**Project X Collaboration Meeting: October 25-27 at Fermilab**

The fall 2011 Project X Collaboration Meeting will be held over October 25-27, 2011 at Fermilab.

**Meeting Goals**

1. Detailed discussion of the Reference Design, including specifically targeted technical issues and questions
2. Establish the scope of work and institutional responsibilities for FY12
   1. FY12 goals
   2. Institutional assignments
3. Establish the plan for a front end test facility at Fermilab
   1. Facility goals and scope
   2. Collaborator participation
   3. Plan for accomplishment of the work
4. Collaboration Council Meeting
   1. Review of Project X status and strategy
   2. Review current institutional assignments
   3. Establish next Collaboration Meeting dates and site

**Background Information**

Since the April meeting the Reference Design has continued as the basis for design and development activities. A number of changes have been made to the design – these have been implemented through a Technical Board. The most significant of these changes has been the decision to utilize half wave resonators for acceleration from 2.1 to 10 MeV.

The R&D program is organized around the Reference Design. As a major initiative Fermilab is proposing the development of the first 15-25 MeV of the Reference Design as a demonstration of the critical technologies that underlie the Reference Design, including the H- source, RFQ, wideband chopper, and initial stages of acceleration.

The Department of Energy is organizing a Workshop on Fundamental Physics at the Intensity Frontier for the first week in December. This workshop will look at the physics enabled by Project X as well as other high intensity facilities, such as B-Factories. While the workshop will focus on physics we will be working hard to present a coherent view of the Project X facility and the associated physics program.

The collaboration with India on high intensity proton accelerators has been strengthened with the signing of an Implementing Agreement between the U.S. Department of Energy and the Indian Department of Atomic Energy. The agreement covers accelerator and particle detector development for discovery science. The agreement provides a framework for annexes covering specific collaborations.

Also this summer an agreement was signed between DOE and CAS to promote cooperation in high energy and nuclear physics, and other areas. A number of visits and discussions have place with European (ESS and CERN/SPL) and Asian (China/IHEP/IMP and Korea/KoRIA) colleagues concerning modes of cooperation and/or collaboration on high intensity proton facilities.

Funding available for Project X activities in FY12 totals $13.0M – a 25% increase over FY11. This covers activities both at Fermilab and the outside laboratories. This amount does not include superconducting rf development which is supported independently.

The October 2011 Collaboration Meeting will provide an opportunity to discuss the Reference Design and its accompanying technical issues and alternatives for implementation. The primary goals of the meeting will be to develop a collaboration-wide view on the scope and goals of a front end test facility, and to assure that everyone understands collaboration goals and the execution plan for FY12.

The following documentation will be available for the meeting:

Reference Design Report

FY12 proposed budget

**Organization**

* Opening plenary session devoted to Project X status, strategies, and plans; international activities.
* Day two plenary devoted to joint task forces and staging
* Individual working group meetings co-organized by Fermilab and outside leads
  + Targeted technical discussions on specific aspects of the Reference Design, and possible alternative implementations;
  + Discussion of the plan for a front end test facility;
  + Confirm goals and work assignments for FY2012.
* Collaboration Council meeting
  + Request that each participating laboratory provide a representative with authority to speak for their institution in the Collaboration Council meeting.
  + Primary discussion will be on strategy and collaboration governance;
  + Secondary discussion on institutional assignments
* Working group summaries on Thursday morning.

The meeting will end by noon on October 27 to allow people to catch afternoon/evening planes home.

**Provisional Agenda**

Tuesday, October 25

Registration 08:00-08:30

Plenary Session 08:30-10:00

Welcome, Fermilab Strategic Plan P. Oddone

Project X News, Strategy, Meeting Goals S. Holmes

Project X Reference Design and R&D Plan S. Nagaitsev

Coffee Break 10:00-10:30

Plenary Session 10:30-12:00

ESS Activities D. McGinnis

SPL Activities E. Ciapala

India Activities P. Singh

Lunch 12:00-13:00

Plenary Session 13:00-14:30

DOE Intensity Frontier Workshop H. Weerts, J. Hewett

Muons@PX Task Force V. Lebedev

Muon Collider Task Force K. Gollwitzer

Coffee Break 14:30-15:00

Working Groups Session 1 (2.5 h) 15:00-17:30

Adjourn 17:30

Collaboration Council meeting 18:00-19:30

Wednesday, October 26

Working Groups Session 2 (1.5 h) 8:30-10:00

Coffee Break 10:00-10:30

Working Groups Session 3 (1.5 h) 10:30-12:00

Lunch 12:00-13:00

Working Groups Session 4 (2 h) 13:00-15:00

Coffee Break 15:00-15:30

Working Groups Session 5 (2 h) 15:30-17:30

Adjourn 17:30

Thursday, October 27

Working Group Reports 08:30-10:00

Coffee Break 10:00-10:30

Working Group Reports 10:30-12:00

Adjourn 12:00

**Working Groups**

Charge to the working groups:

* + Detailed discussion of Reference Design, including specifically targeted technical issues and questions;
  + Confirm goals and work assignments for FY2012;
  + Develop strategies for the front end test facility;
  + Identify any issues related to the above that need resolution

As in the spring we will run only two working groups in parallel at any given time. This will allow people to have access to multiple working groups. We will move the Collaboration Council meeting to the evening in order to allow CC members to participate in all sessions.

Program Committee

A program committee has been established to set up the detailed program. Program Committee members are:

Sergei Nagaitsev/Fermilab

Jim Kerby/Fermilab

Valeri Lebedev/Fermilab

Bob Tschirhart/Fermilab

Rod Gerig/ANL

***Everything from here on down is subject to modification by the Program Committee***

Working Groups/Topics for Discussion

A preliminary list of Working Groups and topics for technical discussion has been developed. The Program Committee will use this as a starting point in their construction of the program. It is anticipated that not all topics listed will actually be discussed at the meeting.

WG1: CW Linac & PXIE/Kephart, Lebedev, Ostroumov, Li (4.5 hour)

* PXIE optics and its relationship to the Project X optics
* PXIE layout, location and engineering issues
* LEBT&RFQ
* MEBT&Beam chopping
* Half-wave cryomodule design issues
* SSR1 cryomodule design issues
* Optimization of elliptic cavities
* PXIE RF systems
* PXIE instrumentation (BPMs, profile monitors and other)
* PXIE cryogenics
* Cavity processing (schedule limitations and what needs to be done)
* Medium Q-slope (achievements and ways to improve it)

WG2: Pulsed Linac/ Solyak, TBD (1.5 hour together with WG-3)

* Long pulse operation

WG3. MI/Recycler/Kourbanis, TBD

* H- Injection
  + Laser stripping, alternative foil configs
* E-cloud
* RF systems
* Space-charge

WG4: Experimental Requirements/Tschirhart, Mokhov, Lebedev

* Target’s issues for MW scale beams
* Requirements and possible implementations for beam delivery to experimental areas and to the secondary particles beam lines

Collaboration Council/Holmes

* Collaboration governance plan
* Institutional assignments
* FY12-13 plan