ICFA Neutrino Panel roadmap: aims and objectives

The terms of reference for the ICFA Neutrino Panel [1, 2] require the Panel to develop a roadmap for the accelerator-based neutrino-oscillation programme. The roadmap will document:

- The approved objectives and milestones of the experiments that are presently in operation or under construction;
- The approval, construction, and exploitation milestones of those experiments presently being considered for approval; and
- The proposed objectives and milestones of projects that are not yet formally being considered for funding.

The timeline on which non-accelerator-based neutrino experiments will provide relevant information will also be summarised.

Based on this information, the document will present the Panel's evaluation of:

- The evolution of the precision with which the critical parameters governing the neutrino are known. The precision will be evaluated for each experiment separately and in combination (where applicable);
- The timescale on which branch or decision points will arise based on the measurement of key parameters or the discovery of inconsistencies with the Standard Neutrino Model. Measurements made in astroparticle experiments will be considered alongside those made by experiments using terrestrial sources.

The branch or decision points will be used to derive:

- The desirable timeline for the programme of neutrino-nucleus cross section and hadro-production measurements that will be required for the integrated scientific output of the programme to be maximised;
- The R&D programme required to deliver:
  - The present and planned programme;
  - The accelerator and detector capability required to take the programme beyond the horizon of the next generation of experiments.
- The theory and phenomenology programme, including nuclear theory and phenomenology, required to ensure that maximum benefit is derived from the experimental programme.

The evaluation of the present, planned and proposed programme, together with the branch or decision points, will be used to derive a number of recommendations for the development of the global programme that, in the Panel's view, will optimise its scientific and technical impact.

The roadmap will be prepared in close consultation with the astroparticle physics community represented by the Astroparticle Physics International Committee (ApPIC) and the Astroparticle Physics European Consortium (ApPEC).

References

[1] The International Committee on Future Accelerators, "ICFA Neutrino Panel." `http://www.fnal.gov/directorate/icfa/neutrino_panel.html`, 2013.

[2] The International Committee on Future Accelerators, "ICFA Neutrino Panel: terms of reference." `http://www.fnal.gov/directorate/icfa/files/Terms-Of-Reference.pdf`, 2013.

[3] The ICFA Neutrino Panel, "ICFA Neutrino Panel." http://www.fnal.gov/directorate/icfa/.

A The ICFA Neutrino Panel

ICFA established the Neutrino Panel with the mandate [1]:

> *To promote international cooperation in the development of the accelerator-based neutrino-oscillation program and to promote international collaboration in the development a neutrino factory as a future intense source of neutrinos for particle physics experiments.*

The membership of the Panel agreed by ICFA at its meeting in February 2013 is shown in table 1. The terms of reference for the panel [2] may be found on the Panel's WWW site [3].

Table 1: Membership of the ICFA Neutrino Panel.

Name	**Institution**
J. Cao	IHEP/Beijing
A. de Gouvêa	Northwestern University
D. Duchesneau	CNRS/IN2P3
S. Geer	Fermi National Laboratory
R. Gomes	Federal University of Goias
S.B. Kim	Seoul National University
T. Kobayashi	KEK
K. Long (chair)	Imperial College London and STFC
M. Maltoni	Universidad Automata Madrid
M. Mezzetto	University of Padova
N. Mondal	Tata Institute for Fundamental Resarch
M. Shiozawa	Tokyo University
J. Sobczyk	Wroclaw University
H. A. Tanaka	University of British Columbia and IPP
M. Wascko	Imperial College London
G. Zeller	Fermi National Accelerator Laboratory