THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

Operated by the Southeastern Universities Research Association for the U. S. Department of Energy

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Prof. Gerry Dugan
Director, GDE/ILC-Americas
Cornell University
228 Newman Lab
Ithaca, NY 14853

Dear Gerry,

Attached are five very modest proposals that Jefferson Lab would like you to consider for funding for FY 2007 and beyond via ILC-Americas GDE together with DOE/HEP Office.

The first two are a continuation of the two that are already in your books:

(i) Peter Kneisel: Work on Novel materials such as Single Crystal/Large Grain Niobium and novel cavity shapes, including superstructures etc. that promise to reduce a lot of processing and number of components and hence has large potential for cost reduction. This should be funded directly through ILC/GDE.

(ii) John Mammosser: Work on EP etc. for the FNAL cavities. We will continue this at the previous year's rate in the least but in concert with FNAL's MOU with us; the rate may increase depending on FNAL's needs.

The next three are very high-value added modest 'new' proposals as follows:

(iii) Joe Preble/Robert Rimmer: Value Engineering of the fourth generation cryomodules with integration of cold mass, couplers, etc. with the eventual goal of simplicity of fabrication and hence reduction of cost, keeping performance at the highest. This is at a very modest request of up to 2 FTEs, but considering the amount of effort spent by FNAL under Harry Carter starting afresh, I strongly believe that they can benefit from our engagement and counsel. Preble has built the cryomodules for all our cavities to date . . . CEBAF, its upgrade, FEL, SNS, ... He was the one involved in cost comparisons for the FNAL cost exercise some years ago. I put very high significance on this.

(iv) Charlie Reece: Work on understanding Cavity Contamination issues to monitor and control cavity "Dark Currents". I consider this work to be highly significant. As you know, SLAC, although on a different technology base, has been involved with dark current issues for nearly 20 years and it will remain in the SRF case, albeit from different causes, namely particulate contamination of cavity surfaces. This work will be synergistic with other cavity processing work at JLab. We need an acknowledgement of its importance/significance from you via approved funding at an appropriate level.

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(v) Larry Phillips: Work on thin films with the potential of achieving factors of two increments in achievable gradients and subsequent technical reach beyond 1 TeV center-of-mass colliders. This work will complement the university-based work being done on this, focusing on the "values' that make it more directly linked to an operating linac, such as consequences in cavity/cryomodule/cryostat design etc. Again it is a very modest request and should be funded somehow either through DOE/HEP/AARD or through ILC. Given its practical aspect for real accelerators in contrast to the university proposal, I would consider it more appropriate for ILC funding.

I have held off sending you the revised MOUs, as I was implementing some benign word-smiting on it. I will send them to you by the end of this week. If they have evolved since last time, please send me the latest copy of the GDE/JLab MOU and its addenda. When approved, I will add these proposals to that MOU. For now, I am sending these to you in the format of DOE Field Work Proposals.

I thank you in advance for giving these proposals your highest and early consideration.

Regards,

Swapan Chattopadhyay
Associate Director, Jefferson Lab
and
ILC-Americas Spokesperson, Jefferson Lab