# Cross-Section/Flux Sub-Group Update

**Cross-Sections & Fluxes Group**
Bonnie Fleming
Debbie Harris
Patrick Huber
Chris Polly
Sam Zeller (facilitator)

- have had two meetings so far (presentations and action-items are posted on our Indico page)

  https://indico.fnal.gov/categoryDisplay.py?categId=209

- plan to meet bi-weekly (weekly as needed)

# Questions

**(1) which cross sections and fluxes are important?**

- *produce an initial list of relevant energy ranges and cross sections (Patrick Huber)*
- *discussed an initial classification based on beam type ($\pi$ DIF, stopped $\pi$, $\mu$ DIF)*
- *coordinate with Options group (Bonnie Fleming)*

**(2) what is the status quo right now?**

- *produce an initial survey (Sam Zeller, Laura Fields)*

*(answers can depend on the exp'l measurement, energy range, nuclear target, etc.)*

**(3) how will this evolve in the future?**

- *MINER$\nu$A, MicroBooNE, T2K ND, NOvA ND, … ?*
- *sketch out rough plans for each and identify areas where need input (Debbie Harris)*

**(4) what could we do to improve the uncertainties that matter i.e., to ensure definitive SBL results?**

- *upgrades to MINER$\nu$A, LAr1, SciNOvA, VLENF, …, MIPP, SHINE, … ?*
- *or do we simply need to make sure we have a ND?*

# Upcoming Presentations

- explore the extent to which cross section and flux uncertainties have played a role in current experiments for various classes of measurement techniques ... and identify **lessons learned**

  - MiniBooNE (π DIF, single-detector example) (Chris Polly, part I was on Feb 13)
  - LSND (stopped π example) (Geoff Mills, part I was on Feb 13)
  - MINOS (two identical detector setup) (TBD)
  - T2K (two non-identical detector setup) (coordinate with Tensions & Options groups?)

- how well do we know $\nu_e$ cross sections? (Natalie Jachowicz, March 6)

- additional talk suggestions made by other task force members:

  - nucleon-nucleon correlations
  - MIPP