Plan for Public Beamline Upgrade

SUMMARY

① **HAXPES instruments at both BL47XU and BL09XU will be rearranged in BL09XU (BL09XU is converted to a beamline dedicated to HAXPES applications):**

⇒ Installation of dedicated x-ray optical components in the optics hutch, enabling reliable and stable generation of x-ray beam optimized for advanced HAXPES experiments (i.e., energy resolution, energy range, polarization, beam size, photon flux).

⇒ Efficient switching between HAXPES instruments that are arranged in tandem.

⇒ X-ray imaging instruments at BL47XU are not altered.

② **Nuclear Resonance Scattering (NRS) instruments at BL09XU will be moved to BL35XU. (NRS shares beamtimes with Inelastic X-ray Scattering (IXS)):**

⇒ Installation of dedicated x-ray optical components in the optics hutch, enabling improvement of efficiency in changing HRMs and application of focused beam to a number of nuclear species

⇒ Permanent installation of upgraded NRS instruments in experimental hutches 1&2, enabling high-throughput, advanced NRS experiments

⇒ IXS instrument at BL35XU is not altered

③ **Multilayer monochromator will be installed at BL20B2 as an optional high-throughput monochromator:**

⇒ Substantial increase in photon flux for x-ray imaging experiments.

SCHEDULE