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Dear Ray and Michael,

I am writing to communicate a summary of the meeting in Washington of the High Energy Physics Advisory Panel (HEPAP) on May 18 - 19, 2005 and its aftermath. We appreciated Michael being at the meeting and especially getting his reactions to the subpanel activities that are in progress.

The International Linear Collider Global Design Effort (GDE) is moving ahead strongly. At the time of the last HEPAP meeting, Barry Barish had been chosen as the leading candidate to head the GDE. He accepted the position at the time of the Linear Collider Workshop at Stanford and immediately began to put his organizaion together. Barry couldn't be at the HEPAP meeting, but spoke over a phone link. After briefly reviewing the history of the last year, starting with the technology recommendation, he unveiled his plans to staff the GDE using the model of an international detector collaboration. The total staff size is about 20 FTEs. He announced that G. Dugan will be the regional director for the Americas and F. Takasaki for Asia. The European director, B. Foster, was named after the meeting. In the near-term, the schedule calls for a baseline for the project by January 2006 and a conceptual design report by the end of 2006. The schedule is technically driven and aims to have a design ready when there is physics from the LHC.

HEPAP heard an update from Sally Dawson on the activities of the EPP2010

Committee. Working under the auspices of the Board of Physics and Astronomy of the National Academy of Sciences, the Committee is charged to survey elementary particle physics. Building on previous studies to identify, articulate, and prioritize the scientific questions and opportunities, it is to recommend a fifteen-year implementation plan with priorities. The HEPAP meeting came just a few days after the EPP2010's third meeting, at Fermilab, where the focus was on the ILC, international perspectives, cosmology, and the Fermilab program. Answers to the EPP2010 questions on R&D for the linear collider, developed by the U.S. Linear Collider Steering Group, were delivered through the HEPAP chair. They seemed to be well received. The next meeting of EPP2010 will be at Cornell in early August.

Early on the first day of the meeting, the Director of Fermilab, Mike Witherell, brought HEPAP up to date on the Fermilab research program. HEPAP was pleased to hear of the great progress made with Run II of the Tevatron collider. At the time of the meeting, the integrated luminosity was rapidly approaching 1 fb^{-1}, a milestone that has since been passed and celebrated. This took place at a time when Main Control Room operations are more complicated than they have ever been, with not only the collider, its injector train, and the recycler running, but the Main Injector, NuMI, and MiniBooNE successfully as well. NuMI has started physics operations and the result on electron-neutrino appearance from MiniBooNE will be announced by the end of this year.

Also that first day, Jonathan Dorfan, the Director of SLAC reviewed the turn-on of the B-Factory following the recovery from the electrical accident and shut down on October 11, 2004. The physics run had begun in mid-April and the turn on of the machine had gone well. During the meeting, a tree brought down a power line to SLAC, causing another stoppage, but the plans to double the integrated luminosity by 2006 and double that by 2008 to over 1 ab^{-1} stand as goals for the B-Factory. The tease of new physics seen in the difference in CP-asymetries in "tree" and "penguin" decay modes of the B meson, something that is of 3.7 standard deviation significance at the moment, could be resolved one way or the other by the full data set.

HEPAP has a record six subpanels operating, and a seventh being formed on Advanced Accelerator R&D. Each has a distinct role to play and together they will have a major impact on the mid- and long-term particle physics program.

- Bob Cahn gave a report on the Subpanel that he chaired on the science value of the Rare Symmetry Violating Processes (RSVP) experiments, KOPIO and MECO. These experiments, proposed to be run at the AGS at BNL, were approved by the National Science Board and funds for the beginning of construction appear in the President's budget proposal for FY2006. However, questions arose earlier this year about going ahead, and HEPAP was charged to review the science value as part of a broader set of reviews. The Subpanel, put together rapidly after the last HEPAP meeting, had carried out an intensive and full analysis and Cahn presented the draft Executive Summary of their report. A goal of 100 events for KOPIO and a minimal sensitivity of 10^{-16} for MECO were seen as appropriate. Soon after the meeting the final report of the RSVP Subpanel was forwarded to HEPAP and approved.
- The Cosmic Microwave Background (CMB) Task Force, a subpanel formed jointly with AAAC, was at the stage of writing its final report at the time of the HEPAP meeting. HEPAP heard from Rainer Weiss by a phone link that since then comments on the draft report by members of the community have caused the Task Force to pause and consider whether to change their report. The Task Force was urged to give their best advice rather then tryingto produce a community document.
- The Dark Energy Task Force (DETF) is a joint subpanel reporting to HEPAP and to the Astronomy and Astrophysics Advisory Committee (AAAC) of NSF and NASA. Rocky Kolb detailed their progress by telephone. He characterized their work as developing a plan for the near-term and "shaping the battlefield" for LST and JDEM. As a first step, following their meeting in March, they are calling for White Papers from the many proposed projects with the aim of putting them together into a a program.
- Joe Lykken, co-chair along with Jim Siegrist, of the Subpanel on LHC-LC Synergy, described their progress and goals. In addition to regular phone meetings and face-to-face meetings, they visited Washington on April 22nd to meet with potential customers. They see producing a layered document meant for multiple audiences. The three science themes are to discover the identity of dark matter, resolve the mysteries of the Higgs, and connect the laws of the large to the laws of the small, and Lykken gave three short physics examples that illustrate each. Theschedule is very tight, with the immediate goal being a re-

charge was circulated to HEPAP. The members of P5 are nearly all chosen and the Subpanel should get underway shortly and have a first report by October.

- A new charge to form a subpanel on Advanced Accelerator R&D was discussed in some detail with HEPAP. This subpanel should be formed soon.

HEPAP heard a report from Ray Brock on the HEP Resources Study. After a huge effort, they have almost 100% response from the experiments and from the PIs. Brock showed sample letters and spread sheets sent to both the PIs and to the spokespersons for the experiments. Although no problems had been identified, it was considered too early to report out-year trends. This will be given at the next HEPAP meeting, allowing an understanding of the match between the needs of the experiments that the U.S. program is committed to carry out and the human resources needed to do them over the next five years.

We hope that both of you will be able to address us at our next meeting on July 11-12, 2005 in Washington.

Sincerely,

Frederick J. Gilman

Frederick J. Gilman
HEPAP Chair

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