Recommendations Related to the Beamline Group

- Unless compelling evidence is presented that a 128 ns bunch spacing significantly enhances the physics reach, further discussion and R&D of a 128 ns option should be stopped, and efforts must be directed towards successfully implementing the 64 ns beam spacing for KLF.
- To understand the effect of the bleed-through beam, two distributions must be studied:
  a) the momentum distribution of the K_L beam from a single bunch with the imposed sum of 16 such distributions scaled by 1/1000 and spaced by 4 ns;
  b) the time distribution of K_L (red curve in the beam bunch plot) for one bunch in log scale with the imposed sum of 16 such distributions spaced by 4 ns.

- The trigger rate and occupancy in the detectors must be evaluated using a realistic profile of secondary beams from KPT at the GlueX. Interactions of neutrons and K_L particles with materials of the target cell and around the target must also be considered.
  - Input from this group will be necessary.
- Interactions of various particles (n, γ) with detector elements must be carefully evaluated. With the realistic profile of particles from KPT at GlueX, the rates in detectors and radiation on SiPMs must be evaluated.
  - Section III.D of the KPT document for ERR-1 covered the SiPM damage.
- With the use of the start counter in GlueX, the PID scheme follows the nominal GlueX approach that relies mainly on dE/dX for the central detector and timing for the forward detector. However, if the rates in the start counter prove a limitation and it must be removed, it is not clear how PID will proceed in the forward detector without requiring a track in the central. This should be considered and fully fleshed out.
  - Input from this group will be necessary.
- The physics simulations should be redone, including all backgrounds from neutrons and physics reactions.
  - Input from this group will be necessary.