

**Memorandum of Understanding
between
The International Linear Collider - Global Design Effort
and
The Fermi National Accelerator Laboratory**

March 2, 2006

1. Introduction

1.1 *General Description*

The DOE High Energy Physics Advisory Panel (HEPAP) has stated the need for a 500 GeV electron-positron linear collider to address fundamental particle physics questions at the TeV energy scale, and recommended that such a facility be the next major project for the U.S. High Energy Physics program. The International Linear Collider (ILC) is envisioned to be a globally supported project to construct such a linear collider to address this mission need. Research and Development (R&D) for the ILC is being carried out by an international collaboration of laboratories and universities, in three regions of the world (the Americas, Asia, and Europe), under the direction of an international organization, the Global Design Effort (GDE). The GDE is a virtual organization with members drawn from existing laboratories and universities. Overall co-ordination of the technical activities within the Americas region is the responsibility of the GDE-Americas Regional Director.

This Memorandum of Understanding (MoU) establishes collaboration between Fermi National Accelerator (FNAL) and the GDE, hereinafter referred to as the "Parties", to work jointly on the technical design and R&D needed for the ILC. This agreement between the Parties is made in the context of existing national and international collaborations, does not alter those collaborations, and is not exclusive; other laboratories or universities may join at any time under similar agreements.

This MoU is a collaborative agreement between scientists and does not constitute a legal contractual obligation on the part of either of the Parties.

All work performed by FNAL as part of the ILC Collaboration will be coordinated by the FNAL ILC Program Director. Definition of the scope of work and planning of specific work to be done at FNAL are the responsibilities of the GDE-Americas Regional Director and the FNAL ILC Program Director. The scope of work done at FNAL will be documented in this MoU and future Amendments to it. Detailed work packages to be completed in a specific time frame will be described separately in

Addenda to this MoU.

1.2 *Objective*

The objective of this MOU is to document the terms of agreement between GDE and FNAL under which work in support of the ILC is to be performed at FNAL.

1.3 *Scope*

This MoU covers work to be performed at FNAL during the R&D and technical design phase of the project. The scope of work to be done by FNAL may include elements of conceptual design and modeling, engineering, procurement, fabrication and testing of prototypes, preparation of documentation, and participation in review and management processes. This agreement does not specify the time of performance of tasks in any particular category, nor does it preclude the addition of tasks by amendment to this MoU.

2. General Provisions

2.1 *Terms and Conditions*

FNAL Laboratory is managed and operated by the DOE contractor URA under contract DE-AC02-76-CH03000 with DOE. All work performed by FNAL in support of the ILC will be consistent with the terms and conditions of this contract.

2.2 *Funding*

Funds for the work to be accomplished at FNAL will be provided by DOE. These funds will be agreed to by the GDE-Americas Regional Director and the FNAL ILC Program Director. It will be defined in annual Addenda to this MOU. Funds for work done at FNAL in support of the ILC will reside at FNAL. DOE funds provided to institutions with DOE contracts will be provided through that contract. The mechanism for provision of funds by others will be determined on a case-by-case basis and summarized in an addendum to this MoU.

2.4 *Review*

The Fermilab director will appoint a Technical Advisory Board (TAB) for the ILC work done at Fermilab. This board will be used by the Fermilab ILC management to seek advice, as needed, on the technical direction of the ILC R&D in light of the national and international ILC program and Fermilab's desire to host ILC. The Fermilab director may also seek the advice of the Fermilab Accelerator Advisory Committee (AAC) on the progress and direction of the Fermilab ILC effort. Fermilab ILC R&D work may also be reviewed by other Laboratory review committees. The Fermilab Director will invite representatives of the GDE to such Fermilab reviews as he deems appropriate.

2.3 *Cost Recovery*

It is understood that FNAL is operated as a full cost recovery facility. All costs of work done at FNAL on the ILC are to be covered by the funds described in Section 2.2 above. The FNAL ILC Program Director will be responsible for management of these funds. The GDE-Americas Regional Director, in consultation with the FNAL ILC Program Director, may request that specific work on the ILC at FNAL be redirected or terminated. Fermilab will respond to such requests as quickly as possible within the bounds of DOE funding restrictions and sound management practices. Fermilab, in consultation with the TAB and/or AAC may decide to continue specific tasks it deems in its best interest but would then fund such tasks with other than ILC resources.

2.5 *Reporting*

FNAL will submit to the GDE-Americas Regional Office semiannual progress reports of the work done at FNAL. These reports will contain descriptions of technical progress, statements of goals for the next reporting period, and indications of long-range plans for all work being done at FNAL. These reports will be submitted at the midpoint and close of the Fiscal Year, and will become part of technical and budget planning for the GDE.

FNAL will submit to the GDE-Americas Regional Office a quarterly statement of costs and commitments incurred for all work being done using the funds described in Section 2.2 above. These reports will become part of the technical and budget planning for the GDE.

2.6 *Ownership of Equipment*

All equipment purchased or fabricated using DOE funds at FNAL will be the property of DOE/FNAL and shall be subject to the FNAL property management system. All new equipment purchased by FNAL for exclusive use in the ILC R&D effort or incorporated into ILC prototypes will remain available to the GDE until it is deemed by the GDE-Americas Regional Office that such equipment is no longer needed. New equipment which is jointly shared by the ILC R&D effort and other programs of FNAL will be controlled by FNAL in cooperation with the GDE-Americas Regional Office. New equipment which is supplied to laboratories outside the Americas region for ILC R&D efforts will remain available to the GDE Regional Office in that region until it is deemed by the GDE that such equipment is no longer needed. New equipment provided to laboratories outside the Americas region will follow DOE rules and regulations, as well as any applicable national export control requirements.

2.7 *Intellectual Property*

Rights with regard to intellectual property are regulated by FNAL contractor and DOE. "Intellectual property" includes but is not limited to inventions, technical data, and software.

2.8 *Scientific Publication*

All work covered by this MoU will be unclassified. Publications will be collaborative, although either Party has the right to publish information in part or in whole, independent of the other, subject to informing the other Parties in writing of their intention to do so. Consent to publish may be denied in writing by a Party if proprietary information is involved. Disputes will be settled through mutual cooperation befitting the scientific goals of the project.

All publications and all intellectual property developed under this collaboration are subject to FNAL's procedures and DOE contractor's contract URA DE-AC02-76-CH03000 with DOE. Note that Department of Energy contracts require that all publications receive prior copyright and invention review. All publications are required to indicate the contribution made by each of the Parties.

2.9 *Amendments*

This MOU may be modified or amended from time to time by written agreement of both Parties.

2.10 *Public Information Coordination*

Fermilab has formed a community task force to discuss the ILC program and the siting of ILC in Illinois. Fermilab will keep GDE and ILC/GDE-Americas communicator informed of this development. Subject to applicable laws and regulations, decisions on the disclosure of information to the public regarding the ILC program shall be made by the GDE-Americas Regional Director following consultation with the FNAL ILC Program Director when appropriate.

3. Plan of Work

Under this Memorandum of Understanding, FNAL will carry out activities in the main program areas listed in Section 1.3. Particular activities and deliverables will be specified and agreed upon by the FNAL ILC Program Director and the GDE-Americas Regional Director and documented in Addenda to this MOU.

4. Execution

4.1 *Effective Date*

This MOU shall become effective upon the latter date of signature of the Parties. It shall remain in effect until superseded or five years from the effective date, whichever comes first.

4.2 *Approvals*

The following concur in the terms of this Memorandum of Understanding:

Dr Barry Barish,
Director, GDE

Dr. Piermaria Oddone,
Laboratory Director, FNAL

Date

Date

Dr Gerry Dugan,
GDE-Americas Regional Director

Dr. Robert Kephart,
ILC Program Director, FNAL