



US LHC Accelerator Research Program
brookhaven - fermilab - berkeley

“The Last Word”

US LARP Collaboration Meeting
Port Jefferson
16-18 September 2003

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Meeting Objectives

- **Major Objective: Develop the detailed plan for FY2004.**
 - Specific work plan for each subprogram. *ö*
 - Modify, if necessary, division of \$ among subprograms and labs. *??*
 - FY2004 plan developed in context of planning for FY2005-06. *ö*
 - Follows from plan sketched in the Proposal. *ö*
- **Secondary Goals**
 - Address recommendations from June Lehman Review. *??*
 - Start to exercise the management systems sketched in the Proposal. *ö*
 - Consider whether and how to expand the collaboration. *??*



FY2004 Budget Submitted to DOE

July 2003

Program Total	1050	Acc Syst	637
BNL	330	BNL	203
FNAL	329	FNAL	185
LBNL	391	LBNL	249
Acc Syst	637	Instrumentation	300
BNL	203	BNL	69
FNAL	185	FNAL	69
LBNL	249	LBNL	162
Magnet R&D	325	Acc Phys	227
BNL	105	BNL	101
FNAL	100	FNAL	72
LBNL	120	LBNL	54
Pgm Mgmt	88	Hdw Comm	110
BNL	22	BNL	33
FNAL	44	FNAL	44
LBNL	22	LBNL	33

Longitudinal Density Monitoring

- Abort Gap Monitoring for machine protection
 - Required for day 1 operation
 - Separate from optical sampling system
 - Requires assessment for LHC (white paper study)
 - Wall current monitor
 - SR monitor
 - Implementation TBD in FY05
- Optical sampling system (aka laser-thing)
 - Begin laser engineering for LHC (possible LBL purchase of laser)
 - Continue development of system (electronics, machine studies.)
- Desired funding: 0.75 Sci/Eng
- Proposed budget: 0.0 Sci/Eng, 0.0 Designer, 0k\$ M&S





FY2004 Budget Requested Modifications

September 2003 Collaboration Meeting

	FY2003	Base	Requested		"Enhanced"
Program Total	670	1050	150	1200	1821
BNL	160	330	0	330	542
FNAL	140	329	0	329	570
LBNL	370	391	150	541	709
Acc Syst		637	150	787	1082
BNL		203	0	203	309
FNAL		185	0	185	297
LBNL		249	150	399	476
Magnet R&D		325	0	325	600
BNL		105	0	105	200
FNAL		100	0	100	200
LBNL		120	0	120	200
Pgm Mgmt		88	0	88	139
BNL		22		22	33
FNAL		44		44	73
LBNL		22		22	33



Bill Turner, Masimo Plaicodo and Bill Elliot of LBL have been very helpful so far. Makov's work on radiation loads is also essential. Integration at CERN is obviously very important. It surely makes sense for the ZDC group to work with these experts. It also would be very helpful if one TAN could stay in the US as long as possible so that problems of heat flow and the lift fixture could be dealt with easily.

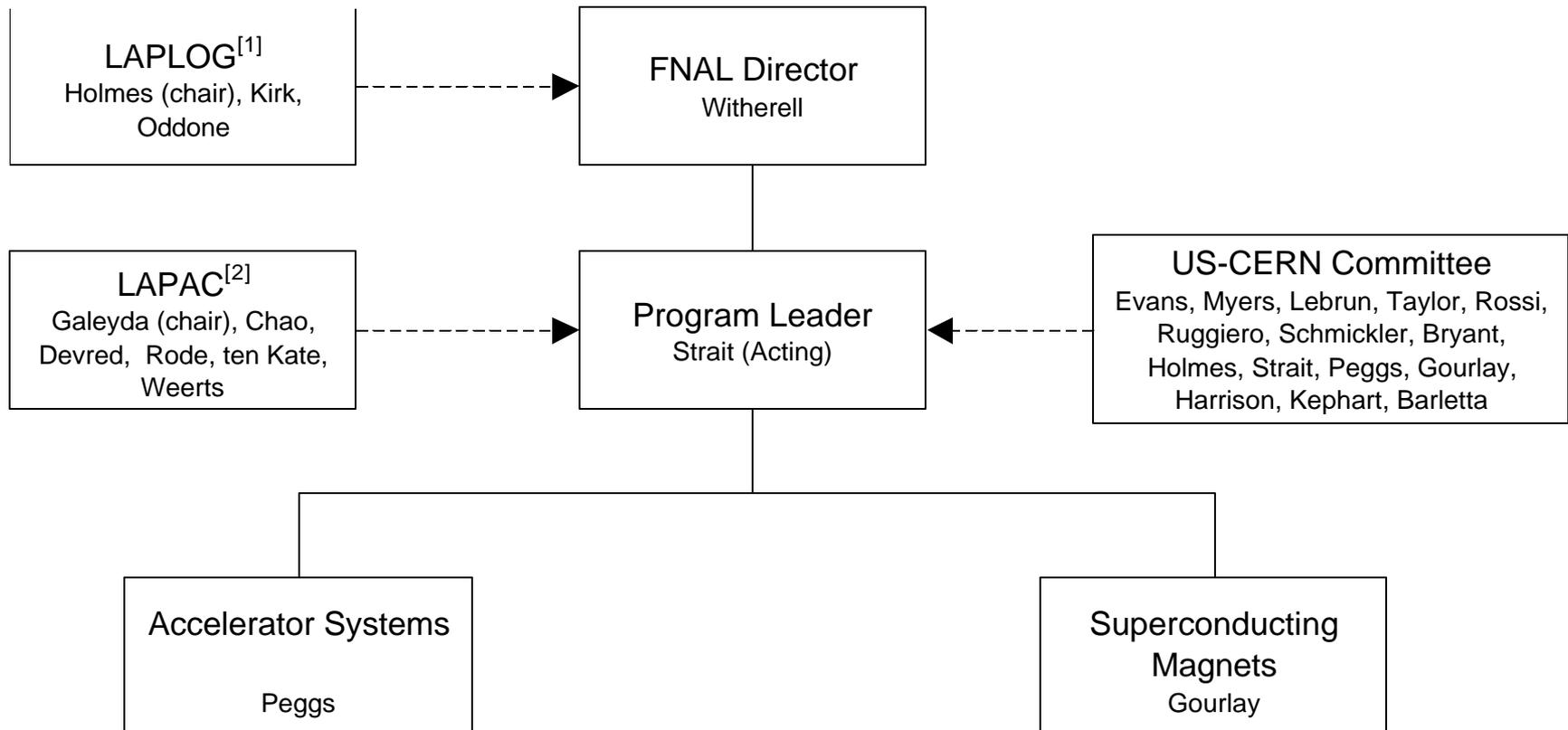


Guesstimated TimeLine & Resource Requirements

2004	2005	2006	2007	2008
Coupon Tests COLWAKE	Coupon Tests COLWAKE	X	X	X
Finish PO Specifcations ·Lattice ·Materials	Design P1 Build P1 Test P1 Design P2 Build P2	Test P2 Design P3 Build P3	Build P3 Test P3 Design P4 Build P4	Construct 5-10 Collimators
\$75k M&S + Shop	\$25K+125k+ 75k=\$225k	\$400k	\$500k	\$100k/each
0.5 ME 0.5 SLAC P 0.25 FNAL P	1.0 ME 0.5 SLAC P 0.25 FNAL P 1 M. Des.	1.0 ME 0.5 SLAC P 0.25 CTRLS 1 M. Des.	1.0 ME 0.5 SLAC P 0.25 CTRLS 1 M. Des.	



Advisory Committees





DOE Review Recommendations

Accelerator Systems

1. DOE should approve the proposal taking into account these comments and recommendations.
2. DOE should review the detailed work plan for FY 2004 and the planning for FY 2005 by August 2003.
3. Develop a management plan for the beam commissioning studies during FY 2004.
4. The instrumentation and beam commissioning groups should invite participation from outside the three primary laboratories in the LARP collaboration to staff these programs with the best personnel and bring these people into the U.S. HEP program.
5. Develop a mechanism for soliciting, reviewing, and selecting proposals for instrumentation and LHC upgrades.



DOE Review Recommendations

Magnet R&D

1. DOE should review the program one year after start of funding by an external review committee with the purpose to better define project goals and deliverables based on work accomplished in the first year.
2. DOE should request the LARP team to specifically address early in the program how the magnet design effort will be organized, and create the mechanisms to ensure that these design efforts drive the priorities of the R&D program.
3. Create the review mechanisms, either by DOE or LARP itself, to ensure that technical activities are not duplicated at different laboratories.
4. Define a formal structure by which tasks can be redefined and work (and supporting resources) reallocated among the laboratories based on the most successful research results and changing programmatic priorities.



DOE Review Recommendations

Magnet R&D (continued)

5. **Develop a process by which universities can contribute to this program** and be proactive in informing that community about the program needs. This should be done by the end of this calendar year.
6. **DOE should review by August 2003 a detailed work plan of activities for FY 2004** that includes the preparation of more definitive work packages for FY 2005 and beyond.
7. **DOE should approve this program** as proposed taking into account the comments and other recommendations as noted.



DOE Review Recommendations

Cost and Schedule

1. Maintain a rigorous systematic process across the U.S. LARP program for **consistently developing, evaluating, and monitoring cost and schedules estimates** used to plan and execute program activities.

Management

1. Proceed with the full implementation of the management structure proposed including **formal definitions of the roles and responsibilities of the line organization and the various advisory bodies by the end of this calendar year.**
2. Develop additional strategies for **increasing outreach with universities and other laboratories** by the end of the end of this calendar year.
3. **Prepare a description of the scope of work for FY 2004 by July 11, 2003.**