

## Steering Committee Kick-off Meeting

Noon – 1:30 pm (Chicago time)

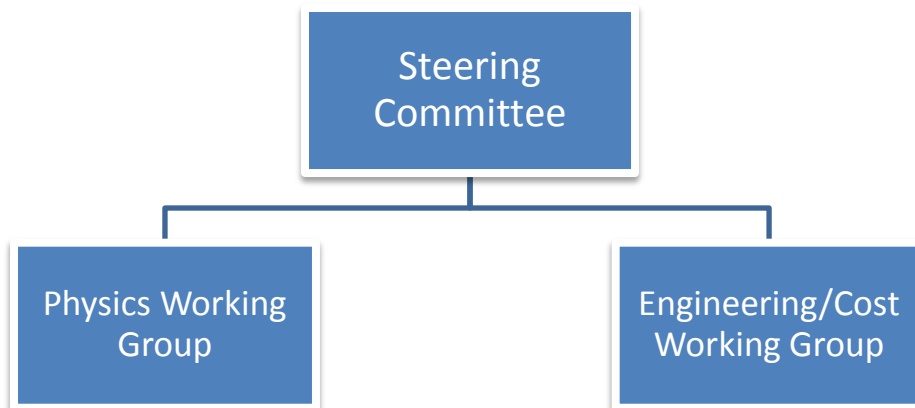
Monday, April 9, 2012

Remote connection information (ReadyTalk phone conference):

1. Dial Toll-Free Number: 866-740-1260 (U.S. & Canada)
2. International participants dial:
  - Toll Number: 303-248-0285
  - Or International Toll-Free Number: <http://www.readytalk.com/intl>
3. Enter 7-digit access code, 4085515 followed by “#”

### Agenda:

1. **Noon – 12:20 pm** Role of the Steering Committee



The Steering Committee provides guidance to working groups (in particular, the committee provides options for consideration to working groups), and oversees the working groups. The Steering Committee writes a preliminary report by June 1, which will be vetted by our Physics Advisory Committee (June 19-23) and the FRA Board of Directors (June 14-15), and a final report by July 1. The time scale is very short because the results will influence the Congressional budget process for FY13 and the Office of Science planning process for FY14. The Steering Committee, together with working groups, will organize a workshop on April 25-26. This is to inform the community, discuss the status of the work in progress and seek input, The workshop will be open to all interested parties.

**2. 12:20 – 12:30 pm Introduction of the Steering Committee and Working Groups**

**Steering Group members:**

- 1) Young-Kee Kim, FNAL, Chair (Deputy Director)
- 2) Bob Svoboda, UC Davis (LBNE Co-Spokesperson)
- 3) Gary Feldman, Harvard (NOvA Co-Spokesperson)
- 4) Kevin Lesko, LBNL (Head, Sanford Underground Research Facility)
- 5) Ann Nelson, Washington, Seattle (member of HEPAP)
- 6) Charlie Baltay, Yale (Chair, P5)
- 7) Jon Bagger, JHU (former Deputy Chair of HEPAP)
- 8) James Symons, LBNL (Associate Lab Director, LBNE Lab Oversight Group member)
- 9) Steve Vignor, BNL (Associate Lab Director, LBNE Lab Oversight Group member)
- 10) Mel Shochet, U.Chicago (Physics WG Chair, former Chair of HEPAP)
- 11) Mark Reichanadter, SLAC (Eng./Cost WG Chair, co-chair of DOE’s DUSEL review committee)

**Ex-officio members:**

- 1) HEPAP chair, NRC study chair: Andy Lankford, UC Irvine
- 2) PASAG chair: Steve Ritz, UC Santa Cruz
- 3) DOE’s DUSEL review committee co-chairs: Jay Marx, Caltech and Mark Reichanadter, SLAC
- 4) DPF chair: Pierre Ramond, U. Florida
- 5) DOE Intensity Frontier Workshop co-chairs: Harry Weerts, ANL and JoAnne Hewett, SLAC
- 6) LBNE Project Manager: Jim Strait
- 7) Fermilab Director: Pier Oddone
- 8) LBNE Lab Oversight Group member: Susan Seestrom, LANL

**Scientific Secretary:** Jeffrey Appel serves as the scientific secretary

**Working Group members:**

<b>Physics Working Group</b>	<b>Engineering/Cost Working Group</b>
1) Mel Shochet, U.Chicago (chair)	1) Mark Reichanadter, SLAC (chair)
2) Kate Scholberg, Duke	2) Jeff Sims, ANL
3) Milind Diwan, BNL	3) Jim Strait, FNAL
4) Mark Messier, Indiana	4) Vaia Papadimitriou, FNAL
5) Mary Bishai, BNL	5) Bruce Baller, FNAL
6) Jenny Thomas, UCL	6) Chris Mauger, LANL
7) Gina Rameika, FNAL	7) Elaine McCluskey, FNAL
8) Sam Zeller, FNAL	8) Mike Headley, SURF
9) Bonnie Fleming, Yale	9) Marvin Marshak, U. Minnesota
10) Gil Gilchriese, LBNL	10) Bob O’Sullivan, FNAL
11) Bill Marciano, BNL	
12) Stephen Parke, FNAL	
13) Ed Blucher, UChicago	
14) Steve Brice, FNAL	
15) Charlie Young, SLAC	

### 3. 12:30 – 1:30 pm Options for consideration

The Steering Committee will provide options for consideration to working groups. Given that time is very short, our goal is to make the first short list of options to working groups by the end of the kick-off meeting. Guideline for options:

1. It should be tied to a vision for US leadership. We start with the goal of aiming for what the program could be in 20 years – leading with the best physics.
2. The physics group will study physics reach of each option.
3. For the engineering/cost group, there is no time for original work, only gathering numbers, aiming for uniform criteria, commenting on reliability and risks, etc. They could start with the (rather detailed/carefully-done) Homestake numbers and make perturbations around these.
4. Detector technology: stick to LAr TPC. Water Cerenkov will not be part of studies.

The following are a set of options for discussion at the kick-off meeting. We may be able to eliminate some of the options by the end of the kick-off meeting.

1. LBNE Phase-1 Options (preserves the ability to achieve full goals of LBNE in time)
  - a. Beam + short baseline only
  - b. Beam + small detector at SURF
    - i. Surface
    - ii. Depth (4850L)
  - c. Far detector only at 4850L
    - i. ½ detector
    - ii. Full detector
2. NuMI Options
  - a. Off axis
    - i. Comparison of mass hierarchy as a function of detector mass
    - ii. Comparison of CP reach as a function of detector mass assuming the mass hierarchy is known
  - b. On axis
    - i. Comparison of mass hierarchy as a function of detector mass
    - ii. Comparison of CP reach as a function of detector mass assuming the mass hierarchy is known

Outside group option suggestions need to be transmitted through Steering Committee

## Specs for Options

In order for the physics group and the engineering/cost group to get the needed numbers quickly, we need to tell them a set of parameters explicitly for each option. Those parameters include:

- detector depth
- beam energy
- angle relative to the beam center
- exposure
- detector size

Here is the set of parameters that we propose to give:

- For LBNE Options:
  - Beam – LBNE baseline design
  - Near detector – LBNE baseline design
  - Far detector – LBNE baseline technology (LAr TPC)
  - Depth – surface or 4850L
  - Exposure – 10 years (2021 – 2030)
- For NuMI Options
  - Exposure – 10 years (2021 – 2030)
  - On-Axis
    - LAr detector in the Soudan Mine (depth and angle defined)
    - Low Energy Beam = the current MINOS beam (energy controlled by moving the target)
  - Off-Axis (angle defined)
    - LAr detector at Ash River (surface and angle defined)
    - NOvA beam = Medium Energy Beam
- Assumptions for NOvA and T2K results
  - NOvA runs for 6 years through 2020 at a beam power of 700 kW
  - T2K runs through 2020 at a beam power of 300 kW (T2K is running at 120 kW right now they will get to ~400 kW in a few years)