Dark Photon Search via e+e- Annihilation:
Opportunities for potential collaborators
July 2015

(a) **How to calibrate the calorimeter in situ.**
-thinking, MC study, potentially detector design (eg beam
spectrometer, mechanical supports, etc)

(b) **How to veto or remove low energy charged particles**
(design scin veto wall: granularity needed? Sweeping magnet.)
- MC study & detector design

(c) **Data analysis algorithms**
event selection, bump hunt methodology,..

(d) **MC Studies & development**
GEANT. Performance studies: characterization, optimization

(e) **Optimal CsI sensors:**
photodiodes? phototubes? SiPMs? APDs, vendors, etc ...?
share existing devices.. ..
- experimental work: maximize S/N, or S/(N*$)

(f) **Backend electronics, DAQ, etc.**
How to handle high rates, do online suppression, etc.
electronics; FPGA coding; online/offline computing; ,..

(g) **Early beam studies with crystals**
Determine CsI quality/characteristics and establish some
initial calibrations of a small fraction of the CsI.
- experimental work; travel to accelerators; infrastructure

(h) **Magnet design and fabrication**
for synchrotron and external beamline
- suitable for an accelerator lab

(i) **Participation in synchrotron studies**
- suitable for grad student interested in accel physics

In all cases participation in the form of thinking, proposing
ideas, discussing, etc is valuable