Discussion Points – 1

- What are the expected primary physics topics and the final state particles of interest?
  - DIS, PDF measurements
  - ν-N X-sec measurements
  - BSM physics discovery ➜ difference from present ν physics is the energy of the neutrinos
    - The detectors should be able to detect and ID the signal particles with much higher energies

Discussion Points – 2

- What are the anticipated background to these signal?
  - For P1, neutrinos from atm would be backgrounds ➔ utilize the direction reconstruction capability to mitigate
  - Beam induced background to neutrino beams due to losses due to electrons from the beam decay hitting the accelerator component, generating background to neutrino experiment
    - ~1/3 of the beam loss
    - Intrinsic nu-tau's could be produced ➔ becoming the tau neutrino backgrounds ➔ some papers on neutrino beams from the ILC dumps could be used to estimate what the anticipated impact of the electrons from the beam decays

Discussion Points – 3

- What are the detector and trigger capability requirements to accomplish the necessary physics goals?
    - Charm tagging for PDF
    - Muon, low E deposit, tau ID, NC and CC
    - LAr may not work since it may not be able to contain fully the particles from TeV neutrino interactions
    - Reconstruct the track and measure the energy precisely
    - High density, tracking calorimeter as the target, eg. Si-W calorimeter
    - Low density (gaseous?) detector for charge ID and full track reconstruction
    - Magnetic field for sign identification
    - Capability to reconstruction the direction of the incoming neutrino
    - Good vertex resolution in the radial direction to the beam

Discussion Points – 4

- What are potential detector R&D currently on going that can support the required detector capabilities?
    - Q-Pix for low density detectors
    - Expected event rate ~10^8/kg/yr ➔ detector technology should be able to handle this event rate
    - Make a slide of agreed beam parameters ➔ who

Discussion Points – 5

- If the current detector R&D efforts are insufficient, what are high priority technologies that need to be picked up and how do we test them before they are needed?