

## **Minutes of the FNAL UEC Meeting, 4 December 2009**

**Attending:** Todd Adams (video), Marj Corcoran (video), Heather Gerberich, Karen Gibson (phone), Mike Hildreth, Ashutosh Kotwal, Sarah Lockwitz (GSA), Ron Moore, Heather Ray, Mayly Sanchez, Dave Schmitz, Kenneth Smith (GSA), Jon Urheim, Mika Vesterinen (GSA).

**Visitors:** Roger Dixon, Bridget Glynn (phone), Young-Kee Kim, Amanda Petersen

### **Agenda:**

- 1) Discussion with Deputy Director Young-Kee Kim
- 2) Accelerator Division Status & Future Plans – Roger Dixon (AD Head)
- 3) View from Washington – Bridget Glynn (Lewis-Burke Associates, via phone)
- 4) News items & subcommittee reports

### **1) Discussion with Deputy Director Young-Kee Kim**

Young-Kee ran through the highlights from the past month(s):

- a) NOvA CD-3b approval, and reduction of construction time by 6 months (or possibly more) thanks in part to ARRA ("Stimulus Package"). A partial detector will be ready for data-taking in 2012.
- b) MicroBooNE has CD-0 (October) and is working toward CD-1. A Directors Review to prepare for CD-1 was held in November. The timescale for completion of detector construction is 2012.
- c) The Mu2e Experiment received CD-0 approval in November.
- d) The LBNE (Long Baseline Neutrino Experiment) mission need has been approved by Bill Brinkman (Director of Office of Science), and due to the large scale, CD-0 requires DOE Deputy Secretary's approval.
- e) The Tevatron program is continuing.
- f) Planning for Project-X is continuing, with a recent workshop and improved conceptual designs.
- g) ARRA resources are being applied to the Superconducting RF effort, infrastructure (power and cooling) for computing, expansion of service buildings, and the Wilson Hall emergency generator in addition to accelerating NOvA construction.

In summary, Young-Kee indicated that with all the activity there was lots of stress, "but good stress".

UEC: We heard rumors about a possible "joint neutrino experiment control room", possibly in time for NOvA?

YKK: Yes, there have been discussions. Architects have been involved. Ideas included an area in the vicinity of 1 North, a portion of the 2<sup>nd</sup> floor atrium, 3<sup>rd</sup> floor library, or possibly part of

the 15<sup>th</sup> floor. The 2<sup>nd</sup> and 3<sup>rd</sup> floor possibilities appear not to be viable. Possibilities on the 1<sup>st</sup> floor are attractive in part due to proximity of the LHC/CMS remote operations center – having an “intensity frontier control-room” nearby the “energy frontier” one would make a nice impact with visitors. Actually, this is all being considered within a “master planning” exercise being undertaken now for the entire Fermilab campus. A task force led by YKK has been working for about a month so far and should complete this exercise in about a year.

UEC: Comments on the evolution of the Project X design?

YKK: There has been evolution in the conceptual design to maximize physics opportunities, with the development of IC-2 [(Initial Configuration 2), which replaces the 8-GeV SC linac of IC-1 with a 2.x-GeV CW SC linac, followed by a 2-8 GeV acceleration stage, either a rapidly cycling synchrotron or a pulsed SC linac]. Looking beyond (or as natural evolution of) Project X, R&D for the muon collider is continuing. Important to note that while the ILC effort continues (at the level of ~\$35M/year), its future will depend on results from LHC; should LHC point to new physics at energies beyond the ILC reach, CLIC (at CERN) and the muon collider (at FNAL) are the potentially promising alternatives -- these technologies are much less mature than ILC. In response to our feasibility study proposal (at an expected cost of ~\$90M over 5 years) about a year ago, DOE recently requested us to form a project team for the muon collider R&D (managed by Fermilab). The team is formed.

UEC: Comments on the recent PAC meeting?

YKK: Yes, but first talk about the recent HEPAP meeting and the report from PASAG (Particle Astrophysics Scientific Assessment Group) there. All of the high priorities identified by PASAG are well aligned with the Fermilab program in this area, including Dark Matter experiments CDMS (at 100 kg scale), COUPP and depleted-Argon based detectors; and Dark Energy experiments DES and future projects (*i.e.*, JDEM); Cosmic Ray experiment Pierre Auger; and CMB experiment QUIET.

Regarding the PAC meeting, it was a full agenda as many proposals were considered, including pre-Project-X muon  $g-2$  and rare kaon decay ( $K^+ \rightarrow p^+ \nu \nu$ ) experiments. These received strong endorsements from the PAC, accompanied by concerns that the current commitments of the lab leave little likelihood of the ability to support them. These experiments are in the 30-50 M\$ range each. The kaon experiment also requires use of the Tevatron as a stretcher. (The annual cost of operating the Tevatron is \$15M, although the cost to run it solely for this purpose may be less.) The PAC urged the lab to discuss the situation with the DOE, and laboratory management is doing that.

UEC: Comments on termination of the Tevatron collider program?

YKK: At present the target date is 9/30/2011. The luminosity goal is  $12 \text{ fb}^{-1}$  delivered ( $10 \text{ fb}^{-1}$  on tape), and we plan to end operations on the above date independent of whether the goal is met. Of course developments at the LHC could affect this, but impacts of changes in schedule on NOvA are significant, and should be considered seriously.

UEC: Which Project-X design is gaining traction? Also what about (re-) naming it?

YKK: Both concepts (Rapid Cycling Synchrotron & SC linac) are being considered. We plan to have another Project X workshop this summer/fall, aiming toward a conceptual design by fall to prepare for CD-0. Regarding the name, a long saga about its history and the large number of suggestions from physicists and NYTimes readers. Many people want it to remain as "Project X".

UEC: Is the lab taking on too many projects right now?

YKK: Not really since we need to prepare future projects now (before the end of the Tevatron). The state of the Tevatron program is key and a significant amount of the lab's resources goes toward the Tevatron program. In addition, we need to work on future projects. Thus, it is certainly true that regarding human resources, FY10 and FY11 needs are quite high. The situation will be better when the Tevatron is over. Regarding lab scientists, we expect that by 2013 the number of lab scientists working on intensity frontier projects will equal or greater than the number on energy frontier projects.

## **2) Accelerator Division Status & Future Plans – Roger Dixon (AD Head)**

Roger summarized the recent state of operations. For the first time in a while the luminosity being delivered by the collider is "below the red line". (He noted that the red line had been moved up following prior successes.) He attributed some of this to startup issues following the long 2009 shutdown (which involved a lot of Main Injector work for NOvA, as well as work on the Booster -- corrector magnet work that helps with beam quality). Some issues of reliability have also affected luminosity in November. One example is the replacement of one of the (two) ion source columns, which had undergone a major failure, and for which the only experts had to postpone their retirement to work on. But overall, it is expected that the luminosity will recover, and the Tevatron operations teams are committed and working very hard to make this happen.

Operations for neutrino experiments have been going well -- both the Booster beam and NuMI, but the Booster is running right up against operations limits and so prospects for improvements are limited. The goal for the number of people working on NOvA for the coming year is about 24 in AD, and the goal for LBNE is about 7 people from AD. LBNE has seven, and is considered high priority as the lab prepares for CD-1, so that number may increase.

## **3) View from Washington – Bridget Glynn (Lewis-Burke Associates)**

Bridget indicated that not much had changed since the last UEC meeting. Health care is still commanding much attention. Congress is working on the remaining appropriations bills, but now there is talk of an omnibus bill for the portions of the budget (including NSF and NIH) for which bills have not been passed. (We are fortunate that the energy and water bill, from which DOE is funded, has already been passed, as noted last month.) Complications, including aspects related to Guantanamo, may delay passage of the omnibus bill, and so an extended continuing resolution may ensue. The administration is currently also distracted by the Copenhagen Climate Talks. With regard to opportunities for making contact with Congress, Bridget noted that the focus on health care is likely to spill into 2010 as Sen. Reid appears to be pushing it into January. A short holiday break appears likely this year.

UEC: How is the government doing with getting ARRA funds out the door?

Bridget: Yes, it is doing well on this account.

*UEC*: What about optimal dates for our DC trip?

*Bridget*: Late February seems like a good time.

*UEC*: How is the FY2011 budget shaping up?

*Bridget*: The president's budget appears to be on track for coming out in early February as planned. The word is OMB is looking at programs that are "doing well" to understand how to better support them, and correspondingly looking at programs that are not doing well [that would be candidates for being cut]. Increases in science budgets across the board by around 3% are expected.

*UEC*: Any reaction to the LHC turn-on?

*Bridget*: Some press, but overall not much as the news is being overshadowed by all the other big issues mentioned above.

Some general discussion ensued including mention of the recent announcement from Japan about serious cuts in science funding there. KEK is potentially affected in a significant way and has asked for statements of support. [Following the meeting, Ashutosh proposed sending a letter of support from the FNAL UEC/Users Org.]

#### **4) News items and subcommittee reports**

##### **a) Non-U.S. Users**

Amanda Petersen (International Services Supervisor) joined us for this discussion. She and Heather G. spoke about developments on several fronts.

First, Heather reported having been contacted by a user who in turn had been contacted by an immigration attorney who had previously (as part of Tevatron U. in 2007) made presentations on immigration issues to members of the Fermilab community. This attorney was wondering if we were interested in a presentation focusing on recent changes to immigration procedures and policy. Mayly spoke to this user, who recalled that the previous presentation had been well attended. It generally seemed to the non-U.S. users subcommittee to be a good idea to invite him back. Amanda stated that the International Services Office is supportive of such a presentation, but has several requirements, since FNAL employees are also likely to attend. The first requirement is a set of guidelines as to what topics can be covered – in particular, any topic pertinent to self-sponsored petitions is okay; topics related to employer-sponsored petitions are not (since they are the domain of the Visa Office for FNAL employees). The second requirement is that a second attorney also be present, so that there is no appearance that Fermilab is in any way endorsing the services of a particular attorney. She will pass on suggestions for other attorneys to invite in this capacity [and has done so following the meeting].

Second, Amanda reinforced the point that the Visa Office is available to help users who are non-FNAL employees with visa forms. A lot of information is already posted on the Visa Office web site (<http://wdrs.fnal.gov/visas/visas.html>), with more being added to make it more complete.

Users can make appointments to speak with the International Services Group staff – a web-based appointment scheduler is in the works [should be running any day now]. Amanda noted that the Visa Office does sponsor J-1 and O-1 visas for users. She also told us she is planning to visit the various collaborations at upcoming meetings to give a 5-minute ad for the services offered by International Services and the Visa Office. Finally, she indicated that the Visa Office could also offer a seminar on relevant topics (other than permanent residency), and that we might want to run this in conjunction with this year's Users' Meeting.

UEC: Does the Visa Office help with visa applications for undergraduate students coming from abroad for summer work at the lab?

Amanda: Yes, but it is more complicated. For example, a mentor who is a lab employee must be identified and must meet weekly with the student. But typically the Visa Office sponsors about 100 J-1's per year of this type.

### **b) Government Relations**

Heather R. reported on preparations for the DC visit. The dates are now set, with congressional office visits to take place on Wednesday and Thursday, Feb 24 and 25. [In response to a question of why always Wednesday & Thursday, and not, say Tuesday, Bridget indicated after the meeting that members often are out on Tuesdays, given that votes are often delayed to the evening to give them more time to return from district work.] Typically, FRA funds travel for ~18 people. Young people (i.e., GSA) are especially encouraged to participate. Last year roughly 50 people attended, representing the FNAL Users Org, SLUO (SLAC Users Org), and USLUO (the US LHC Users Org).

Heather is soliciting input on the glossy PPIP (Particle Physics in Pictures) brochure that was put together last year. Work on the "1-pager" summary of HEP, its contributions to science and society and its (funding) requirements needs to get going promptly, since this will need iteration with SLUO and USLUO. Also work on Primary Assignments needs to get going. Heather indicated that a joint "training session" will be held before the trip, nominally on a Saturday following a UEC meeting.

### **c) Local Congressional Visits**

Dave made a brief presentation, reminding us of the history and intent behind the role of the UEC in coordinating/promoting local congressional visits from FNAL Users. In 2008, there were indications that NUFO would be filling this role on a broader scale. A list of Users who had either made visits to their local congressional office(s) in previous years and/or had indicated willingness to visit had been assembled by Heather R. and passed on to NUFO, but there was no follow-through from them. So Heather and other UEC members contacted individuals on the list to encourage them to coordinate their own visits, with limited success. Dave expressed his opinion that, in the absence of participation by some entity like NUFO, coordinating a broad grass-roots effort to facilitate local visits as has been imagined is beyond the ability of the UEC, with its high turnover rate and limited manpower. What the UEC can do is provide information, guidance and encouragement, and we should continue to do that.

### **d) Users' Meeting**

Mike reported that he and Ron are meeting next week with the Users Office and FNAL Procurement to set up the contract for the catering. He is also in contact with the Public Lecture Series Committee with regard to the Users' Meeting public lecture. Also, progress is being made on the VIP list and invitations to VIPs.

#### **e) Quality of Life**

Ron went through slides prepared by William (who was unable to attend) and Heather G. (who had to leave early). A meeting of the subcommittee was held with Bruce Chrisman on housing, cafeteria, Chez Leon and the Users Center, who confirmed that no immediate changes were planned in these areas. Some points of discussion:

- 1) UEC is willing to help with attracting greater usage for Chez Leon. Results from a survey that will run in Fermilab Today should help us understand how to help.
- 2) The cafeteria contract is up in less than a year and the UEC may wish to participate/help with the bidding process for the new contract.

The closing of the Batavia Rd. east entrance for several hours each night was discussed with Bruce. Details are being worked out to minimize impacts.

The QoL subcommittee met with Dianne Engram and Sandra Charles of the new Fermilink mentoring program, (<http://www.fnal.gov/pub/diversity/fermilink/index.html>) which is open to both employees and users. Initial focus is on retention and professional development in engineering and technical areas, where some mentors have already been identified. Young-Kee has called for mentors for scientific areas. The UEC (and GSA) should support this program.

The subcommittee met briefly with Amanda Petersen regarding her brown bag lunch program for new employees/users as well as other interested parties. These were well attended during summer, but less so recently. We should work with Amanda to help sustain this program. Evaluation of the Users Office web site (being undertaken by intern Kenichi Yoshida) was also discussed. One idea is to identify a few individuals to serve in focus groups to help with this effort.

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Minutes submitted by Ron Moore and Jon Urheim.

The next FNAL UEC meeting is scheduled for January 8, 2010.