

Machine-Experiments Interface
Study Group
and
DUSEL Beamline Working Group

Jeffrey A. Appel

Fermilab 3rd Project X Physics Workshop

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Machine-Experiments Interface
Study Group
(MEISG)

MEISG Charge (1)

The Fermilab Machine-Experiments Interface Study Group is charged with helping the Laboratory respond to the experiments and opportunities presented for its future accelerator-based research program. The earlier efforts of the Fermilab Steering Group have been rewarded by a large number of nascent proposals. Many of these opportunities require special beam conditions and the use of various combinations of the Laboratory's existing accelerator rings. Not all of these requirements are consistent with concurrent running.

The Study Group is charged to help define and clarify these matters as input to future program planning by the Laboratory, and to assist experiment proponents in planning for the best use of facilities, those existing and those which may be built. The group should consider the phased implementation of experiments to optimize cost, future program development, and other factors.

MEISG Charge (2)

In particular, the Study Group should identify the needs for implementing relevant experiments at Fermilab, including

those features of the existing facility which may be needed,

existing facilities which might be upgraded to permit implementation of the experiments,

those features of the experiments for which the facilities do not exist and would have to be developed,

which experiments can be run concurrently with no compromise in performance, which can be run concurrently with some compromise in performance, and which are incompatible with concurrent running.

options for implementing experiments which optimize for:

- 1) near-term costs,
- 2) broader-based future facilities, and
- 3) other features which may benefit the Laboratory or its future programs in any other ways.

MEISG Charge (3)

The Study Group will make a series of reports to the Directorate, the first to be an overview of the experiments and items above.

This first report should be drafted by September 15, 2008.

The Study Group report should prepare the ground work for conceptual design reports once the priorities of the research program are established, or as input to that process.

MEISG Team

Chuck Ankenbrandt

Jeff Appel (Chair)

Dixon Bogert

Mike Church

Dave McGinnis

Eric Prebys

Gina Rameika

Bob Tschirhart

MEISG Meetings/Activities So Far

- Meeting – April 18, 2008
Introductions, discussion of charge
- Meeting – May 2, 2008
Muon to electron conversion experiment & kaon experiments needs
- Meeting – May 23, 2008
Neutrino experiments needs
(g-2) experiment needs
- Next meeting
P5 and Laboratory priorities and implications

DUSEL Beamline Working Group (DBWG)

DBWG Charge (1)

Fermilab is intent on pursuing the strongest possible program to make use of our proton beam capabilities. In the future, especially with the pursuit of Project X, this will include further development of very-long-baseline neutrino experiments. One of the options may be for a beam directed at a Deep Underground Science and Engineering Laboratory (DUSEL) at the Homestake Mine site. We need to develop a plan for the beam for this opportunity in order to understand the optimum parameters, costs, and possible schedule for such a beam.

DBWG Charge (2)

The DUSEL Beamline Working Group is charged with development of a conceptual plan for an appropriate beam from the Fermilab Main Injector to DUSEL, starting with work already available, and understanding relevant trade-offs in capability and cost or schedule, and other issues which may arise in its studies. The plan should include (but not be limited to) issues related to new civil construction, targeting, beamline optics and components, near detector hall, and beamline instrumentation. The DUSEL beamline may be considered from where it might depart from the NuMI beamline. The plan should incorporate the assessment and mitigation of all potential safety hazards and environmental impacts, and include public involvement initiatives.

DBWG Team

- Mike Andrews
- Jeff Appel (Chair)
- Dixon Bogert
- Alan Bross
- Sam Childress
- Don Cossairt
- Bill Griffing
- Nancy Grossman
- Dave Harding
- Jim Hysten
- Vic Kuchler
- Chris Laughton
- Mike Martens
- Elaine McCluskey
- Rob Plunkett
- Gina Rameika
- George Velez
- Bob Zwaska

Ex Officio: Young-Kee Kim, Steve Holmes

BNL contact: Milind Diwan

LBNL contact: Kevin Lesko

DBWG Meetings/Activities So Far

- Meeting – April 30, 2008
 - Introductions, discussion of charge
- Meeting – June 2, 2008
 - Neutrino experiment beam needs
 - Lessons learned from NuMI experience
- Meeting – June 9, 2008
 - Project X WG and relation to DBWG
 - Siting considerations for DUSEL beamline

Documents Will be Available

<http://beamdocs.fnal.gov/SNuMI-public/DocDB/ListTopics>

See the topics under
MEISG
and
DUSELBWG
respectively.