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The Neutrino Landscape and the Purpose of this R&D Facilities Workshop

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Fermilab Neutrino Detector R&D Facilities Workshop

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Big Neutrino Investment – Appropriate R&D Maximizes Return

- The next decade in accelerator neutrino physics will see a very healthy array of new detector and new technology exploitation...
 - MicroBooNE and NOvA will see through their approved runs
 - SBND and ICARUS will complete the SBN program
 - The ProtoDUNEs (single and double phase) will be constructed and operate at CERN
 - The first 10kton DUNE detector will be built
 - R&D and Design of the remaining DUNE detectors will progress
- This represents a huge investment in the physics that can be learnt from accelerator neutrinos
- Ensuring the best return on that investment means sustaining an appropriate level of neutrino detector R&D in the community

Competition for Resources within Neutrinos

- The huge investment that our field is about to make in LBNF/DUNE will squeeze funding to all parts of particle physics
- The project funds for LBNF/DUNE will squeeze funding for neutrino operations, research, and R&D
- It would be very unhealthy for the field to stop all neutrino detector operations or R&D
- But we will not be able to operate all the detectors or do all the neutrino detector R&D that we might want to
- We have to find the right balance

Role of the National Labs

- Our accelerator neutrino community functions best when the US National Labs are facilitating the work of the Universities
 - Providing user facilities
 - Providing expertise and engineering
 - Providing project management
 - Providing a hub for scientific interaction
- This facilitation applies to neutrino detector R&D as well
- In Fermilab's neutrino division we are trying to significantly up our game when it comes to facilitating the neutrino community
- This workshop and our approach to neutrino detector R&D is part of that process

Purpose of This Workshop

- In order to understand how to balance the competing calls on neutrino resources we need input
- This workshop has been set up by Fermilab's Neutrino Division to understand how to optimize its investment in detector R&D facilities
- What neutrino detector R&D does the community need to perform in the next few years?
- We cannot guarantee that all requests can be met
- We need to understand how to evolve our facilities to maximize their impact whilst balancing the demands for resources between neutrino projects, operations, research, and detector R&D