



# News from Fermilab (and other topics relevant to SBN)

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ICARUS Collaboration Meeting

Wed 19 September 2018

# SBN Director's Review

- A Director's Review for SBN was held June 26-28 2018
  - [Review web page](#)
- The charge and format were very different from the three previous reviews:
  - Focus on schedule elements and integrated schedule
  - Not a review of technical choices or cost
  - Small breakout sessions discussing deliverable tasks with respect to schedule
- In future we are considering moving to a model where the review is charged and overseen by the international stakeholders

# SBN Director's Review

- From the executive summary of the [Review Final Report](#)
  - “The main conclusion of the review was that while an overall integrated schedule for completion of each detector was not available, the information needed to create these schedules does exist.”
  - “The committee also reviewed outstanding risks, that if realized would impact the ability of the program to keep on schedule. The committee felt that the sub-system teams had a good handle on their risks and are working towards mitigating outstanding risks.”
  - “The committee notes that to date the schedule for the installation of the far detector cold vessels has encountered a number of serious delays, however, the near term schedule for getting the vessels installed will be a significant achievement and careful planning of all the tasks going forward will be needed to try and accelerate the achievements of key milestones I-1 and I-2.”
  - “Finally, it is extremely important that the agreements needed to begin the final design of the near detector cryostat be put into place as soon as possible, so that the schedule for the construction of the cryostat does not significantly delay achieving the milestones S-2 and S-3”

# SBN Multi-Institutional MOU

- A Memorandum of Understanding (MOU) for building of the SBN program is in draft form
- The expectation is that it will be signed by the parties contributing to building the SBN program
- Such a multi-institution document is unusual for the US DOE
- Blazes an important trail for future DUNE agreements

# Parties to the SBN MOU

- The Parties to the SBN MOU are the agencies, labs, and universities providing the resources to build the program
  - Fermi National Accelerator Laboratory (“Fermilab”);
  - The National Science Foundation of the United States (“NSF”);
  - European Organization for Nuclear Research (“CERN”);
  - Istituto Nazionale di Fisica Nucleare (“INFN”);
  - United Kingdom Research and Innovation (“UKRI”);
  - University of Bern, Switzerland (“Bern”);
  - Los Alamos National Laboratory through its associated Laboratory Directed Research and Development program (“LANL”);
  - University of Campinas, Brazil (“U. Campinas”).
- There are about 50 institutions in the SBN collaboration that will operate the detectors and analyze the data from them

# Proposed Annexes to the SBN MOU

- **Annex 1:** Institutions Collaborating in the SBN Program and Names of Their Contact Persons
- **Annex 2:** SBN Collaboration Organization Structure
- **Annex 3:** SBN Program Governance
- **Annex 4:** SBN Cryogenics, SBND Cryostat, and ICARUS Cosmic Ray Tagger
- **Annex 5:** SBND Cosmic Ray Tagger
- **Annex 6:** Participation of SBN Participant in Each SBN Subproject for ICARUS and SBND
- **Annex 7:** Ownership of Equipment to the SBN Program
- **Annex 8:** Financial Guidelines for the SBN Program

# SBN Oversight Board (SBN-OB)

- **Purpose:** The SBN-OB is internal to SBN and will provide a key forum for cross-collaboration communication or agreement development on issues relevant to construction, commissioning, operations, data management, and analysis.
- **Membership:** The group will consist of
  - ICARUS and SBND spokespersons
  - SBN collaborators selected to provide good representation of the international groups making major contributions to the ICARUS and SBND detectors,
    - Italy-INFN
    - US-DOE and NSF
    - UK-UKRI
    - Switzerland
    - CERN
  - As Host Lab, the initial Chair of the board is the head of Fermilab Neutrino Division
- **Timeline:**
  - First meeting held May 15, next meeting Sept 21
  - Developing an agreement on data sharing, common analyses and publication

# SBN Institutional Board (SBN-IB)

- **Purpose:** The SBN-IB will provide a forum for program-wide communication on issues relevant to the Program. Procedures, policies, and bylaws covering joint aspects of operation, data sharing, data analysis, publications, etc. can be brought to this body for deliberation or developed from within the group. Agreements developed within the SBN-IB will need to return to the individual collaborations for final ratification.
- **Membership:** The SBN-IB will consist of one member from each institution participating in the SBN Program. Each institution's representative is selected by that institution and communicated to the IB chairperson who will maintain the official list of membership and mailing list. The chairperson will be elected by the members of the IB from within its membership.
- **Timeline:** Gina Rameika is serving as interim SBN-IB chair. The first meeting will be Sept 22. Gina's first task is to run an election for SBN-IB chair. The SBN-IB signals the formal start of collaboration



# SBN Joint Working Groups

- **Purpose:** A set of SBN Joint Working Groups are needed to co-develop many key aspects of SBN operations and physics analysis. Several joint working groups already exist making extensive use of the experience running MicroBooNE and ICARUS
  - **SBN Analysis:** Explore how combined SBN physics analysis for sterile neutrino oscillation searches can be most effectively performed. Work focuses on implementing a three detector simulation, building reconstruction and analysis tools within a common framework, and developing an end-to-end common analysis scheme in preparation for real data exploitation.
  - **SBN DAQ and Data Pre-processing:** Prepare the infrastructure for the efficient collection of high quality data with ICARUS and SBND using common strategies whenever possible.
  - **SBN Slow Controls:** Compare Slow Controls needs and designs and identify common hardware and software solutions for ICARUS and SBND.
  - **SBN Cosmic Ray Tagger:** Work on the CRTs of both detectors including a common analysis of CRT data and bringing in experience from MicroBooNE.
  - New SBN Working Groups shall be set up as needed by the SBN-OB with the intent of spanning all detector subsystems
- **Membership:** The Working Groups are open to all participants in the SBN Program. For each Working Group the SBN-OB will identify a set of conveners to lead the activities of the group and report progress to the SBN-OB and the collaborations.