

Partnership Models at NSLS-II

Qun Shen (NSLS-II, BNL)

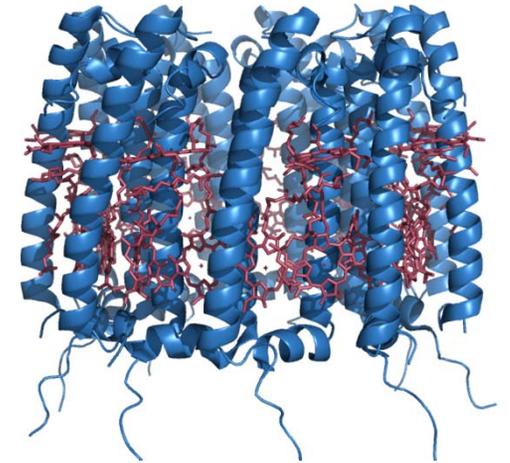
5-Way Meeting at SLAC

October 5, 2016

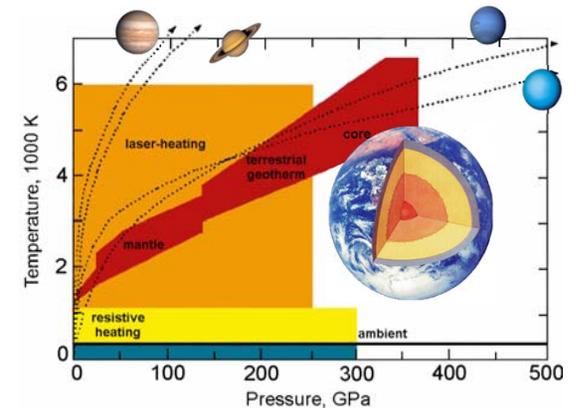


Two Principal Partnership Models for User Programs

- Direct Sponsorship by Non-BES Agencies
 - Funds directly transferred/awarded to NSLS-II
 - NSLS-II hires staff and manages entire program to meet the needs of the agency and the community
 - Very straightforward relationship management
 - Only NIH/BER for structural biology so far



- ➔ Indirect Sponsorship through Third Parties
 - Typically through partner user (PU) approach
 - PU contributes instrumentation/staff to support user programs in sponsor's interest
 - Leverage broader expertise in the community
 - Requires effort to manage these partnership



NSLS-II Scientific Access

– General & Partner Users

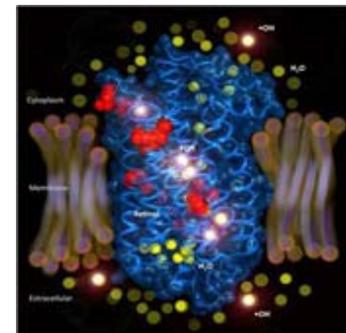
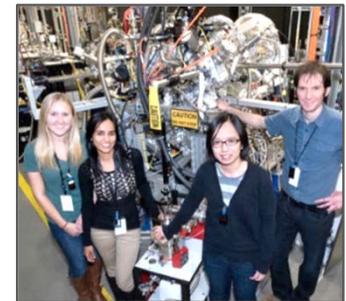
- Three modes of scientific user access:
 - General User (GU) access (min. 50%)
 - Partner User (PU) access (up to 40%)
 - Beamline staff access (up to 10%)
- General User (GU) Proposal
 - Valid for up to 1 years
 - May request multi-cycle status
 - Include remote, mail-in, rapid access
- Partner User (PU) Proposal
 - Must indicate PU contributions to enhance capabilities and operations
 - Up to 40% of the available user beam time can be allocated to partner users
 - Valid for up to 3 years (up to 5 years in special cases)
- Examples of PU Contributions:
 - contributing a sophisticated endstation
 - contributing staff & equipment to provide user support for a given program
 - construction and/or operation of a complete beamline

Proposal Evaluation Criteria:

- Scientific / technical innovation and originality
- Scientific, technical, industrial importance
- Education and/or outreach importance
- Capability of proposal group and quality of past performance based on track record (publications, patents, ...)
- Experimental plan/technical feasibility

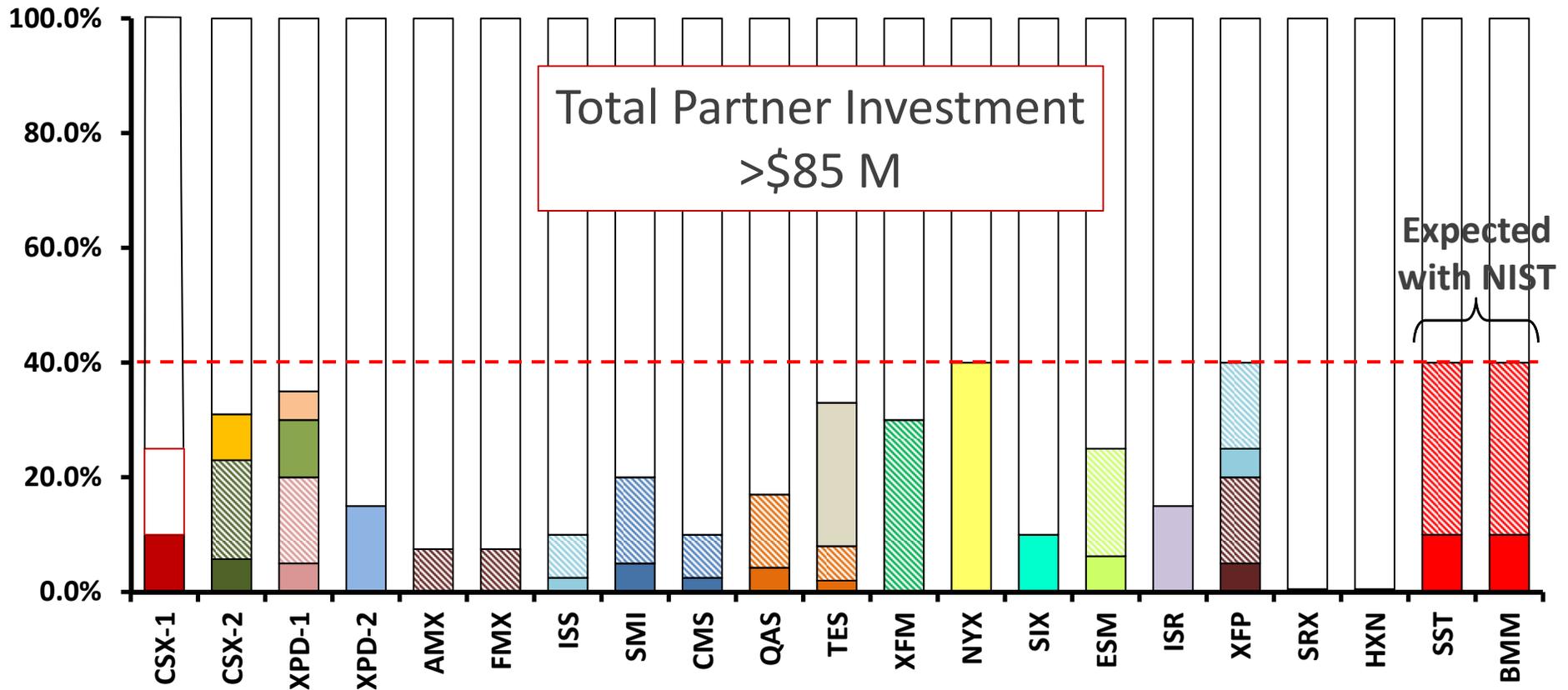
Four Typical Types of Partner Users

- Developers – Individual research groups that develop and contribute cutting-edge instrumentation and methodology that enhance NSLS-II capabilities
 - PU to commission instrument, perform experiments to show capabilities, & develop community
- Community Consortium – Representing community to provide specialized expertise and ancillary equipment at beamline in order to promote the science of their interest
 - PU beamtime through NSLS-II PASS, but dedicated to specific science
- Other User Facilities – other User Facilities such as CFN
 - essentially the same as the above, but prefer to use their own peer review GU systems for control of certain portion of the PU beam time
- Partner Beamline Group – groups in a specific segment of the community who construct *and* operate one or more complete beamlines at NSLS-II
 - typically receive max. beam time as defined in *NSLS-II User Access Policy*
 - PUA valid for 5 years (all other types for up to 3 years)



Partner User Beam Time Allocation (in 2018-1)

- Percentages of beam time in Run 18-1 allocated to 18 partner user groups at 22 beamlines (with different solid colors indicating different approved PUPs)
- Hashed fill indicates beam time proposals reviewed through NSLS-II GU system

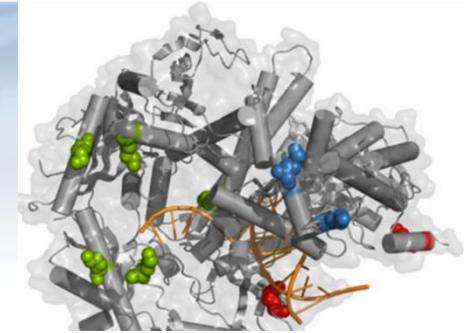


Partnership Issues & Ongoing Discussions

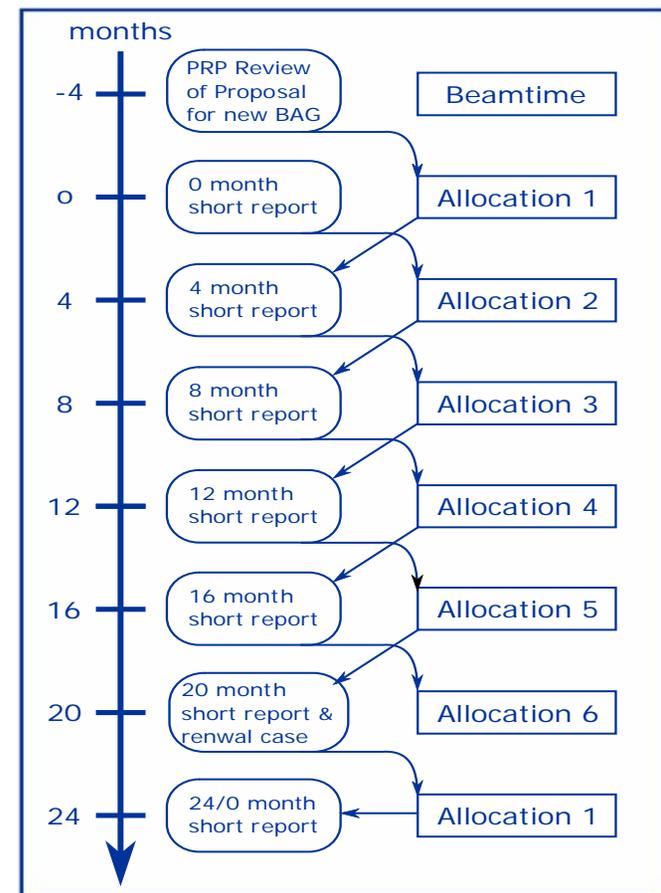
- Partnership with Large Science Teams
 - PU model limits partnership to groups with funding/expertise to contribute
 - No good mechanism to allow large science teams (e.g. EFRC) to receive guaranteed beamtime for the duration of their grant
 - “Project” or “Program” proposals possible – but most users have some sort of funding in place, thus what would qualify as a “Program”?
- Partner FTE Commitment
 - PU not able to provide user support we expected
- Partnership with BES Core Programs
 - PU willing to contribute but not in line with directions from program managers
- Multi-Facility Partnerships
 - Joint SANS/SAXS program with ORNL; Discussion with NSUF on nuclear materials
- Block Access Groups (BAGs)
 - Group of PI’s to self-organize for streamlined GU access at high-throughput BLs

Block Allocation Groups (BAGs)

– Pilot program starting now for Structural Biology



- Open to large groups or groups from *different* establishments along a similar scientific theme who want to make more efficient use of the beamtime.
- Combining the beamtime of individual groups permits greater flexibility in the choice of projects and samples during a given allocation period.
- The scheme offers the benefit of access to more regular aliquots of beamtime.
- Each BAG should submit only **one application every two years** and is reviewed on performance over this timeframe.
- BAG submits one (short) report each cycle along with a request for the next – reviewed by PRP.
- A **Lead Principle Investigator** acts as contact between NSLS-II & the BAG.



Summary



- NSLS-II partner user program is an important and significant part of user operations
- It plays a critical role in leveraging expertise & diversified funding to bring in capabilities and capacities in NSLS-II operations
- It requires significant effort to work with partners to achieve mutual benefits
- Currently working on additional partnership and user access approaches to enhance the scientific programs at NSLS-II

NSLS-II PUP Review Process

- Beamline feasibility by beamline staff
 - Technical feasibility
 - Interactions with staff
 - Comments on any potential issues
- Scientific and technical merit by PRP
 - Science & technical merit
 - User community & impact
 - Justification of beamtime request
- NSLS-II management review and decision
 - Programmatic compatibility
 - Strategic directions
 - Overall equality across facility
- NSLS-II SAC endorsement
 - Impact on overall user program
 - National & global context
- Beamtime award by final PUA

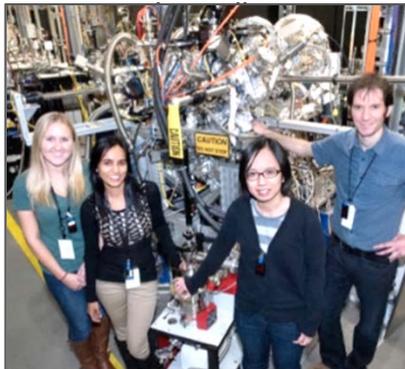
Examples of User Consortium Partnerships at NSLS-II

- Synchrotron Catalysis Consortium (SCC)
- COMPRES – high-pressure consortium
- Center for Functional Nanomaterials (CFN)

Center for Functional Nanomaterials (CFN) provide staff to develop and support four nanoscience programs at NSLS-II

- CFN scientists are contributing to planning, design, and transition to operations of several NSLS-II beamlines

AP-PES at CSX-2



AC-LEEM/XPEEM at



SAXS/WAXS at CMS



SAXS/WAXS at SMI



Key Points in Consortium PU Beam Time

- Peer-Review: PUP itself is peer reviewed by the same PRP subpanel that reviews the GUPs. PUP must be highly rated in order to receive approval from NSLS-II management
- PU Beam Time: PUP receives X% of available beam time in recognition of their contributions and their science/development
- Typical beam allocation will allocate vast majority of available beam time through NSLS-II GUPs, as follows:
 - NSLS-II allocates (100-X)% beam time to highest rated GUPs in all sciences
 - PU group allocates majority (typically 75%) of the X% beam time to those highest rated GUPs in the science area of PU interest, either before or after the NSLS-II selection, as specified in the PU agreement
 - PU group reserves a small fraction (typically 25%) of the X% beam time as PU discretion time for their staff and those GUPs that did not score well, for the purposes as stated in their PUP (e.g. outreach to new users, instrument dev., ...)

Joint User Access for SAXS & SANS

- We are working on establishing a pilot program for joint beamtime access between BioSANS (HFIR ORNL) and LiX (NSLS-II BNL)
 - Small-angle X-ray scattering (SAXS) and small-angle neutron scattering (SANS) are two complementary probes based on the same scattering principle
 - Overarching goal is to provide our users with convenient access to both photons and neutrons through one peer-reviewed proposal
- Joint access mechanism:
 - An MOU will be set up between ORNL and NSLS-II to set aside up to 6 shifts of beam time on LiX per cycle for SAXS/SANS users (similar to 1-page MOU with SSRL for MX)
 - Interested users will submit a proposal to ORNL or NSLS-II requesting both techniques
 - Lead instrument/beamline scientists will do feasibility reviews to ensure the proposals are good for the joint program
 - Feasible proposals will be reviewed by a joint peer-review panel, following the rapid access review procedure here at NSLS-II
 - Beamtime allocation at NSLS-II will be through Rapid Access
- Rolling out this access mechanism in current 2016-3 cycle