

## NIH NSLS-II Beamlines Project Quarterly Report – 3Q FY11

**DATE: submitted on 17 August 2011**

### 1. Project Schedule

Conceptual Design Review	Planned: 1Q FY12	Actual:
Preliminary Design Review, Baseline	Planned: 4Q FY12	Actual:
Final Design Review, Approve Construction	Planned: 2Q FY14	Actual:
Project Completion	Planned: 1Q FY16	Actual:

#### Short term (3-month) schedule

- CDR document, associated cost range, schedule, and other required project documents
  - Final draft
  - Distribution to Internal Review committee
- Internal Conceptual Design Review
- External Conceptual Design Review

Planned: Aug 31	Actual:
Planned: Sep	Actual:
Planned: Sep	Actual:
Planned: Nov	Actual:

### 2. Technical Objectives: 3 beamlines ready for commissioning with X-ray beam

#### Planned NIH beamlines

FMX – Frontier Macromolecular Crystallography at an Undulator Beamline  
 AMX – Flexible Access Macromolecular Crystallography at an Undulator Beamline  
 LIX – A High-brightness X-ray Scattering Instrument for Biological Applications

### 3. Assumed Funding Profile

(\$M)	FY10	FY11	FY12	FY13	Total
IDs/FEs	12.0	0.0	0.0	0.0	12.0
Beamlines	0.0	10.0	15.0	8.0	33.0
Total	12.0	10.0	15.0	8.0	45.0

### 4. Progress:

- Assignment of interim project manager (Steve Hulbert) and beamline leaders (Bob Sweet (FMX), Dieter Schneider (AMX), and Lin Yang (LIX)) completed in May 2011. MoUs to cover project effort by Sweet and Schneider were initiated.
- Weekly NIH beamline project meetings have been held since May 2011.
- Construction of these 3 beamlines will be managed as a “project” by adopting good management practices and established management tools used for successful DOE project such as NSLS-II. Activities based on this approach are:
  - Initial WBS structure established June 2011
  - Project controls staff assigned June 2011
  - First pass M&S and labor estimates entered in Cost Estimate Database, June 2011
  - Project Management Plan will be formulated which will describe the organizational framework, overall management systems including roles and responsibilities of the participants, and overall scope, cost, and schedule
  - Once baseline scope is approved, cost and schedule performances will be tracked and reported each month
- Key parameters for the undulator insertion devices, optimized to serve the scientific programs to be undertaken at the FMX, AMX, and LIX beamlines, have been formulated:

Beamline	ID straight type	ID type, incl. period (mm)	Length	$K_{\max}$	FE type	# of ID's	# FE's
FMX	lo- $\beta$	IVU21	1.5m	1.79	canted	1	1
AMX	lo- $\beta$	IVU21	1.5m	1.79	canted	1	0 (joint w/FMX)
LIX	hi- $\beta$	IVU23	3.0m	1.6-2.07*	canted**	1	1

\* Depending on location within ID straight section

\*\* Off-center canting magnet location in ID straight section

- Progress made on conceptual design of all three beamlines, including optical design, thermal modeling, and layout on the experimental floor
- Input from external advisors has been obtained via electronic meetings and phone calls

## 5. Issues and Risks:

- Until permanent project scientific staff are hired, some of the effort for conceptual design and preparation of cost and schedule estimates will come from existing resources in the Photon Sciences Directorate and this might incur some negative impact on performance of NSLS operations in FY11.
- In order to support preliminary design efforts in FY12, a significant ramp up of qualified manpower for the NIH beamlines project is needed within the next 6 months.

## 6. Action Items:

- In addition to the NIH beamline project Conceptual Design Report, drafts of project documents such as the Project Management Plan and Risk Management Plan are needed by Sep.
- Ad hoc beamline advisory committees, likely one for FMX/AMX and one for LIX, need to be formed and their first meetings held by Sep.
- The NIH project is in the process of opening new positions which are currently filled by interim appointments, with a goal of filling these key positions with permanent personnel by 2Q FY12.
- Two engineering positions need to be opened as soon as possible, one for FMX/AMX and one for LIX.