

From: william@physics.utoronto.ca (William Trischuk)
Date: Thu, 30 Oct 2003 17:35:27 -0500 (EST)

Minutes of the UEC meeting -- October 25, 2003

Present: Bloom, Bose(GSA), Garcia, Gottschalk, Groer, Hagopian,
Hamilton(GSA),
Messier, Rolli, Sheldon, Tanaka, Trischuk, Tschirhart, White,
Zimmerman

Report from the HEPAP Meeting (Tschirhart, Sheldon):

September 28/29 in Washington (<http://doe-hep.hep.net/AgendaSep03.html>).

Highlights included the release and discussion of the P5 report, report on meeting of Staffin with funding agency counterparts on the world-wide linear collider effort and a presentation by Hertz (NASA) on their strategies for outreach to the general public and how we might adopt this to improve the HEP image.

Seiden gave P5 report (now available on HEPAP website). Witherell responded to the report. His slides can be found at:

http://www.fnal.gov/orgs/fermilab_users_org/docs_03_04/P5_report_response.pdf

Chain of speakers from CDF gave their reaction -- passionate remarks from junior faculty through more senior members of the collaboration. Blazey gave the D0 viewpoint with the theme: "Risks of this strategy". Cooper reacted to P5 recommending against the lab pursuing CKM. Tschirhart shared with the UEC some further analysis of the stated rationale that CKM not proceed. Suggestions for CKM cost reductions (that include improving civil construction cost estimates) thereby reducing the contingency necessary, have been transmitted from the CKM collaboration to the director. The PAC will be asked to comment on this in spring 2004.

The UEC reflected on the fact that no project has been approved for construction since MINOS in 1999. Despite the P5 endorsement of BTeV it has certainly not been approved by the DOE yet. BTeV made no formal comment on the P5 report at the HEPAP meeting.

Where does CKM go from here? If its costs and contingency can be significantly reduced should P5 be asked to reconsider it? It will probably end up being reviewed by a programme committee outside the auspices of the lab given that it has been through P5. A director's review of BTeV took place this week and a Lehman Review is expected in early 2004. Total cost was presented and the cost of the C0 insertion is now being considered in parallel with the BTeV project. HEPAP did comment on the fact that P5 ended up only considering FNAL

projects. Another potential candidate (RSVP/KOPIO at Brookhaven) side-stepped the process because it is to be funded by NSF-MRE money and thus is not in direct competition for HEP funds.

Roger Dixon -- Accelerator Improvement strategies

The theme of his presentation was the Beams Division strategy for FY04 and beyond. He has been focusing on improving the coherence among the different machines/divisions. Has created a new division that focuses on inter-machine issues. Last few months of running were more stable. As issues arose they were accompanied by explanations that helped keep the focus on systematic improvements to the luminosity. P-bar efficiency improved markedly during this period. We should be able to get 8×10^{31} without the Recycler, so far we have been able to get 4×10^{31} , or about half of the goal. Most of the discrepancy is in the p-bar production cycle rate. Projects completed during the shutdown and studies of slip-stacking of P-bars should help here. Using the recycler to store some of the P-bar stack is another way to help here. This won't happen until the next phase of the upgrade that will happen the following year.

In the future plan to integrate studies into HEP running with clearer goals. This should reduce the time it takes to return to HEP after studies not letting the machine stray too far from its operating point. In order to meet DOE luminosity goals some studies were sacrificed during the previous year. For FY04 the goals will now be partitioned into HEP luminosity and a tax on P-bars that will allow the recycler to be commissioned efficiently for long term improvements in instantaneous and integrated luminosity. Also implementing a more automated means to decide what to do when things go wrong. Use data on machine reliability and performance to inform the run coordinator on when best to take the next shot and the effect his/her decision is likely to have on integrated luminosity when when a store or a stack is lost prematurely.

Machine issues: Linac -- 7835 power amplifiers: made progress improving

the reliability of new deliveries with the sole vendor. BNL is learning how to rebuild similar amplifiers in house. FNAL is collaborating.

Booster -- beam losses and activation are limiting currents. Attempted correction during shutdown. Expect improvement due to this work.

Main Injector -- Dampers installed. Should improve injection properties of machine. Slip stacking studies prior to shutdown were promising and should be able to exploit this during the next year as we come back from shutdown. Have done some injection matching before the shutdown

to try to improve emittance
mis-matches between MI and
Tevatron. Also installed NUMI
extraction hardware.

cooling Pbar -- Made improvements to Debuncher and Accumulator
 systems to improve pbar stacking rate and
 improve efficiency of transfers to MI.

Recycler -- completing bakeout of complete ring.
Add more hardware to better
measure the vacuum in the machine.

Tevatron -- New helices will be commissioned.
Trying to reduce horizontal and vertical
coupling. Stands on 50 machine elements
have been replaced. Some evidence that

anchors

holding cold mass have broken in some

magnets.

TD is investigating one magnet that shows

these

symptoms.

Attacking all issues. Will result in a set of machines that
need to be re-understood ==> some commissioning period as we
come out of the shutdown.

Q: What can the users do to help? Could use intellectual
input into analysis of machine data -- shot-data analysis
could be made more sophisticated.

for Q: Can we further integrate the effect of experiment requests
 access into the simulation that predicts the impact various
 decisions will have on integrated luminosity? Maybe.

Slaughter has been working on shot-data analysis and has
integrated people from both experiments but this requires effort
and experimental collaborators tend to turn-over quickly.

Q: Can you use accelerator graduate students? Have some now but
could always use more.

Hugh Montgomery -- Long Range Planning Committee

Started about a year ago. For all the details have a look at:

http://www.fnal.gov/directorate/Longrange/Long_range_planning.html

Trying to "dispel the rumour" that the lab has no future beyond
the Tevatron (dates back even to the time of the SSC). Webpage
includes the draft charge and committee membership (2/3 lab
staff, 1/3 users). Didn't want to compete with HEPAP/P5 committees
on the national scale. Also wanted the FNAL community and the lab

staff to have an impact and ownership of this process.

Charge was to develop some credible scenarios for the future beyond Run II for consideration by the Director. The boundary conditions were that CMS will play a big role in the future of the lab and that a linear collider will happen somewhere. This last boundary condition creates two scenarios: a) LC near FNAL and b) LC not near FNAL. Based most of discussion on what the lab should look like in 2015.

Assembled a series of sub-committees that included members of the main committee, but also bringing in other people (both from inside and outside the lab). These included: Physics, LHC, LC, neutrino physics, proton driver, astro-particle physics, accelerator R&D, non-particle physics and resources. Members of the UEC noted that there appears to have been little consideration to what should/could be done with the Tevatron on the time scale of 2015. Q: To what extent has the lack of groundswell of proponents for a 'new' use of the Tevatron been due to the fact that many of these people are in the trenches and busy with CDF/D0/BTeV? The fact is there has been little feedback on this point up to now.

Q: What has the resource committee been doing? The UEC suggested that it might be helpful for the community to be given a primer in what the sources of funding and fiscal realities are.

Sub-committees have been meeting through the middle of the calendar year. Now moving to the end-game with a series of public sessions sponsored by each of the sub-groups. Presenting the thoughts that the groups have come up with so far. Seems to have been a successful exercise so far. Three of these sessions left to go.

Discussed the proton driver work a little bit more extensively to give an example of the kind of things that have been accomplished so far. The sub-groups are making proto-recommendations that will be discussed with the full committee towards the end of the year. Neutrino oscillations are compelling and will require a 1-2MW proton source that could build on the existing infrastructure. Two options would be to build a new booster or build an 8 GeV superconducting linear accelerator. To prepare for this, they suggest the preparation of a statement of mission that could be considered for CD-0 by the DOE. It was stressed this is the output of the proton driver subcommittee and needs ratification from the full committee and then the Director.

There was a discussion of the state of neutrino physics and how it will evolve including some exchanges about the role of reactor experiments and the current and evolving status of the neutrino initiatives at JPARC aimed at Super-K.

Current plan is to complete the open sessions, fold in a perspective of the resources that might be available on the time-scale of 2015. The big question emerging for the full committee seems to be: "How to map LC and neutrinos/proton-driver together over the next 10 years?" One possible synergy is a Superconducting RF (SCRf) proton driver that could be an important R&D step to proving the technology for a linear collider.

The next steps will be to produce a series of recommendations to the director. As part of an update for the lab community and the PAC there will be a Wine and Cheese seminar by H. Montgomery entitled "Status of the Long Range Plan" on December 12.

Bruce Chrisman and Roy Rubinstein -- Visa and Lab Security Issues

They asked for questions from the committee on these topics.

Q: How are H1-B visas being used -- are they appropriate for scientists at FNAL? They can be, but a salary must be paid by Fermilab that is appropriate for a scientist of that level. Also spouses and dependents can't work when a scientist is on such a visa.

Q: How do visitors get J1? Do they need to have an appointment at no-pay? What is the difference between that and being a volunteer? There was a period when being appointed as a lab employee with no salary was the way the lab preferred to sponsor people on J visas, but this is no longer necessary. The lab now sponsors users who do not receive a Fermilab salary for J visas without a Guest Scientist appointment.

Q: Have there been any major changes in the way the lab is dealing with visas in the last year? No major changes in the situation since last year. Machine readable passports for citizens of Visa Waiver countries was thought to be the next big hiccup, but this has been delayed for a year.

Q: Have visitor usage patterns changed since 9/11? Do we have statistics? Russians and Chinese are having significant visa delays -- also Middle-Eastern countries. European's and other nationalities have not changed much.

Have a clear view of how bad things were for Lepton-Photon. This was noticed and IUPAP is taking action. 750-800 attendees are 'normal'. At FNAL this summer there were about 650. Attendance was down in general, but more noticeably only about 10% of normal Russian and Chinese contingents were here.

Q: Could we compile statistics on usage patterns over the last 5-10 years to get more quantitative information? Older ID cards were valid for two years while current ones are for six or twelve months and Fermilab doesn't always have information on the number of visits within that period. Not clear whether this granularity would be informative.

Q: Some people have H1 visas from universities but are still not able to access the lab. What is the policy? Only nationals of the so-called "State sponsors of terrorism" (T7) countries fall into this category. If they were born in , are citizens of, or work at an institution of one of those countries, then they have to be considered by a board in Washington. Other "Sensitive Country" people can only get 6 month ID card but the Lab has the authority to issue their badge.

Q: How much success has the lab had arguing for access for scientists from sensitive and T7 nations? Four T7 nationals were grand-fathered and will have site access. 1/1 have been denied/granted. One person gave up. It is taking 6 months to clear these visitors. No indication that DOE can speed up the process.

Q: Process is uniform across all National Laboratories? Yes.

Q: Any difference with the weapons labs? They have been going through this process for much longer and thus are more used to it.

New draft order for Foreign Visits and Assignments is being considered in Washington. It may end up increasing the level of scrutiny to that of the higher levels of security now typical of Brookhaven and Argonne. No clear indication of when this will come out. The lab has raised its concerns. The directors had a joint-conference call with DOE to raise their concerns on this issue.

Roy and Bruce are happy to make themselves available to members of the user community to answer questions in this area of a general nature.

Report from Non-US issues committee (Groer)

Meeting at Brookhaven October 27/28 that will bring together representatives of users executive committees from several DOE research labs. The topics will include current experience with scientist's getting visas to do research in the US, access to lab sites once foreign scientists are in the country and possibilities of generating a new 'researcher' visa class. Trischuk and Groer will attend representing FNAL UEC.

This prompted us to conduct a follow-up survey of the visa and ID card experiences of foreign Fermilab users. This was started in early October. A preliminary report was made available to the UEC. It is still available at

http://www.fnal.gov/orgs/fermilab_users_org/visa_survey.html

We encourage people who have not yet responded to fill out the survey. A final report will be made more widely available.

Also approached spokespeople of experiments for cases they have had to deal with and the scientific impact on their experiments. Got detailed feedback from D0, some from CDF and less from the smaller experiments at the lab.

Have had preparatory discussions with Chrisman and Rubinstein where they give the impression that unless done delicately it is possible to make things worse. Fermilab has benefited from a 'level 3' security status while other labs require much more scrutiny of foreigners. This 'highest common denominator' approach has appeared at labs not under the auspices of the DOE.

Users Meeting planning (White)

- Subcommittee met October 23. Have chosen June 3/4,2004 (Thurs/Fri) as the dates for next years users meeting -- avoid as many conflicts as possible. Implies GSA conference should be on Wed 2nd of June. Four main themes have been chosen:

- 1) Current lab programme:
Including collider, neutrino, astro-particle physics
- 2) Fermilab's place in the International HEP community:
We hope to invite one or more lab directors from overseas to highlight how Fermilab fits into their programme (eg. CMS at CERN). Similarly it would be good to hear how FNAL can/is fitting into the world-wide linear collider effort.
- 3) The current funding climate:
Talks by funding agency representatives at last year's meeting were informative. We hope to build on that experience.
- 4) The long range plan and the search for a new director:
The outcome of the long range plan may still be topical. We hope a representative of the search committee for the lab director will be able to share with us the criteria they are using to find a replacement for Witherell.

Director's Search (Hagopian)

- Last search took 1.5 years. First step was to form the search committee. We are at the start of this process now. We should be pro-active and make suggestions for the search committee members.
- A representative from the UEC has been put forward.
- Can we ask the DOE what they think the role of directorate is? It is clear as projects grow, decisions on their suitability will have to be taken on an extra-lab basis. This reduces the role of the director. We should try to reconcile the views of DOE, URA and Fermilab users on what they all think the director's job is.

Discussions on Bicycles (White)

- Wanted to see if we could provide a fleet of bicycles for visitors who don't have access to cars. Following up a on users request. It seems most likely to succeed if we follow the car rental model through the users office. The model would be to contract with a local bike rental company and have bikes reserved through housing and available on site when the user shows up.

Outreach (White)

- Discussed traditional outreach roles with Bardeen and what the UEC might be able to do. The suggestions include participating in the development and vetting of outreach materials and/or publicising their availability of this material to our user community. Users who want to participate in outreach activities will be better aware of what FNAL has already got available.

Magazine Proposal (Groer)

- Why don't we have something like SLAC beamlines and CERN Courier

at Fermilab? FermiNews is changing. The publication frequency is dropping to save money and FermiToday webpages are being used to fill the gap. Members of the UEC have been told that FermiNews is aimed at people in Washington and market surveys show that the people in Washington are reading it. In that respect it succeeds. There has been a proposal on the back burner to put out a magazine aimed at the scientific/users community jointly between SLAC and FNAL. This would be one way of filling this breach.

Next meetings Nov 22 and Dec 13.