



U.S. DEPARTMENT OF
ENERGY

Office of
Science

DOE Neutrino Program Plans

HEPAP Meeting Apr 7 2015

Glen Crawford

Director, Research and Technology R&D

Office of High Energy Physics

Office of Science, U.S. Department of Energy

DOE Process for Intermediate Neutrino Program

- **P5 recommended:**
 - LBNE(F) as the highest priority major project in the medium term
 - A balanced and coherent program of short baseline neutrino experiments including small projects
- **Plans for LBNF/DUNE are moving along well and the FNAL PAC has endorsed a plan for a coordinated FNAL short-baseline LAr program**
 - LAr1ND, MicroBooNE, ICARUS in Booster beamline
 - Both a physics program and a technology R&D platform
- **There are many other possible short-baseline neutrino experiments using other facilities, with and without accelerator beams**
 - Many R&D efforts underway at various stages of maturity
- **DOE is interested in understanding these various options and plans in more detail**
 - The WINP workshop provided important community input regarding these options, necessary for formulating and executing a successful program based on the P5 strategy

WINP 2015

- The Workshop on the Intermediate Neutrino Program provided important community input to DOE HEP necessary to execute a successful program based on the P5 report strategy
- Report nicely summarizes the state of progress and key issues in several sub-topics



WINP2015

Workshop on
the Intermediate
Neutrino Program

February 4-6, 2015

Brookhaven National Laboratory

www.bnl.gov/winp

Scientific Advisory Committee

Ed Blucher (Chicago), Bonnie Fleming (Yale), Alberto Guglielmi (INFN), Karsten Heeger (Yale), Steve Kettell (BNL), Josh Klein (U. Penn), Jonathan Link (Virginia Tech), David Lissauer (BNL), Joe Lykken (FNAL), Marzio Nessi (CERN), Gina Ramelka (FNAL), Kate Schoenberg (Duke), Mike Shaevitz (Columbia), Greg Sullivan (UMD), Bob Svoboda (UC Davis), Mark Thomson (Cambridge), Peter Wilson (FNAL)

Local Organizing Committee

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Topics

Sterile Neutrinos
Neutrino Mixing
Neutrino Interactions
Neutrino Properties
Precision SM Tests
Astrophysical Neutrinos
Research & Development

Contact Info: Donna Barci • Bus: +1 631 344-2287 • Fax: +1 631 344-4741 • Email: dbarci@bnl.gov



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DOE Process for Short-baseline Neutrinos

- The workshop gave us the opportunity to hear community ideas for near term (less than 5 year) small-scale experiments (total funding less than ~\$10M) that are:
 - Scientifically compelling
 - Competitive in the world program
 - Small enough in scope and technically ready
- WINP Workshop report detailed the science opportunities available that may be addressed by investments in such near term small-scale experiments
- Based on the WINP reports we are drafting a new funding opportunity announcement (FOA) for appropriate small-scale experiments later in FY2015, possible funding in FY2016
 - Specific objectives and requirements will be called out in the FOA



Other Elements of DOE Neutrino program

- There will be many good ideas that do not fit into the funding or schedule constraints discussed above and we are interested in those, as well
 - For example, there are also important issues to address in technology R&D for future experiments and theory support for the broad neutrino program
 - Reports from the working groups will be helpful in addressing these and other issues
- Possible funding for such efforts will be dealt with through the usual proposal process. There may be additional opportunities for partnerships or other collaborative funding.
 - E.g., DOE Nuclear Physics solicitation for Topical Collaborations in Nuclear Theory, including neutrino-nuclei interactions

Neutrino FOA Update

- **Now working on draft FOA**
 - Expect release in late May or early June
 - Letter of Intent will likely be requested to speed review process
 - Full proposals due in summer
 - Reviews early fall
- **Science focus on topics highlighted in WINP**
- **Emphasis on small-scale, near-term experiments that are “ready to go”**
 - Contributions to established programs (e.g. FNAL SBN) outside of scope
 - Usual P5 criteria apply
- **Expect awards to focus on experiment fabrication, installation, operations**
 - Technology R&D and neutrino theory other possible topics
 - **Additional guidance on critical R&D/theory milestones for LBN welcome**
 - Future FNAL-based SBN proposals ok