

Update on P-5 Subpanel

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**HEPAP Meeting
March 6, 2003
LBNL**

Particle Physics Project Prioritization Panel (P5) Charge:

Recommend priorities for projects in \$50m-\$600m total project cost range.

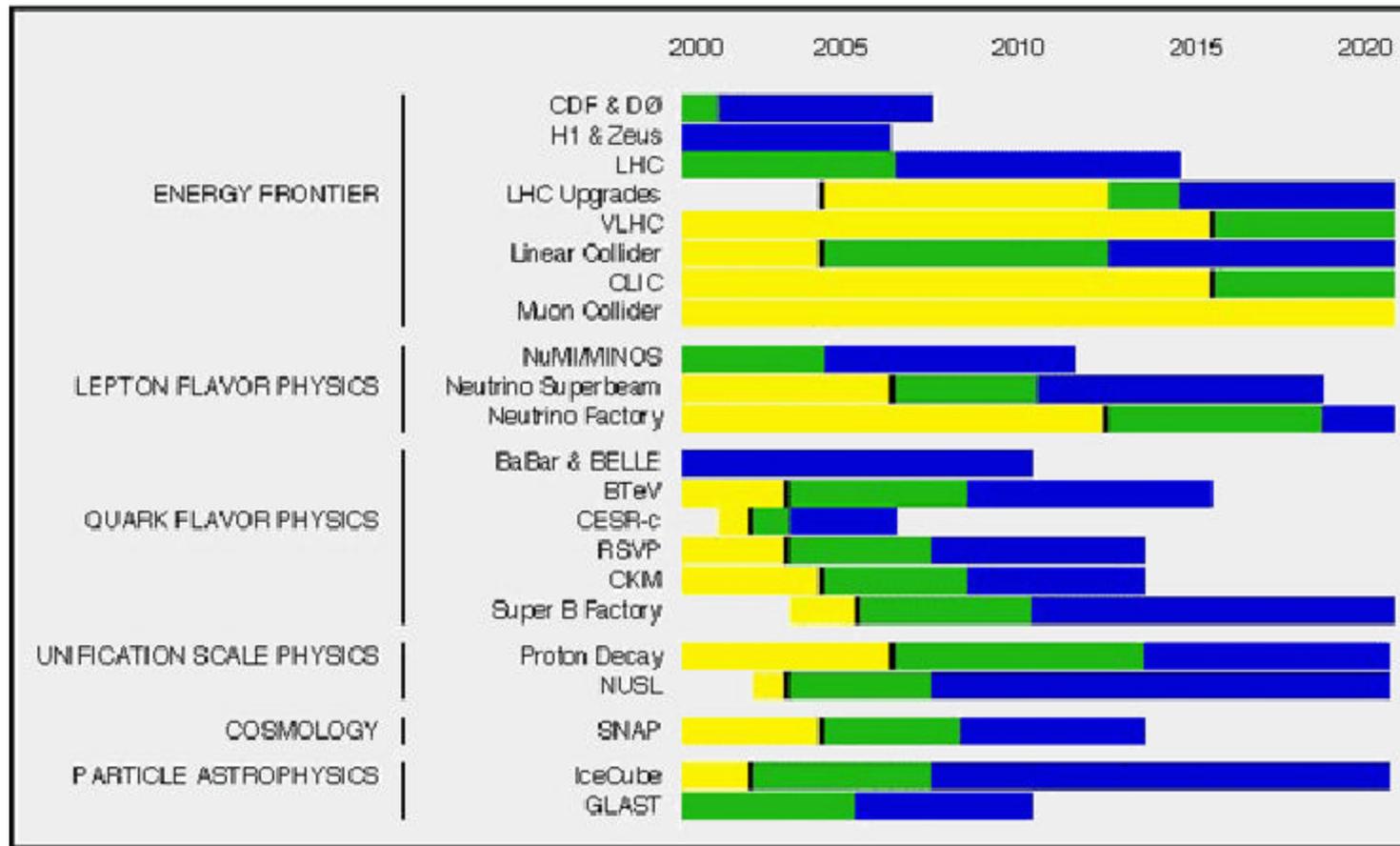
Planning for such projects is contained in a “roadmap”. We are charged to update the roadmap for the field. The roadmap includes identified decision points on a given project’s path from R&D, to construction, and then to operation.

Roadmap includes a number of projects that are well along in the approval process, have received the endorsement of a Lab PAC or equivalent, but have not yet begun full construction. These projects require explicit prioritization. We are asked to provide:

- (1) Evaluation of scientific merit and importance.
- (2) Have to lay out costs for: R&D, engineering design, construction, pre-operations, and operations. Comment on appropriateness of costs.
- (3) Evaluate what the scientific impacts would be if sufficient funding is not available during the timeframe of the projects under construction.

Charge includes the following guidance:

In assessing physics priorities, the Subpanel should weigh physics importance and the overall balance of the field within the context of available resources, including available funding and manpower, timescales, and other programmatic concerns. Where relevant, the subpanel should consider the international context of proposals, their relation to the programs of related fields such as nuclear physics and astrophysics, and their broader impacts on science and society.



Schedule of Meetings:

January 28 and 29

Alexandria, Virginia

February 15 and 16

Pittsburgh, Pennsylvania

March 26 and 27

Fermilab

Anticipate one final meeting for this year, not yet scheduled.

Work as part of facilities committee:

P-5 has worked on the Roadmap first, since we were asked by HEPAP and the agencies to participate on the HEP Facilities Committee, which is responding to a request from Dr. R. Orbach, Director of the Office of Science, for developing a 20 year plan for new facilities.

The January P-5 meeting was devoted to organizational questions as well as physics talks aimed at preparing us for the work on the Facilities Committee.

The general talks can be found at :

<http://doe-hep.hep.net/P5/>

Meeting in Pittsburgh was part of Facilities Committee deliberations.

The status of the Facilities Committee report was discussed in the previous talk.

Specific projects to prioritize by this summer:

CKM

BTeV

Fermilab Run IIb Detector Upgrades (Question to answer: Should full construction start?).

To expedite our work we have formed several subcommittees that will organize information for the full Subpanel.

- (a) For each of the three projects above, a subcommittee will gather the information on costs and schedules. These should be explicitly agreed to by both the laboratory and proponents of the projects.
- (b) An overall cost subcommittee to gather the funding projections for the field in order to understand how the projects fit into overall budget plans of agencies.
- (c) Roadmap committee to provide an updated roadmap based on response to Orbach and subsequent work of P5.

Agenda: March 26 and 27

March 26

Executive Session:		8:00 - 9:00
The Fermilab Program for the Next Decade (45+15)	M. Witherell	9:00 - 10:00
Accelerator Prospects (35+10)	S. Holmes	10:00 -
10:45		
Break		10:45 - 11:15
CKM		11:15 - 12:15
Physics(20+10)	P. Cooper	
Experiment(20+10)	R. Tschirhart	
Lunch		12:15 - 1:00
BTeV		1:00 - 2:30
Physics(30+15)	S. Stone	
Experiment(30+15)	J. Butler	
Break		2:30 - 2:50
CDF and D0 Upgrades:		2:50 - 4:20
Physics (30+15)	J. Womersley	
Projects (30+15)	P. Lukens	
Executive Session		4:20 - 6:30
Dinner		7:00

March 27

Questions for Proponents & PAC Chair		8:00 -
10:00		
Executive Session, including short Lunch Break		10:00 - 3:00

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Questions for the specific projects:

At the March meeting at FNAL the project proponents were asked to address:

1. **Physics goals, including measurements to be made. For each measurement, what is the expected precision for measuring Standard Model Parameters and/or the expected sensitivity to new physics? How does this sensitivity compare to other existing or proposed experiments (for BTeV compare explicitly to what can be expected from the B-factories, CDF and D-Zero, as well as LHCb)? For each measurement, what are the uncertainties stemming from hadronic physics or other physics? Are there physics topics for which one of CDF or D-Zero will provide a significantly better measurement than the other detector?**
2. **The international setting surrounding the project. What is the schedule for other competing experiments? By what date must the project start? What is the minimum number of years of running that the proponents would consider adequate? What is the projection for available manpower for construction and then detector operation and physics exploitation?**
3. **Detector related questions. For BTeV and CKM are there any detector components whose design and construction have significant risks? For each of the upgrades, what are the conditions under which silicon replacement is necessary (please be quantitative regarding the physics impact of no replacement for various luminosity choices)? What would the detector performance and schedule impacts be if the innermost silicon layer near the beam pipe were replaced with the remainder of the detector unchanged?**

Conclusion:

We should have the first report of P5 for HEPAP consideration around June.