

Minutes of the Partner User Council Executive Committee Meeting August 17, 2011

Attendees: W. Anderson, M. Beno, K. Brister, B. Bunker, M. Capel, J. Chrzas, B. Fischetti, T. Irving, D. Keane, L. Keefe, D. Mancini, D. Mills, B. Ruzicka, G. Shen, B. Stephenson, S. Strasser, C. Vanni, J. Viccaro, S. Wasserman, and L. Young

Welcome—*T. Irving*

Irving outlined the agenda for the meeting, stating that the APS Upgrade road-mapping process needs input from the Partner User Council (PUC) and asked PUC members to be thinking about best strategies and be ready to discuss them during the executive session.

APS Update—*B. Stephenson*

Stephenson noted this is an interesting time for the APS with respect to the Upgrade process. He reviewed four current Science Highlights (lithium-rich compound and use in batteries, brain iron and Alzheimer's, how plutonium is transferred into cells, and high-resolution powder XRD with robotic handling). Jochimiak mentioned a recent article about G-protein complex that is new and important work coming out of the APS—it has been recently added as a Science Highlight. It was noted that R. Fenner and M. Howard do an excellent job of getting science results published. A new hire is planned to add additional support for this process. Getting the message out about scientific results to the non-scientific public and politicians is critically important to the future of the APS. Fischetti noted that in the past important work that didn't have an ANL name on it wasn't a priority for publicity at the Lab. However, this is changing, especially since Isaacs took over the Argonne directorship. It was noted that it is important to ensure that the CAT, the APS, and Argonne all receive proper credit. This credit is important for the CATs so that they can use the material to solicit funding and support for their infrastructure.

The five-year electrical equipment inspections program is nearing completion (Sept. 2011). Please let APS know if your CAT has any other equipment that needs to be inspected.

Safety: There is a much higher level of awareness on safety at Argonne. Because of a recent increase in the number of incidents, Argonne received an e-mail from Bill Brinkman (Director DOE-SC) on this topic (a very unusual event). Argonne and APS safety statistics were not as good in FY2011 as they were in FY2010. Consequently, the APS needs to refocus attention on safety. Recent incidents mostly involve Lab staff, but some involve users. Because experiments are well-defined processes, they tend to not result in accidents. Most accidents are "routine daily work" types of events (e.g., dewar crush injury, mild shock incident while replacing switches, fatigue resulting in a fall). The important lesson to impart is that people need to be aware of the "safety envelope" surrounding all of the work being done. Housekeeping and use of space for storage will become more important as the experiment floor becomes more full with staff and equipment. Mancini noted that most incidents were associated with a recent change in staff, use of area/materials, etc. This is important to recognize; the changes that will be associated with the Upgrade will be widespread. There is no "silver bullet" to fix this issue beyond universally raising awareness of safety. Everyone is encouraged to engage staff to communicate about safety issues relevant to their work. Please let the APS know what steps the user groups take to address safety issues. Groups are required to discuss safety-related actions and report documentation to Tom Barkalow (APS ESH/QA Coordinator). If other ideas and options are out there, please let the APS know.

Cyber Security: Recent hacking events involving PNNL and JLab resulted in these laboratories getting pulled “off the grid.” The vector for these attacks has been e-mails with dangerous links embedded. Isaacs sent out a message about cyber safety guidelines.

National School on Neutron and X-ray Scattering School—This annual school continues to be very popular and oversubscribed. The program receives support from DOE.

Recent user and staff awards were reviewed, along with new staff roles for former APS personnel (Connie Markiewicz replacing Sue Marconi, who left APS for the Office of the Chief Financial Officer, and John Quintana now the new Deputy Chief Operating Officer for ANL).

Budget: In July, encouraging budget news for FY2011 was received (\$9M above FY2010). The House mark-up of the FY2012 budget showed the Office of Science down -0.9% from FY2011 and BES up +0.6% from FY2011. The Upgrade project is on track for \$20M in FY2012. Given the current austerity in the federal budget, this is not a bad start. Continued advocacy is needed to support the Office of Science and user facilities. The FY2013 budget is now being scrutinized. Stephenson reviewed current plans for the projected budget and staffing planning. There are currently almost equal numbers of CAT and APS beamlines (most of CAT beamlines are bioscience related). This shift impacts the staffing levels for XSD, AES, etc.

The recent University of Chicago review was held July 27-29, 2011. The triennial DOE review is set for September 12-15, 2011, and will include a combination of plenary talks, posters, and breakout session talks with staff. Users have been invited to give science highlight talks.

Upgrade: The overarching science themes were reviewed (real materials under real conditions in real time, imaging hierarchical structures, etc.). The Upgrade will result in more than a dozen new or upgraded beamlines. On the accelerator side, the focus includes insertion devices that will be optimized for brightness at high energies, long straight sections, superconducting RF cavities, and higher electron current and beam stability. The plan is to perform the Upgrade without long shutdown periods. Funding began in 2010, and the total cost is estimated to be \$388M. Planning is ongoing. Our high energies and flexible lattice give the APS a unique ability to do work that other synchrotrons cannot. The focus is to improve stability and maintain emittance while making all the improvements. For unique or non-standard run conditions, special operating modes can be used to enable experiments. New technology capabilities that will result from the Upgrade: superconducting undulators for high-energy x-rays (the Upgrade will push the horizons of this technology) and superconducting RF for picosecond pulses. User involvement in the Upgrade has been healthy—the APS wants to continue this level of participation from the user community.

Stephenson did a quick review of slides from recent U of C review regarding the integration of the APS upgrade with APS Operations. The intent is to continue to provide reliable, predictable operations at 5000-hour level. He reviewed a list of the tasks planned for inside the shield wall related to the Upgrade process and showed a sample shutdown planning tool used for maintenance work. In the spring 2011 shutdown, the APS demonstrated the ability to remove and reinstall a complete front end. He also reviewed other draft schedules and planning tools for challenging maintenance period work. The objective is to have the least possible impact on user programs. The planning process for the Upgrade is managed by a software program that tracks a myriad of details. This planning will be set out in CD-2 and can be communicated to the users to give them advance notice so they can coordinate their work with the Upgrade work. Potential method(s) of communication for project issues are being examined.

Stephenson reviewed another set of slides looking at APS strengths and outlining a strategy for development. Part of the Upgrade is to make sure we stay competitive with other synchrotrons. High brightness at high flux and high energies, fast pulses, high repetition rate and flexible bunch structure, a wide array of beamlines, and a large/diverse community are the strengths of the APS. The Upgrade is a leading component of the APS 2020 strategy. The issue of parking was raised—this topic will likely be an ongoing subject. Distributed parking is a prime concern and is being addressed. A list of anticipated new and upgraded beamlines was reviewed along with contingency-type projects that are important but will require some outside funding. Canted undulators would offer the potential to double beam time.

An Office of Biological and Environmental Research (BER) Workshop “Applications of New DOE National User Facilities in Biology” was held in May—the APS pulled together a blue ribbon panel to outline the scientific needs of the biology community and how they map onto the new and upgraded facilities. Stephenson reviewed the topics presented to the workshop committee. The summary from the workshop presentations: “Make connection from proteins to organisms.”

Other topics briefly reviewed included:

- Collaboration with Washington State for an NNSA-supported dynamic compression sector beamline organized by Y. Gupta (WSU) to study materials in real time under extreme conditions of pressure (e.g. shock waves).
- Continue improvements planned for accelerator performance and investment in preventative maintenance and upgrade of systems to retire accumulated obsolescence.
- Expanding office and lab space (ANL site modernization).

APS Upgrade: Remaining Steps to CD-2 and Process/Timeline to Beamline Roadmap—

D. Mancini

Preliminary Design Schedule and Roadmap Planning: Mancini reviewed important dates for APS Upgrade project and noted that we are currently awaiting Bill Brinkman’s (Director, DOE Office of Science) signature for CD-1, which was approved on Aug. 3. A CD-2 review by DOE is set for August 2012—all documents for this review must be sent in early, so we have less than 1 year to prepare all materials. CD-2 approval would be given in October 2012. Mancini then reviewed the timeline of upcoming tasks through 2012 (cost schedules, design reports, reviews and the work process flow for the generation of the beamline roadmap from CD-1 through CD-2. The group discussed the concept of primary stakeholders and reviewed the lines of communications and feedback processes that will be required. The roadmap established for the CDR is probably 80% accurate, but reevaluation of the plans is ongoing. Everyone is encouraged to read the roadmap section of the CDR. A request was made for a packet of info that is pulled from the CDR for a quick overview. However, Mancini indicated that this info can’t be fully summarized as of yet. But the information will be provided in advance of any meetings. Please ask for specific information and it will be provided.

NUFO Update—S. Strasser

Meg Vigliocco-Hagen is retiring September 1, 2011. Beverly Knott will assume responsibilities for the GUP and service will not change. The User Office will provide opportunities to communicate well wishes to Meg.

Strasser reviewed the highlights from the 2011 NUFO annual meeting, first presenting the following highlights of the 2011-12 outreach agenda:

- Second User Facilities Exhibition will include one day each in the House and the Senate. Invitations for this event have been received from Congress, but no date is set yet.

- Second National Science Festival and Expo in Washington DC – set for April 27-29, 2012.
- Outreach to colleagues at scientific society meetings (e.g., AAAS, APS, ACS, ACA, MRS, GeoUnion)

Strasser noted that it is important for all users and staff to work on their “elevator” talks to reach out to the community at large to ensure that the message about science is positive at the community level.

NUFO is looking at forming working groups: (1) working with industry/tech transfer; (2) administrative issues including user agreements, user portals, metrics (what to collect and how), and sharing best practices (e.g., the APS scheduling process may be shared with another lab); (3) cybersecurity; and (4) NUFO and universities. High-level university staff needs to hear from users about how their important, published work is both used by and reflects positively on the universities. Such scientific advances could not be achieved without facilities like the APS (and this is a great value to universities as BES facilities do not charge access fees for nonproprietary use). The group discussed travel subsidies (commonly given in Europe) and how they serve as a way of conferring to universities that access has been granted. Travel cost is more a factor for second-tier universities. The subject of travel expenditure seems to be a “lightning rod” for bad press, especially during economically challenging times.

Strasser also presented the roster of newly elected NUFO steering committee members.

The Laboratory security division currently maintains the control for changing card key/prox card programming to grant access to CAT labs/offices for CAT staff and users. No timeframe has been established for transferring this control to the CATs. Fischetti will send Stephenson a note about the difficulties that arise from CATs not being able to manage or control their own building/laboratory access. This is a security issue as labs are being left open to circumnavigate the problem—it is a safety issue. Strasser will follow up and notify the beamlines when access control can be transferred. *(Note: the Lab DSX system will be fully centralized by the end of December. Access control can then be decentralized. The User Office will be working with individual beamlines to prepare for this transfer during the January shutdown.)*

Electrical safety awareness training: As of October 1, non-resident users will no longer be required to take Argonne’s ESH377 awareness course for electrical safety training. Users can only do certain tasks—pertinent electrical safety info will be folded into ESH100U, Argonne National Laboratory User Facility Orientation. This change will be announced in September issue of User News.

The Guest House will accept Saturday delivery shipments—however, they need to know whether or not the person is a current or upcoming registered guest (arriving within two to four days), and if not, they need to know in advance who is intended to receive the shipment. Strasser will contact Carmie White to find out if the Guest House could maintain a standing list of standard “approved” receivers. The User Office needs to send out a message to correct the misconception that the Guest House will not accept shipments on Saturdays. *(Note: The Guest House now maintains a list of “approved” receivers. To have names placed on this list, contact Carmie White, Argonne Guest House Manager.)*

Discussion of PUC Involvement in APS Roadmapping: The group spoke with Mancini about participation in this process.

Executive Session:

--Selection of New PUC Chair

Mark Rivers is a potential candidate for Chair. No other potential candidates brought forward.

Vote: All in favor, none opposed.

--Reorganization of PUC?

Is this necessary? There is a need to bring the stakeholders group into the fold to foster communication regarding the Upgrade. The PUC needs to have a representative in this process. It is hard to go through the process of reviewing scenarios if everything needs to be approved before going "public." There are ways to provide data without the full-on public approval route. Once things are on paper, they are often subject to multiple interpretations and often take on a life of their own. More information sharing needs to be taking place. Mancini says that at this point in the game, all possibilities are still potentially in play. This is when the "rumor mill" tends to be at its worst. Right now it's a due diligence process to make sure all options have been evaluated and then be able to communicate the decision with an explanation of why. Are the XSD stakeholders currently more involved in the evaluation process than the beamline-level staff (kind of an inside-outside comparison)? Accelerator staff has been going around the ring talking to beamline staff to talk about topics related to Upgrade changes and their impact (a kind of "meet the accelerator scientists"). This machine has tremendous flexibility thanks to the high energy of the machine and the team of scientists that are able to model the machine so thoroughly. These capabilities are playing into the decisions that are being made about Upgrade plans.

New operational modes were discussed—it was mentioned that sometimes these modes can really "mess up" other experiments. This is an example of the kind of information that needs to be shared throughout the user community. Would it be useful to collect from the user community what their deliverable is? What do they need and expect? These requirements will be different two or five years from now as the science pushes the envelope. The physics requirements for each beamline could be used to evaluate the impact of changes made to the machine. The APS can share what some of these early physics requirements documents look like to enable use of this tool.

Action Items:

- Get additional information about the plans to address parking issues as the Upgrade project proceeds (*APS management*).
- Send Stephenson a note about the difficulties that arise from CATs not being able to manage or control their own building/laboratory access (*Bob Fischetti*).
- Contact Carmie White to find out if the Guest House could maintain a standing list of standard "approved" receivers (*Strasser; Done, see above*).
- Need to send out a message to correct the misconception that the Guest House will not accept shipments on Saturdays (*User Office; Done-- an e-mail was sent to resident users on August 23 regarding weekend deliveries at the Guest House*).