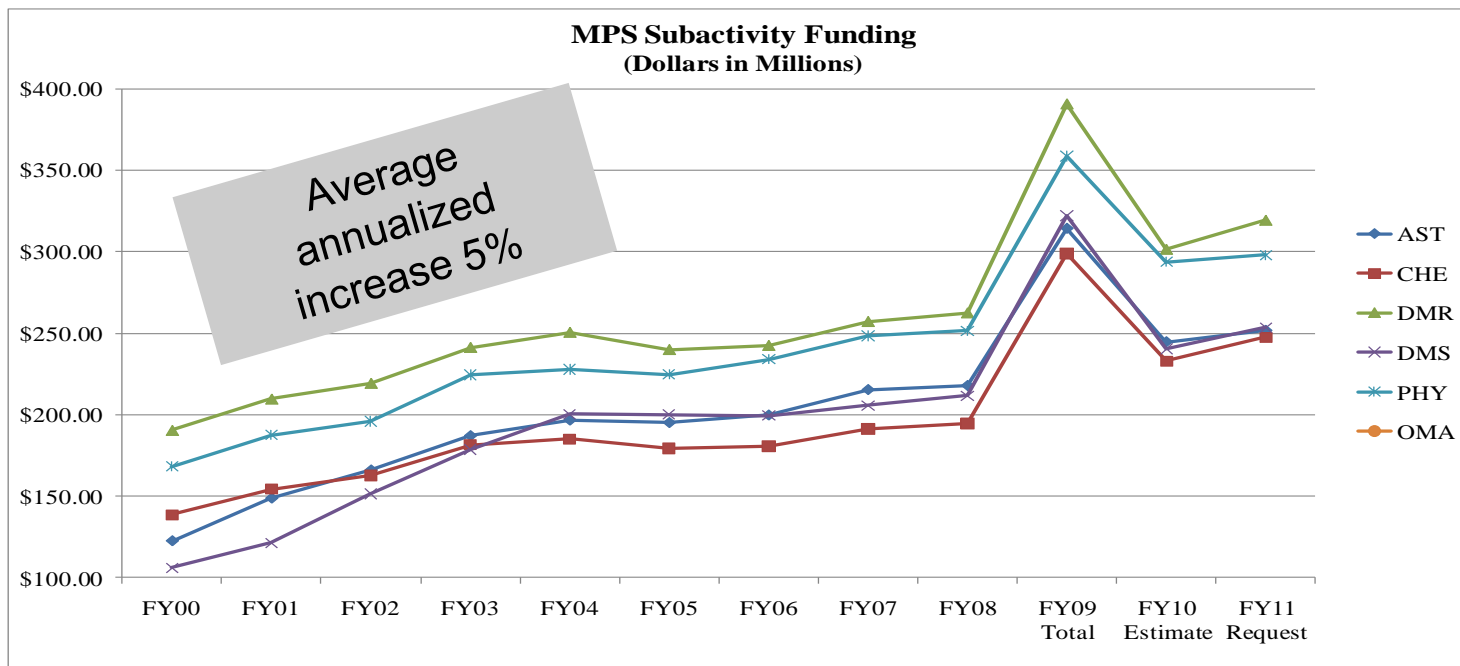
I would like to express, on behalf of those of us toiling away in the bowels of the agencies, our deep gratitude for the scientific community's unstinting willingness to serve as *ad hoc* and panel reviewers. The demand and importance are both increasing.

MPS FY 2011 Budget Request

Discovery
+6.7%

(Dollars in Millions)

	FY 2009 Omnibus Actual	FY 2009 ARRA Actual	FY 2010 Estimate	FY 2011 Request	Change Over FY 2010 Estimate	
					Amount	Percent
					Astronomical Sciences	\$228.67
Chemistry	211.67	87.36	233.73	247.56	13.83	5.9%
Materials Research	282.52	108.17	302.67	319.37	16.70	5.5%
Mathematical Sciences	224.84	97.34	241.38	253.46	12.08	5.0%
Physics	262.47	96.30	290.04	298.19	8.15	2.8%
OMA	33.70	-	38.33	39.56	1.23	3.2%
Total, MPS	\$1,243.88	\$474.97	\$1,351.84	\$1,409.91	\$58.07	4.3%



	FY 2010 Estimate	FY 2011 NSF Plan	FY 2011 Budget Request	FY 2011 Preservation Plan
Design	\$32.00	\$32.00	\$12.70	\$25.00
Facility Design	\$22.00	\$23.00	\$3.70	\$16.00
S4 Awards	7.00	6.50	6.50	6.50
EIS	3.00	2.50	2.50	2.50
Detector Technology	4.00	6.00	6.00	4.00
R&D	4.00	4.00	4.00	4.00
Research	-	2.00	2.00	-
Sanford Laboratory Access				13.00
Dewatering	-	-	-	4.00
Shaft/Safety	-	-	-	9.00
DUSEL Project, Total	\$36.00	\$38.00	\$18.70	\$42.00

(Dollars in Millions)

DUSEL Vision

- **DUSEL is being envisioned as a unique, dedicated international underground education & research center that would support a set of potentially transformational experiments in multiple disciplines.**
- **The U.S. particle, nuclear, and astrophysics communities have selected DUSEL as central to their national programs.**
- **The engineering, geology and biology communities are proactively engaged, and are part of all aspects of DUSEL planning.**



MREFC Concept for DUSEL

- The facility will host a variety of Physics and BGE experiments.
- The MREFC will include the facility construction and reserve a fixed amount of \$ for the integrated suite of experiments.
- By the time of the MREFC submission the scope of the experimental program will be defined; however no specific experiments need to have been selected.
- The PDR will provide a facility design that is able to accommodate “generic” suit of experiments.
- Experiments will be approved as they reach the right level of maturity.
- Funding in the MREFC line will be for:
 - Facility
 - NSF share of experiments –LBNE, Proton Decay, DBD, DM, Smaller Physics Experiments, BGE

NSF Reviews of Project

- **September 23-25, 2009, Sanford Lab.**
 - Mini-review, focus on cost, schedule, management
 - Included safety walkthrough of mine
- **December 17, 2009, U.C. Berkeley, NSF site visit**
 - Examination of project plan with upper management
- **January 18-22, 2010, Safety Panel + Large Cavity Advisory Board, Sanford Lab.**
 - Technical design & development, mine walkthrough
- **February 9-11, 2010, U.C. Berkeley**
 - Preparatory mini-review
- **April 12-14, 2010 South Dakota School of Mines & Technology**
 - Full project review
- **July 13-15, progress review of S4 physics awardees.**
- **December 2010 – Preliminary Design Review (target)**

NSF Reviews: Progress and Concerns

- ***NSF reviewed the project in February and April.***
 - Design team is lean but of proven high quality
 - Progress towards PDR remains good; schedule remains aggressive
 - Response to safety concerns good and must continue
 - Budgetary constraints imply a lean but scientifically sound program.
- ***Issues:***
 - Immediate shaft maintenance needed for safe access to complete work related to design
 - Scheduled support by South Dakota expected to end in FY 2011 (de-watering and continued access to mine)
 - Guidance on cost structure modified after April review

NSF/DOE Cooperation

- NSF/DOE agreed to establish DUSEL Physics Joint Oversight Group (JOG) immediately after release of P5 report
- Will jointly coordinate & oversee DUSEL experimental physics program
- JOG meeting monthly
- Other topics: NEPA, NRC study, safety, international participation
- **Agencies have agreed on DUSEL stewardship roles & core research program:**

Program Element	Steward / Partners
DUSEL facility	NSF /DOE
Dark matter	NSF / DOE HEP
Neutrino-less double-beta decay	DOE ONP/NSF
Long baseline neutrinos	DOE OHEP /NSF
Proton decay	
Smaller physics experiments	NSF and DOE
Other disciplines (Bio, Geo, Eng)	NSF

Interagency MOU planned for September of 2010, with draft in June 2010.

DOE – NSF JOG

JOG: Co-Chairs: D. Kovar (DOE/HEP), T. Hallman (DOE/NP), J. Dehmer (NSF/PHY)

JOG Working Groups:

LBNE and proton decay:

DOE: M. Procaro, J. Kotcher, E. Rosenberg

NSF: S. Meador, D. Lissauer

Double $\beta\beta$ decay:

DOE: J. Gillo, G. Henry, H. Nicholson, K. Turner

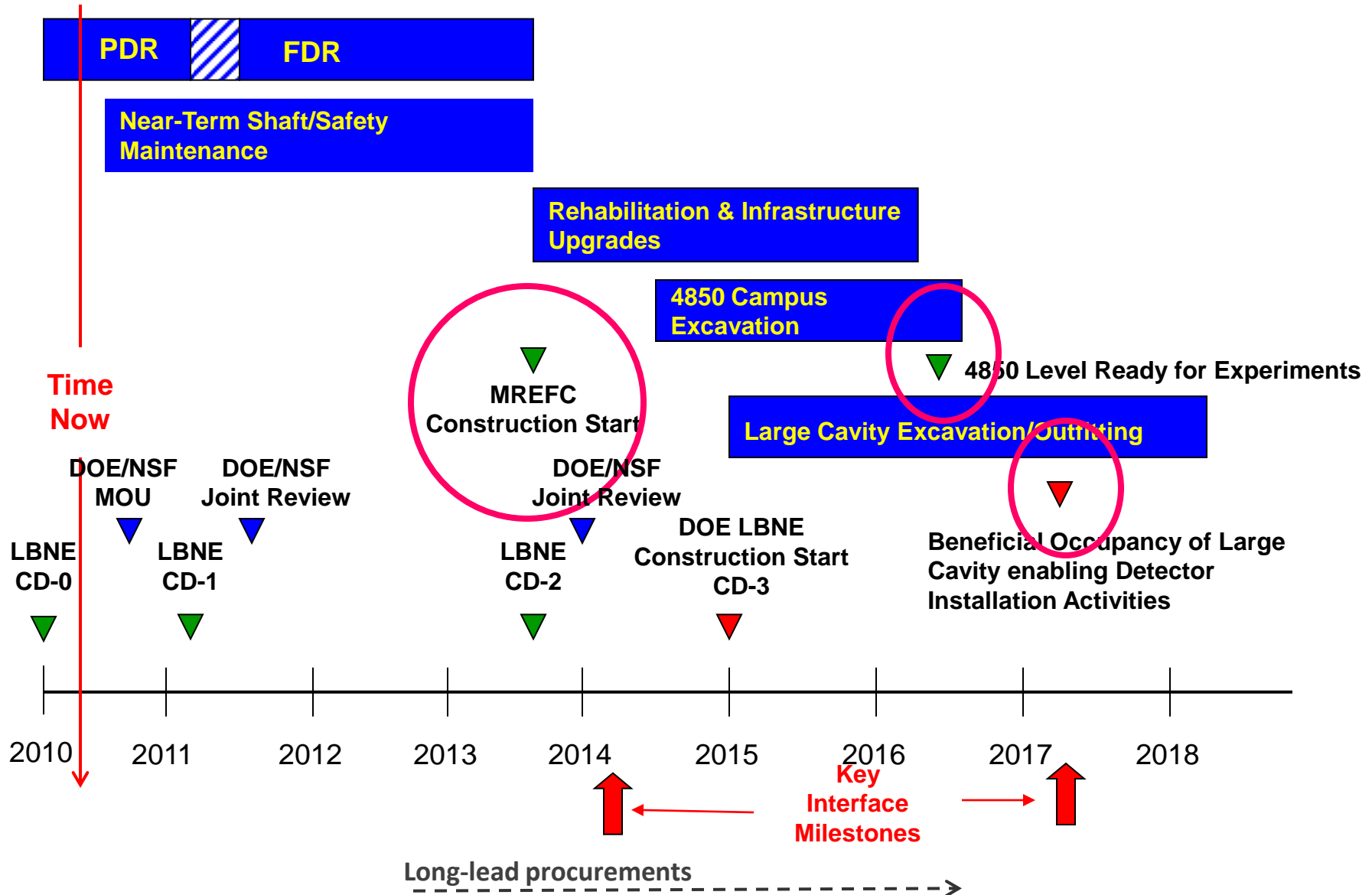
NSF: D. Lissauer, J. Whitmore

Dark Matter:

DOE: H. Nicholson, J. Kotcher, K. Turner

NSF: D. Lissauer, B. Keister, A. Opper, J. Whitmore

Key DUSEL Milestones: Preservation Scenario



Issues

- FY 2011 – 13 support for DUSEL planning
- A solid, value-optimized PDR
- Safety
- NEPA
- NRC study of DUSEL science
- Integration/design for science program
- International participation



Safety Update

- Water level holding at ~5060
- Bill Griffing taking charge of ES&H Organization
- Focusing on prioritized policies/procedures
- Updated Emergency Response Plans
 - Reevaluating ARUP evacuation strategy and AORs
- Drawing on DOE Lab expertise to enhance Sanford/DUSEL program (fire protection; training; procedures)
- Hislop working on overall assessment of ES&H program
- Griffing – Hislop provides good tension between building the ES&H organization and driving needed culture change

NEPA Update

- Nearing closure on DOE buy-in to NSF/DOE NEPA coordination strategy – meeting with DOE NEPA Office on Friday, June 4
- Argonne at NSF this week in preparation for DOE meeting, plus organizing internal to NSF
- Bill Griffing's NEPA experience will add value at Sanford Laboratory; DUSEL project adding an American Indian to leadership position with existing Cultural Outreach Committee
- NEPA activities will ramp up significantly over the summer

Bridge Funding FY 2011 - Reviews

Calendar year

Bridge Funding Proposal submitted to the NSF end of May

June 21-22nd Safety Review – Sanford Lab

June 23-24th Bridge Funding Review –

July – Package to the DRB/NSB for Bridge Funding

September NSB action item on FY 11 funding

August/September – Red team (Internal Project Review)

August September – Site visit – Cost and Schedule review

August/September – Safety Review – revisit Access restriction

October Project Review – If PDR is delayed to Feb.(Place holder)

December PDR Review –

This is still the baseline:

But if we need to delay the PDR by 2-3 month than we

We are
here

2010

2011