

Minutes of the 14 Sep 2007 UEC Meeting

Attending UEC reps:

Ela Barberis
Dan Hooper
Matthew Jones
Sacha Kopp
Ashutosh Kotwal
Greg Landsberg
Kevin Pitts (chair)
Chris Polly
Lee Sawyer
Jean Slaughter
Mitch Soderberg
Kirsten Tollefson
Peter Wittich

Attending GSA reps:

Jorge Benitez
Tyler Dorland
Rob Forrest
Emanuel Straus

Short Summary

Homer Neal gave a summary report on the findings of the University Grants Program Subpanel. Young-Kee Kim summarized the current status and fielded questions on the Steering Committee's roadmap for the accelerator- based HEP program. A question and answer session was held with Director Oddone. For the benefit of the newly-elected UEC members, a summary of the past year's activities was given. Kevin Pitts was elected to chair the UEC for the upcoming year.

Steering Committee Report--Young-Kee Kim

(UEC) What is the status of the report?

(YKK) The final draft of the steering committee's report is nearing completion. Attention has turned to details, i.e. more language added recently to balance emphasizing the complementary scope and uniqueness of Project X relative to the planned J-PARC program.

(UEC) What is the next step on the report?

(YKK) The next step is to present the study to P5 when they next meet here at Fermilab on September 24-25.

(UEC) Has there been any response from the international ILC community to the report?

(YKK) There have been some concerns that have been expressed by some of the ILC international community suggesting that the ILC effort should be treated more like the LHC/CERN paradigm, i.e. when the Tevatron turns off, focus solely on getting the ILC underway. YKK has three seminars arranged in the UK to explain the philosophy of the US program as envisioned by the steering committee. The US tends to be perceived as having an inevitable HEP budget when in reality that budget has to be justified every single year.

(UEC) What do CLIC and J-PARC colleagues think of the report?

(YKK) There has been a very responsive e-mail exchange with some of our colleagues at J-PARC to help understand/explain how the programs are complementary. Authors of the J-PARC PRD have been helpful in letting us use sensitivity figures with J-PARC upgrades and a half megaton detector. The FNAL program would run at a different energy, different beam parameter, and could utilize different detector technology. As a result, there are measurement possibilities unique to each program. As for CLIC, our CERN colleagues would be happy if FNAL were to get involved. However, due to our investment on a muon collider so far and tight resources, the Steering Group concluded that it makes more sense to stay on the muon collider effort.

(UEC) At what point will there be a call for full proposals to run an experiment with Project X?

(YKK) Well, the first thing we need to concentrate on is getting the community's opinion of the report translated back to the steering committee, the directorate, and advisory bodies (such as P5) of the funding agencies.

(UEC) Maybe it would make sense to start planning a workshop well in advance, i.e. next summer.?

(YKK) That could be useful. In the near-term we need to get feedback from the users. P5 will review whole report and ask questions over the next few weeks. It is likely there will be another P5 meeting early next year where their recommendations about the report will be discussed and presented to HEPAP.

Question and Answer Session with Director Oddone

(UEC) If the GDR is complete and one of the other international members says they are eager to host the ILC, then what happens to Project X?

(PO) That of course changes the landscape, however it is easier said than done. Any country willing to host will also probably have to commit to half of the cost. As an example, if the US program were able and willing to make that declaration in 2010, then Project X would be off the table. Right now, the key to Project X is convincing HEPAP and the community that there is sufficient interest in the physics. It is also a very useful machine in the context of the ILC R&D effort.

(UEC) What is the outlook on running the Tevatron longer?

(PO) The LHC is talking about first beam in middle of 2008. There is still a lot of work in establishing successful cold tests of all of the sectors. It makes sense for us to plan assuming that they have first significant luminosities in 2009. If you also factor in the time it takes to develop algorithms and an understanding of the detector, a 2010 Tevatron run is reasonable. Since

research groups need advance notice to plan the resources they will need, the decision on a 2010 run needs to be made soon.

(UEC) What would a 2010 Tevatron run mean for NOVA?

(PO) It would almost certainly delay the NOVA program by some months. Next year we will have a much better estimate of the time to LHC first physics.

(UEC) What is the FNAL budget to keep the Tevatron running another year?

(PO) The incremental cost is \$50-60M. Due to the time it takes to ramp down and decommission, the savings the first year are probably closer to \$25-30M.

(UEC) Would there be any provisions for upgrades to the detector?

(PO) No, the LHC timescale would have to be significantly delayed (years) to allow time for those kind of improvements.

(UEC) Do you see the manpower being available?

(PO) That is again somewhat tied to the timeline for first physics from the LHC. There will certainly be groups needing to provide thesis topics for students, whether that be Tevatron or LHC.

(UEC) What are the next stages in the decision process?

(PO) P5 is coming to FNAL on the 24th for some discussion. Their next meeting is in February. Technically the decision could wait until next fall, but budget and research group planning really need to know that by next summer.

Findings from the University Grants Program Subpanel--Homer Neal

The UGPS was established as a subpanel to HEPAP to survey and report on the health of university-based HEP programs. This is the first comprehensive study of the DOE/NSF support for universities that has been performed in several decades. Input from the community was gathered through several sources. A survey targeted to all PIs was established, along with a broader web-based, anonymous survey which garnered more than 1000 responses. In addition to holding 5 Town Halls with the community, meetings were held with the FNAL UEC, SLUO, DPF, agency officials, and EPP2010 members.

Some key findings: a partnership between universities and laboratories is required for a robust HEP program, much innovation arises from university groups, the university environment is vital to the technical strength of the nation, university researchers are often leaders in the field, and the funding for university groups has been in decline for more than a decade (inflation-adjusted).

Some recommendations: the university programs need to be strengthened to meet the goals of the field as articulated by EPP2010, an ~1% reallocation of HEP funding would meet many needs, re-direction should be possible during this transition phase, group sizes and the peer review process is satisfactory, long-term research scientists should be supported, a higher priority should be given to funding university-based theory students and postdocs and is particularly urgent for current upcoming experiment, maintaining technical capabilities at the university is necessary for

the productivity and educational environment of these groups, small and mid-scale proposals deemed important by peer review should have an avenue for funding, experiment between the \$5M and P5 threshold should be prioritized by a Scientific Assessment Group, University Grants Program Committee should be formed to communicate between university groups and the funding agencies.

More of their findings and recommendations can be found in the final report which was submitted to HEPAP July 13: <http://www.science.doe.gov/hep/ugpsreportfinalJuly22,2007.pdf>

Questions for Homer:

(UEC) You mentioned that EPP2010 was endorsed by the community, can you elaborate on what benchmark was used to gauge that endorsement?

(HN) Technically the EPP2010 report was endorsed by HEPAP. It was our stance that it is HEPAP's role to advocate for the field as a whole, but universities might need another way to communicate their specific needs.

(UEC) Are there enough people and are they funded at the level it takes to capitalize on the advances in the field? Perhaps we need another 10-20 funded faculty. Is the travel funding adequate in the LHC era?

(HN) University funding has been essentially flat for the last decade, carrying out the goals of the EPP2010 report will not be possible under that scenario. Clearly groups are currently having trouble supporting the postdocs and graduate students needed for their research. The report contains specific recommendations about funding for LHC travel, \$2-3M per year.

(UEC) Can the needs of the university groups really be met with a 1% reallocation of funds? In 2007 dollars, university grants have fallen from \$150M in 1992 to \$110M this year. Does that mean you think it is adequately funded and needs only a 1% increase?

(HN) By 1% we mean relative to a ~\$750M overall HEP budget. Yes, we feel such a reallocation would be a reasonable starting point. Some would argue that there was a ramp up of funding in anticipation of the SSC that has not yet been completely corrected.

(UEC) You said that the peer review process is doing well? What was your observable? Especially with the lack of DOE data.

(HN) Members of the UGPS looked at the reports from DOE visiting committees regarding projects that were marginal and either got funded or were passed over. The perception is that the right choices were being made. There are many other measures of the quality of our grantees. For example, there are a number of university grants program scientists in positions of significant leadership at the LHC.

(UEC) It would be interesting to see the grant awards in \$/faculty member. Maybe established groups are well-funded, but what about upcoming faculty?

The issue of young investigators was one of the key findings of the "Gathering Storm" report and is not addressed by the UGPS. Also, are many of the grants frozen?

(HN) We were interested in the funding profile for young faculty and had several discussions with the agencies on this topic. On average, the DOE support/faculty member is 30-40% larger.

It is true that many grants may appear frozen, but this is partially due to the long timescale for executing HEP experiments.

(UEC) What is the status of the report, where is it headed, feedback?

(HN) It was submitted to HEPAP on July 13 and since that time there has not been another HEPAP meeting. We expect the report to be a topic of discussion at the fall HEPAP meeting.

Welcome of new UEC/ chair election

Sacha Kopp welcomed the new UEC members and gave a detailed presentation of the UEC activities over the last year. Kevin Pitts (CDF), University of Illinois at Urbana-Champaign, was elected as the new chair of the UEC for the upcoming year.

Proposed Dates for Future UEC Meetings

October 12, 2007

Submitted by: Chris Polly, UEC Secretary