

October 22, 2002

Dr. John R. O'Fallon, Director
U.S. Department of Energy
Division of High Energy Physics, SC-22
19901 Germantown Road
Germantown, Maryland 20874-1290
(301) 903-3624

Dr. Marvin Goldberg
Elementary Particle Physics
National Science Foundation
4201 Wilson Boulevard
Room 1015N
Arlington, VA 22230
(703) 292-7374

Dear John and Marvin:

We have enclosed a report describing a proposed national program of research and development supporting the design and utilization of a high energy linear electron-positron collider. Entitled *A University Program of Accelerator and Detector Research for the Linear Collider*, it presents 71 new research projects involving groups from 47 universities in 22 states, five national and industrial laboratories, and eleven foreign institutions. The report is part of an effort to embark on a large-scale, national program which will extend efforts already in progress at laboratories and other universities around the world. It has been written by members of the Linear Collider Research and Development Working Group (LCRD) and the University Consortium for Linear Collider R&D (UCLC).

The large participation and spontaneous assembly of many groups is an expression of the high level of interest in the university community in the physics goals of a Linear Collider. Nearly half the proposed work is related to advancing accelerator technology. This is a change from the recent past when most university-based high energy physics R&D work concerned detector development.

One of our concerns was to develop an effective set of projects with easy collaboration across the boundaries of geography and funding agency in order to avoid unnecessary, and inefficient duplication of effort. We have been aided greatly in this by the U.S. Linear Collider Steering Group (chaired by Jonathan Dorfan), the American Linear Collider Physics Group (led by Jim Brau and Mark Oreglia), and the American Working Group on Linear Collider Accelerator Technology (organized by Tom Himel, Joe Rogers, and Dave Finley). At this early stage, organizational structures in the Linear Collider effort are only partly formed. In spite of this, we have found that the intelligence and integrity of the participants, the existence of shared goals, and the excitement of beginning something new have made the process go remarkably well. We believe that we have assembled a coherent, balanced research program which will mesh well with existing international efforts.

The procedures for proposal submission to the Department of Energy and National Science Foundation differ somewhat. As a result, the manner in which formal requests for support are

transmitted to the agencies will be different for LCRD and UCLC. In spite of this, we have found it most natural to organize the research around the topics to be studied, rather than the agency to which proposals will be sent. This is reflected in the order in which projects appear in the body of *A University Program of Accelerator and Detector Research for the Linear Collider*. Liaisons at both agencies have found ways to help us maintain this intellectual coherence while still satisfying relevant administrative constraints. We greatly appreciate this, and value the participation of DOE and NSF in efforts to bring the Linear Collider into the world.

Sincerely,

Dan Amidei
University of Michigan

Gerry Dugan
Cornell University

Dave Finley
Fermilab

George Gollin
University of Illinois

Tom Himel
SLAC

John Jaros
SLAC

Andreas Kronfeld
Fermilab

Usha Mallik
University of Iowa

Ritchie Patterson
Cornell University

Joe Rogers
Cornell University

Copies:

Dr. Samuel Aronson
Brookhaven National Lab

Dr. Aesook Byon-Wagner
Department of Energy

Dr. Glen Crawford
Department of Energy

Dr. Joseph L. Dehmer
National Science Foundation

Dr. Jonathan Dorfan
SLAC

Prof. Frederick J. Gilman
Carnegie Mellon University

Dr. Raymond Orbach
Department of Energy

Dr. Michael Procaro
Department of Energy

Dr. Peter Rosen
Department of Energy

Dr. David Sutter
Department of Energy

Dr. Maury Tigner
Cornell University

Dr. James J. Whitmore
National Science Foundation

Dr. P.K. Williams
Department of Energy

Dr. Michael Witherell
Fermilab