Advanced Photon Source
An Office of Science National User Facility

Advanced Light Source
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National Synchrotron Light Source II
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Stanford Synchrotron Radiation Lightsource
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Linac Coherent Light Source
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5-Way Meeting DOE-BES Light Sources

October 5, 2016
SLAC-SSRL

1st Annual (?) 5-way Meeting

Goal:

To increase communication, interaction, coordination and collaboration across the DOE-BES Light Sources

Objectives:

1) Map out existing beamline suite and begin to develop a coherent plan across the complex, taking into account APS-U “dark and dim” period
2) Discuss the future of CAMERA and begin to formulate a path forward for it, and related activities. Appoint WG to chart this course
3) Beamline value engineering: Identify areas for potential efficiencies in construction and lifetime costs. Determine path forward for quantifying and realizing those efficiencies
4) R+D: Obtain a snapshot of the high level R+D priorities across the facilities. Identify possible synergies
5) Obtain a picture of the partnership models across the complex
6) Decide if this meeting should be repeated and with what format

Agenda

08:30 am	Introduction *Plan of the day, context, goals and expected outcomes*	Hill (BNL)
08:45 am	Beamline capabilities roadmap *a) Survey of current capabilities and projection of capabilities in ca. 2021* *b) Identification of critical missing capabilities during APS-U* *c) Discussion of mitigation strategies*	 E. Johnson (BNL) D. Mills (ANL) All
10:45 am	BREAK	

	Parallel Session Room 322	**Parallel Session** Room 226
11:00 am	CAMERA and future data analysis initiatives: 11:00 – 11:25am *a) CAMERA: Current Status and Future Plans,* Jamie Sethian (LBNL) 11:25 – 12:00pm *a) Discussion:* ALL	Beamline value engineering-Part I: *E. Johnson, lead* *a) Goals* *b) Format and schedule* *c) Identification of issues to target* *Participants:* o Nicholas Kelez (SLAC) o Tom Rabedeau (SLAC) o Alastair MacDowell (LBNL) o Jonathan Lang (ANL)
12:00 pm	LUNCH User meeting	

Agenda

01:00 pm	R&D Requirements as driven by next generation beamlines: *a) Detectors* *b) Insertion devices* *c) Optics* *d) Software and computing* *e) Accelerator* *f) Other*		ALL Zhirong Huang (SLAC) Diling Zhu (SLAC) Ken Goldberg (LBNL) Patricia Fernandez (ANL) Paul Zschack (BNL)
03:00 pm	BREAK		
	Parallel Session Room 322	**Parallel Session** Room 226	
03:30 pm	Partnership models: *All* *a) Survey of current models at the facilities* *Participants:* o Piero Pianetta (SLAC) o Steven Kevan (ALS) o Denny Mills (ANL) o Qun Shen (BNL)	Beamline value engineering-Part II: *E. Johnson, lead* *a) Goals* *b) Format and schedule* *c) Identification of issues to target* *Participants:* o Nicholas Kelez (SLAC) o Tom Rabedeau (SLAC) o Alastair MacDowell (LBNL) o Jonathan Lang (ANL)	
04:30 pm	Wrap up *a) Value engineering report back* *b) Summary of action items and owners:* *1) Beamline planning* *2) Data Analysis Discussion* *3) R&D activities* *4) Partnership Models* *c) Discussion on meeting, format and agenda* *d) Set tentative date for next one*		Hill (BNL)
05:30 pm	Adjourn		

R&D Grand Vision

With the sources approaching the diffraction limit (NSLS-II, APS-U, LCLS-II, ALS-U), future gains can only come from the beamline side: optics and detectors

Proposal:

The facilities unite behind a $100 M MIE on Next-Generation Optics and Detectors ("N-GOD" *).

This would projectize the top 5 R&D activities (say) and deliver in 5 years:

1) 1 micron, 100 kHz soft x-ray CCD
2) 1 micron, 100 kHz hard x-ray CCD
3) 10 nrad rms curved mirrors
4) 5 nm focal spot hard x-ray optics
5) 5 nm focal spot soft x-ray optics

* Other names are available