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# CPM#97 Report

*CPM NF Planning Session*

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# CPM #97 Science Topics

- Neutrinos as probe of standard physics
  - Neutrino-nucleon and nucleus interactions from low to high energies
  - SN neutrinos, BSM in SN
  - Standard oscillations
  - Neutrino experiments across energies
  - ...
- Neutrinos as probe of BSM physics
  - Sterile neutrinos as DM
  - Cosmogenic dark matter in neutrino detectors
  - Neutrino as signal of indirect detection of DM
  - Standard and BSM physics in atmospheric and astrophysical neutrinos
  - ...
- Neutrinos bring excitement to a very diverse group of scientists

# Requirements for progress

- Collaborative efforts across different expertise (e.g., HEP, NP, THEO, EXPT, Computer Science, Event generators, ...)
  - Development of reliable generators
  - Accurate measurements of neutrino-nuclear interactions
  - Theoretical calculations of cross sections at different energy scales (LQCD, HEP, NP)
    - Eg: Recent progress in effective field theories exposed several possible couplings of DM with matter
  - ...
- Understanding standard neutrino physics is a crucial prerequisite for using them as probes of BSM physics
- Need a well-coordinated effort to organize summary white papers and avoid duplicate efforts