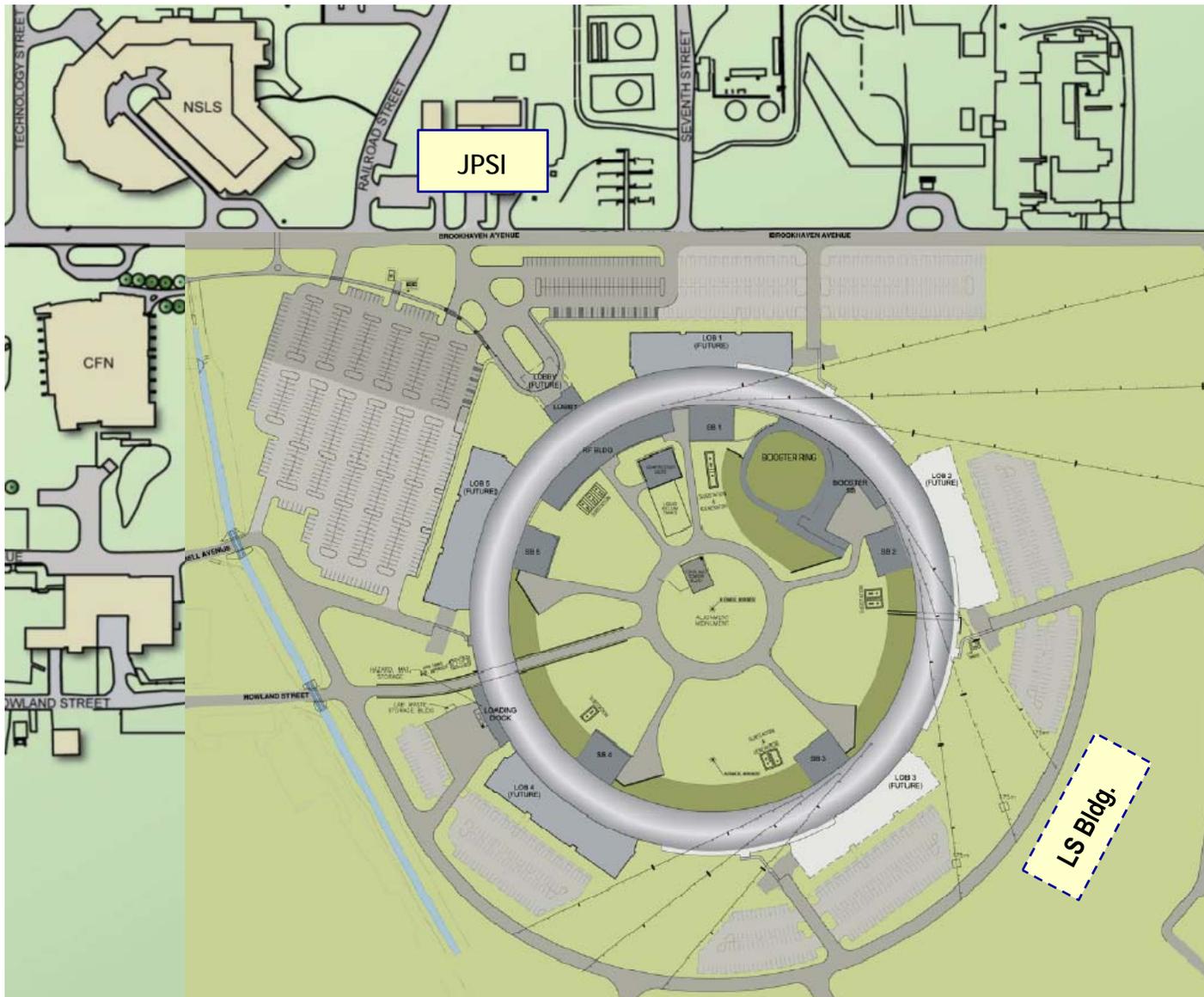


Introduction and Welcome



Qun Shen
Experimental Facilities Division
NSLS-II
XBPM Workshop
February 26, 2009

NSLS-II: Optimized 3rd Generation SR

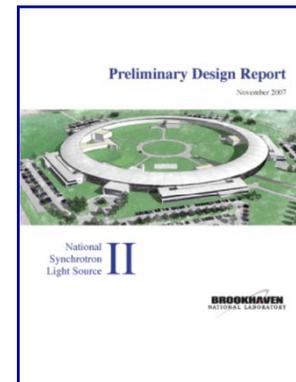
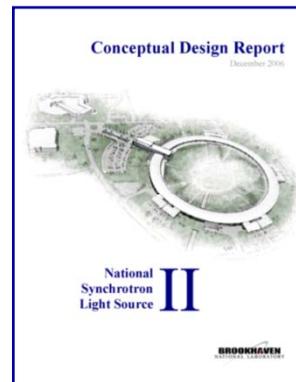
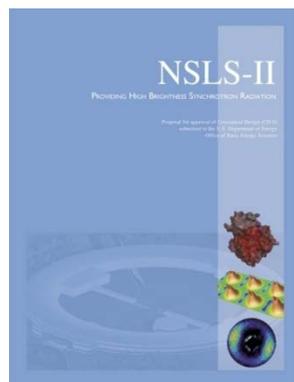


Design Features:

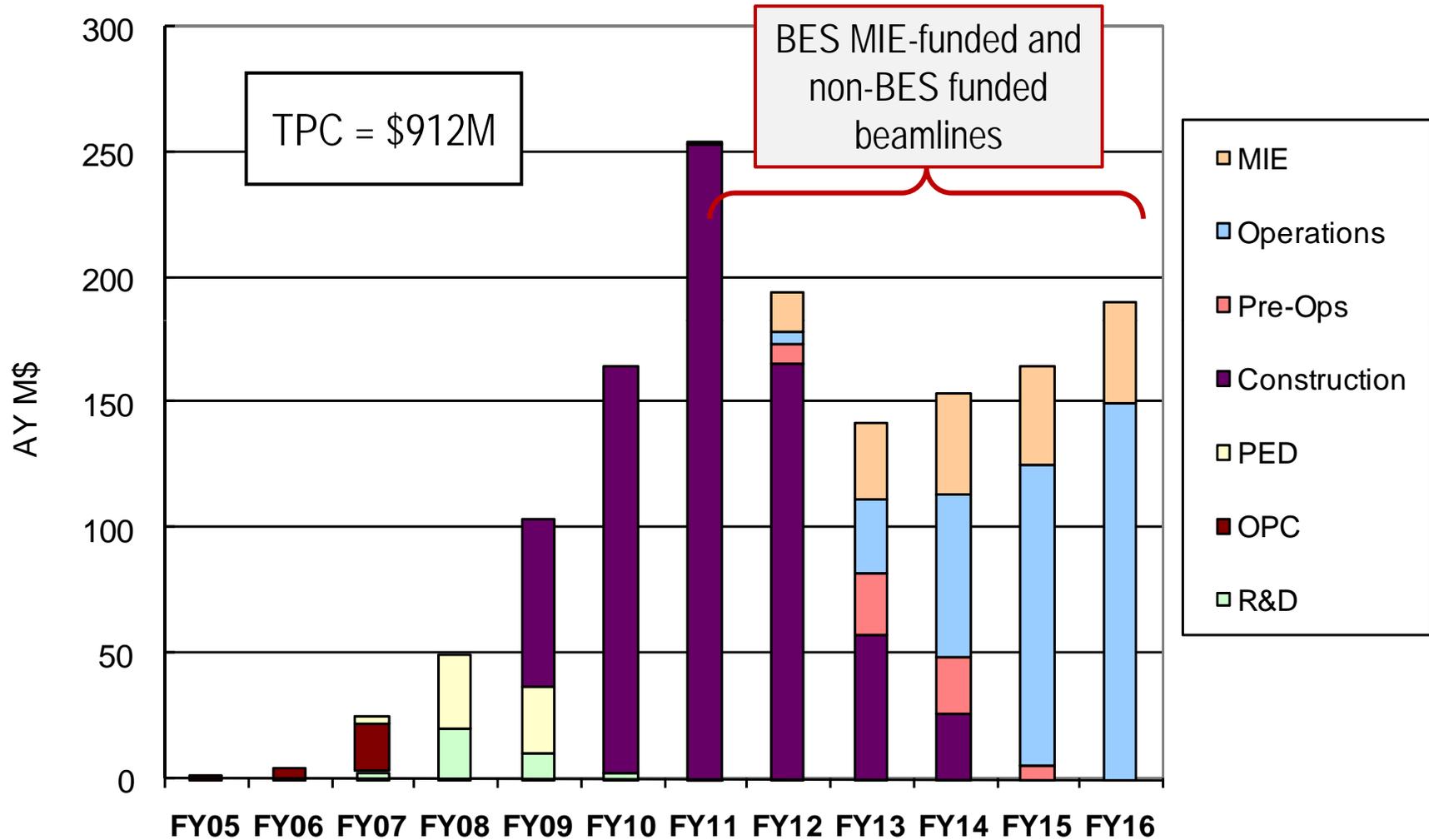
- 3 GeV, 500 mA, Circumference 791 m
- Low emittance: $\epsilon_x, \epsilon_y = 0.6, 0.008$ nm-rad
- High brightness from soft to hard x-rays
- Diffraction limited in vertical to 12 keV
- Small beam size: $\sigma_y = 2.6$ μm , $\sigma_x = 28$ μm
- Pulse length (rms) ~15 psec
- Lab & office bldg.
- Long beamlines

NSLS-II Key Milestones

Aug 2005	CD-0, Approve Mission Need _____	(Complete)
Jul 2007	CD-1, Approve Alternative Selection and Cost Range _____	(Complete)
Jan 2008	CD-2, Approve Performance Baseline _____	(Complete)
Dec 2008	CD-3, Approve Start of Construction _____	(Complete)
Feb 2009	Contract Award for Ring Building _____	(Complete)
Aug 2009	Contract Award for Storage Ring Magnets	
Mar 2010	Contract Award for Booster System	
Feb 2011	1 st Pentant of Ring Building Ready for Accelerator Installation	
Feb 2012	Beneficial Occupancy of Experimental Floor	
Oct 2013	Start Accelerator Commissioning	
Jun 2014	Early Project Completion; 1 st Beam to Beamlines soon afterwards	
Jun 2015	CD-4, Approve Start of Operations	



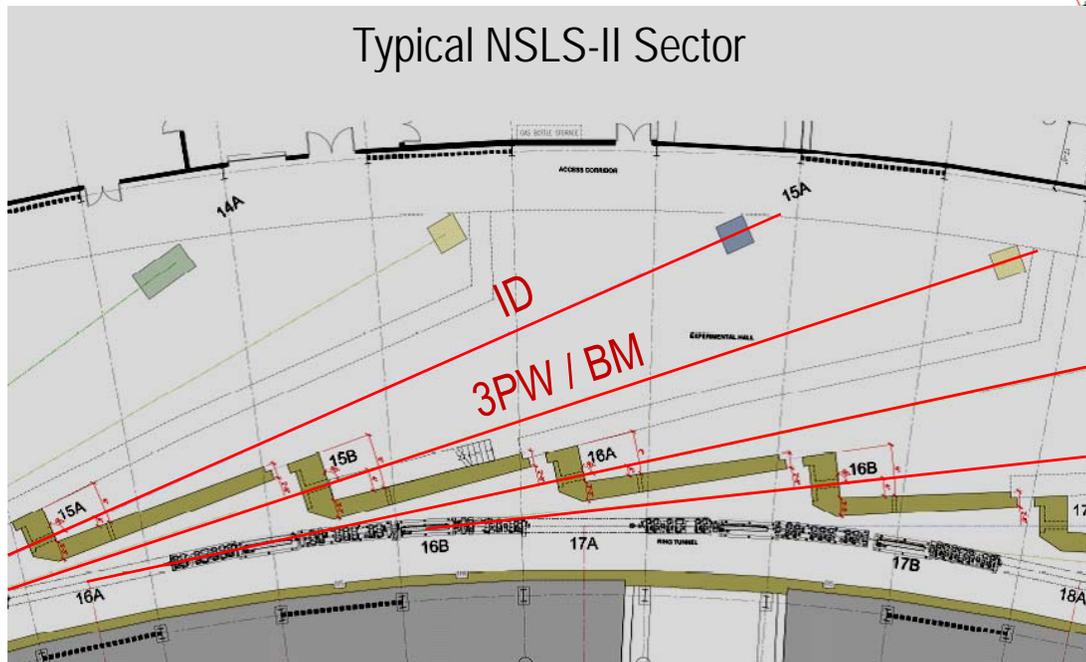
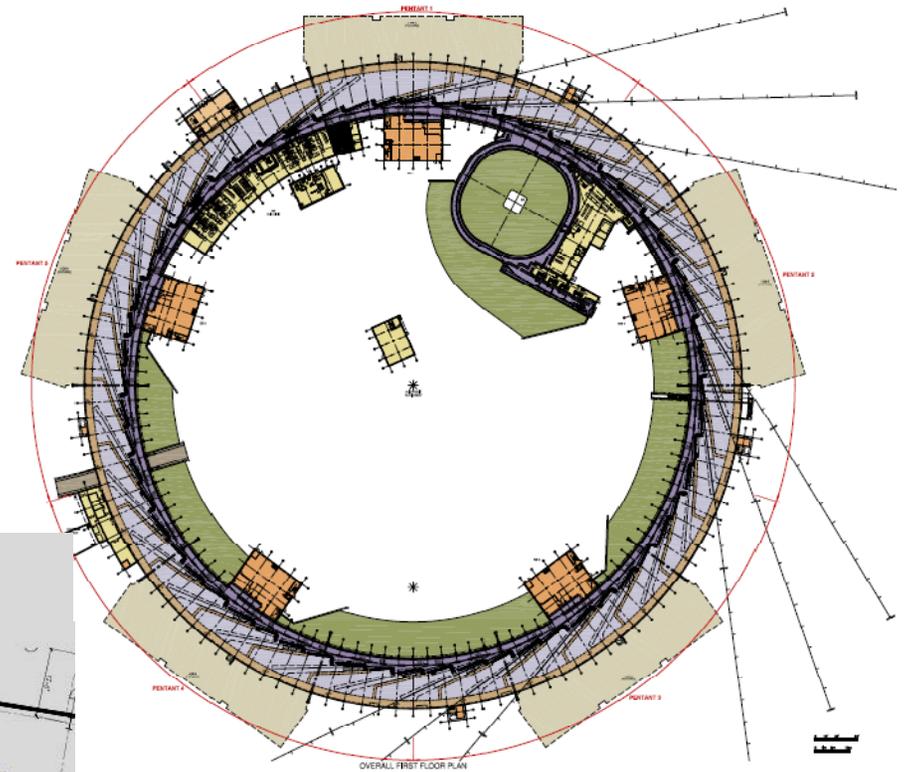
Funding Profile with Operations & MIE



Note: Operations & MIE funding are not part of TPC

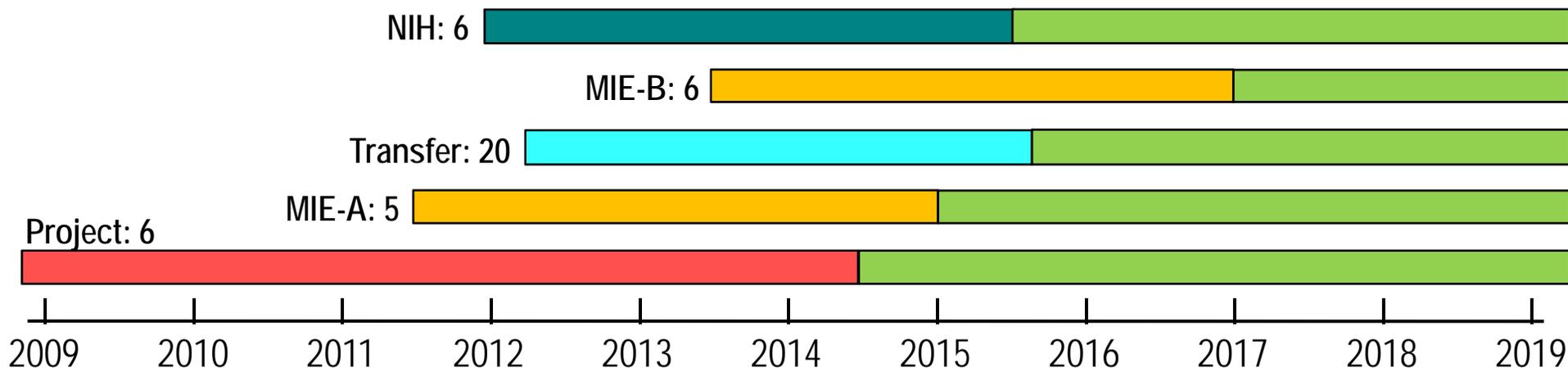
NSLS-II Beamline Capacity

- 27 straight sections
- 31 BM/3PW ports
- at least 58 beamlines
- plus canted ID's

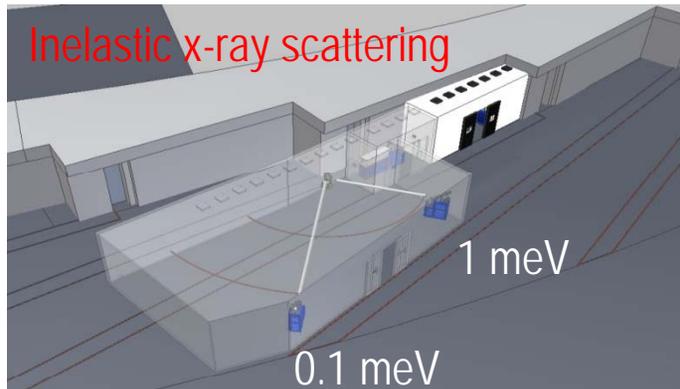


NSLS-II Beamline Build-out Timeline

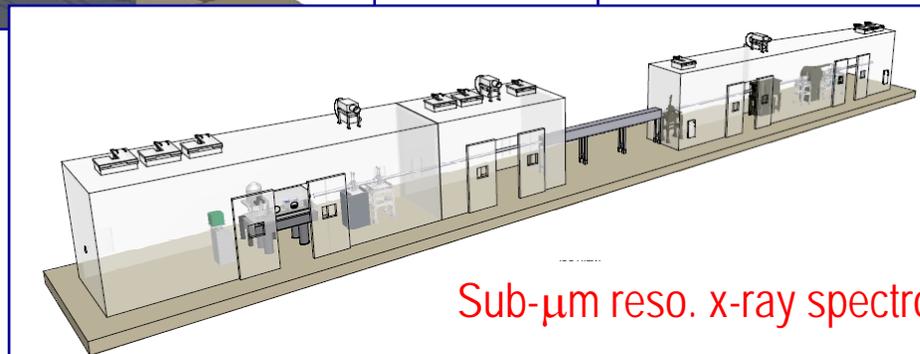
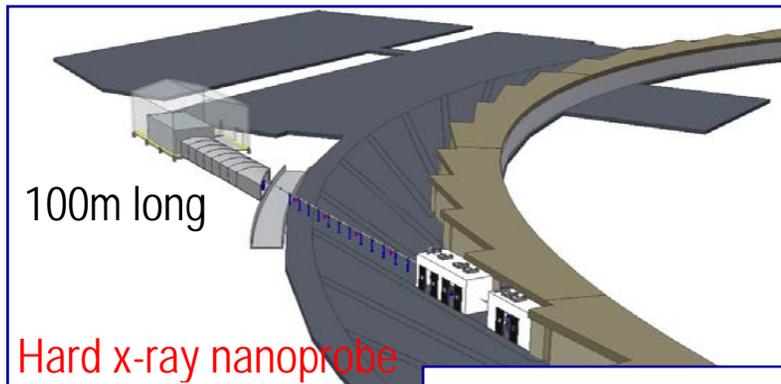
FUNDING	BEAMLINES
BES – Project	6 insertion device beamlines in base project scope
BES – Early Operations	~ 20 bending magnet beamlines transferred from NSLS to NSLS-II, using NSLS-II early operations funding
BES – MIE	~ 16 insertion device beamlines
Non-BES	Life Science beamlines and other non-BES missions



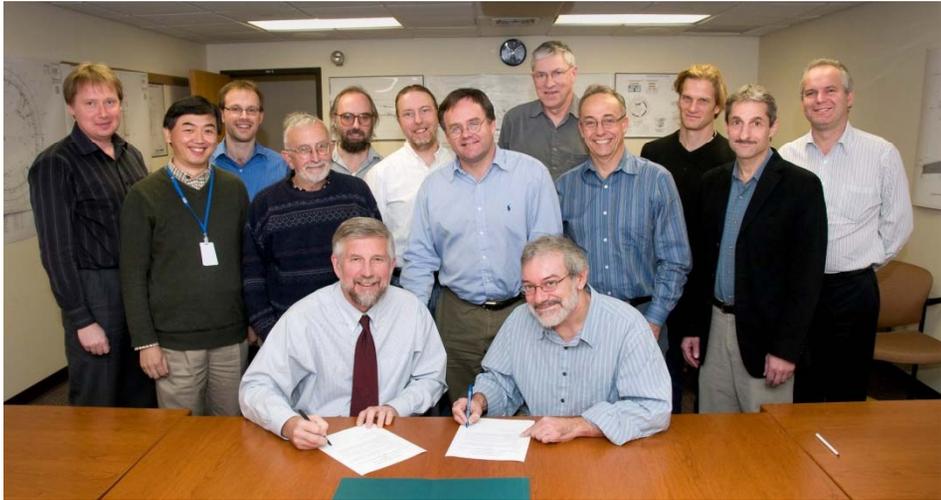
Six Project Beamlines at NSLS-II



- Inelastic x-ray scattering
- Hard x-ray nanoprobe
- Coherent hard x-ray scattering
- Soft x-ray scattering/polarization
- X-ray powder diffraction
- Sub- μm resolution x-ray spectroscopy



First BAT Meetings for SRX, XPD, IXS, CHX



SRX BAT Meeting, October 30, 2008



IXS BAT Meeting, December 5, 2008



CHX BAT Meeting, December 9, 2008



XPD BAT Meeting, November 24, 2008

Welcome to This Workshop

- We face many challenges in beam stability and position monitoring at NSLS-II
- We look forward to hearing your experience at the existing facilities on current XBPMs and developments for potential future advances
- We would like to hear your advice, criticism, and suggestions on our XBPM plans at NSLS-II, e.g. about alternative choices and what you think we should be doing
- We may identify areas for potential collaborations

Welcome, and Look forward to fruitful discussions!