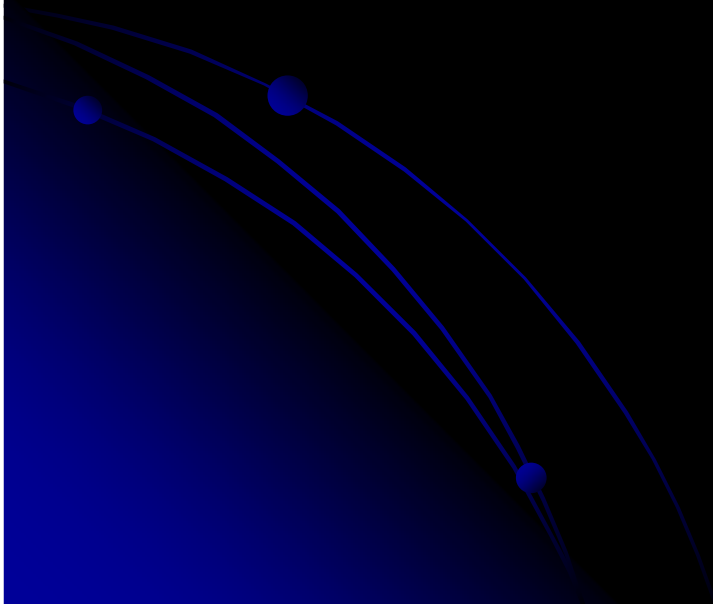
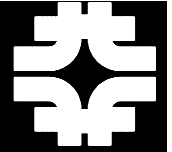


SCRF and the future of Fermilab

SCRF Review
2/13/07

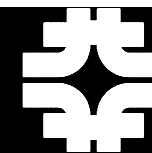
Pier Oddone



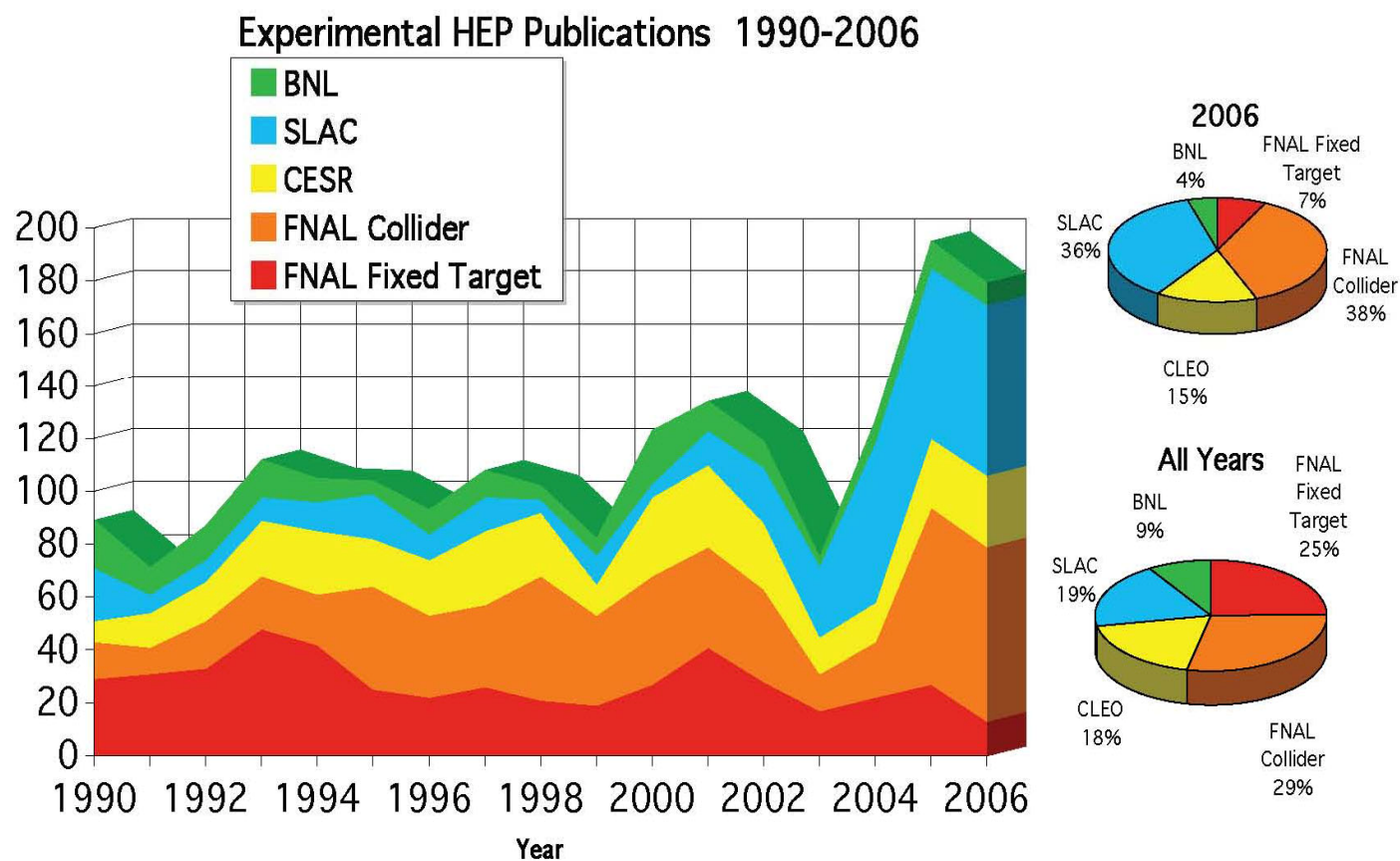


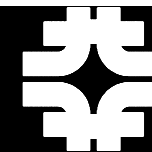
Outline

- The national situation in particle physics
- International and national strategic plans
- Strategies to build the ILC in the US



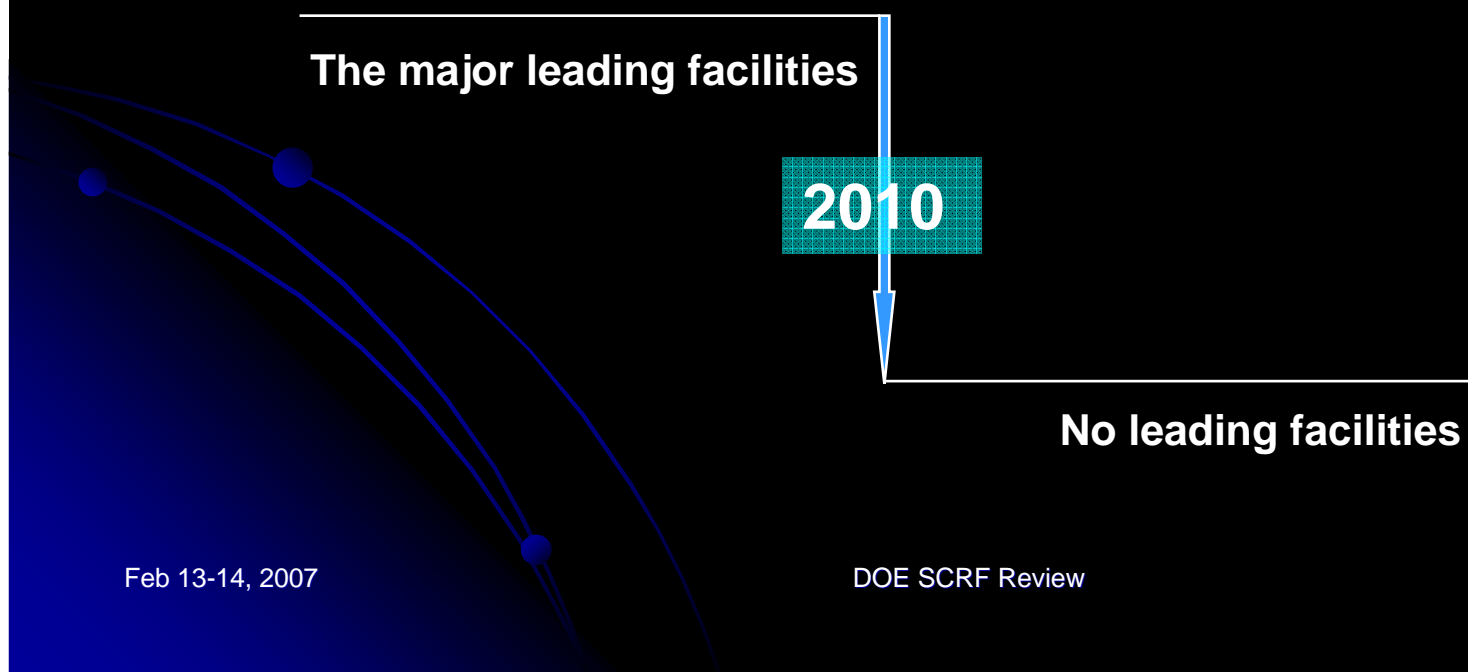
Extraordinary year for physics

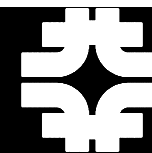




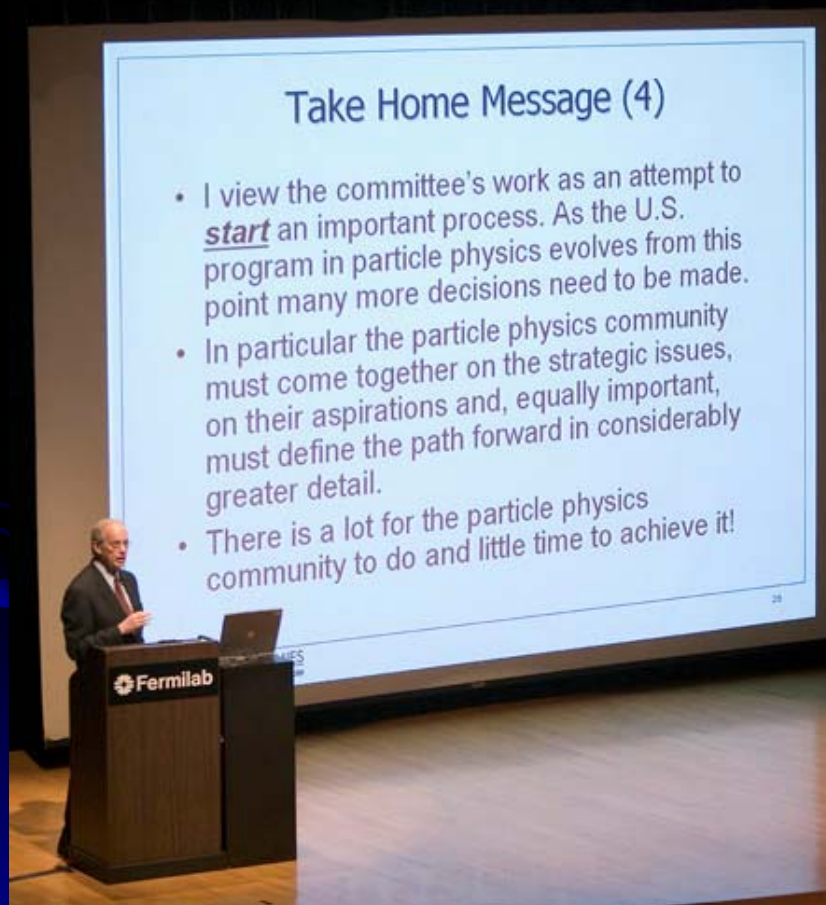
The national drama

- EPP2010
 - Shapiro: “looks like an exit strategy”
- Abrupt transition by the end of the decade:

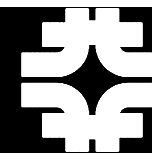




EPP2010 Report



- Extraordinarily supportive of elementary particle physics
- Extraordinarily supportive of the ILC and of hosting the ILC in the US
- Broad program with clear recommendations on priorities



EPP2010

- LHC
- ILC Global
- ILC Hosting
- Particle Astrophysics
- Global Neutrino Program
- Quark Flavour Physics

EUROPE

- LHC
- Accelerator R&D
- ILC
- Global Neutrino Program
- Astrophysics
- Flavour Physics
- Nuclear Physics



A national plan of action

Domestic program with new and redirected investment



= leading



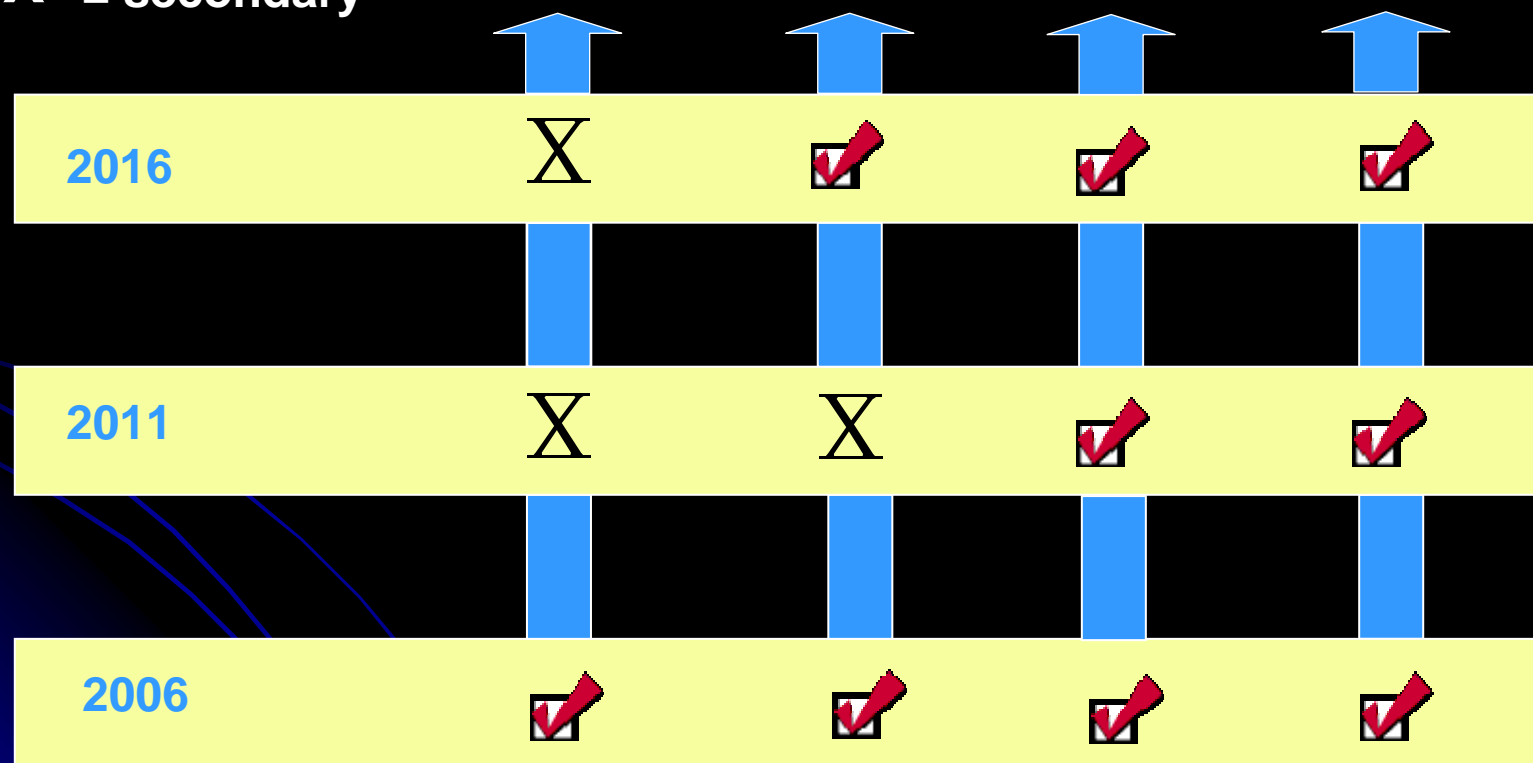
= secondary

Flavor
frontier

Energy
Frontier

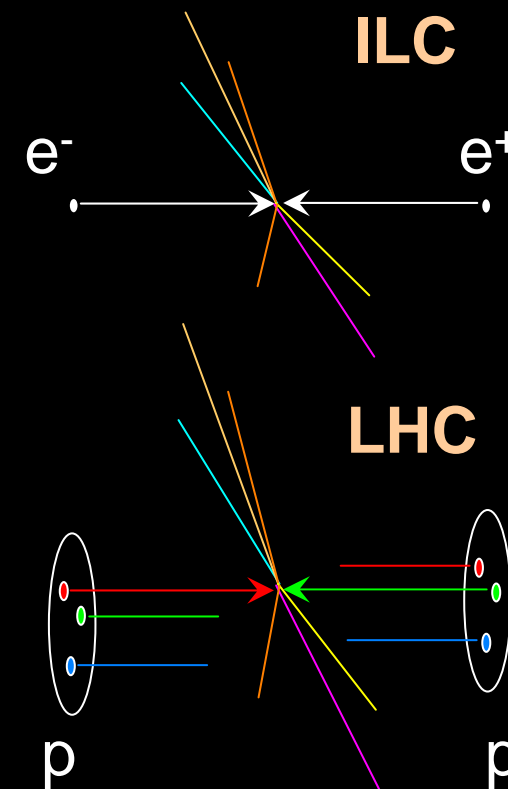
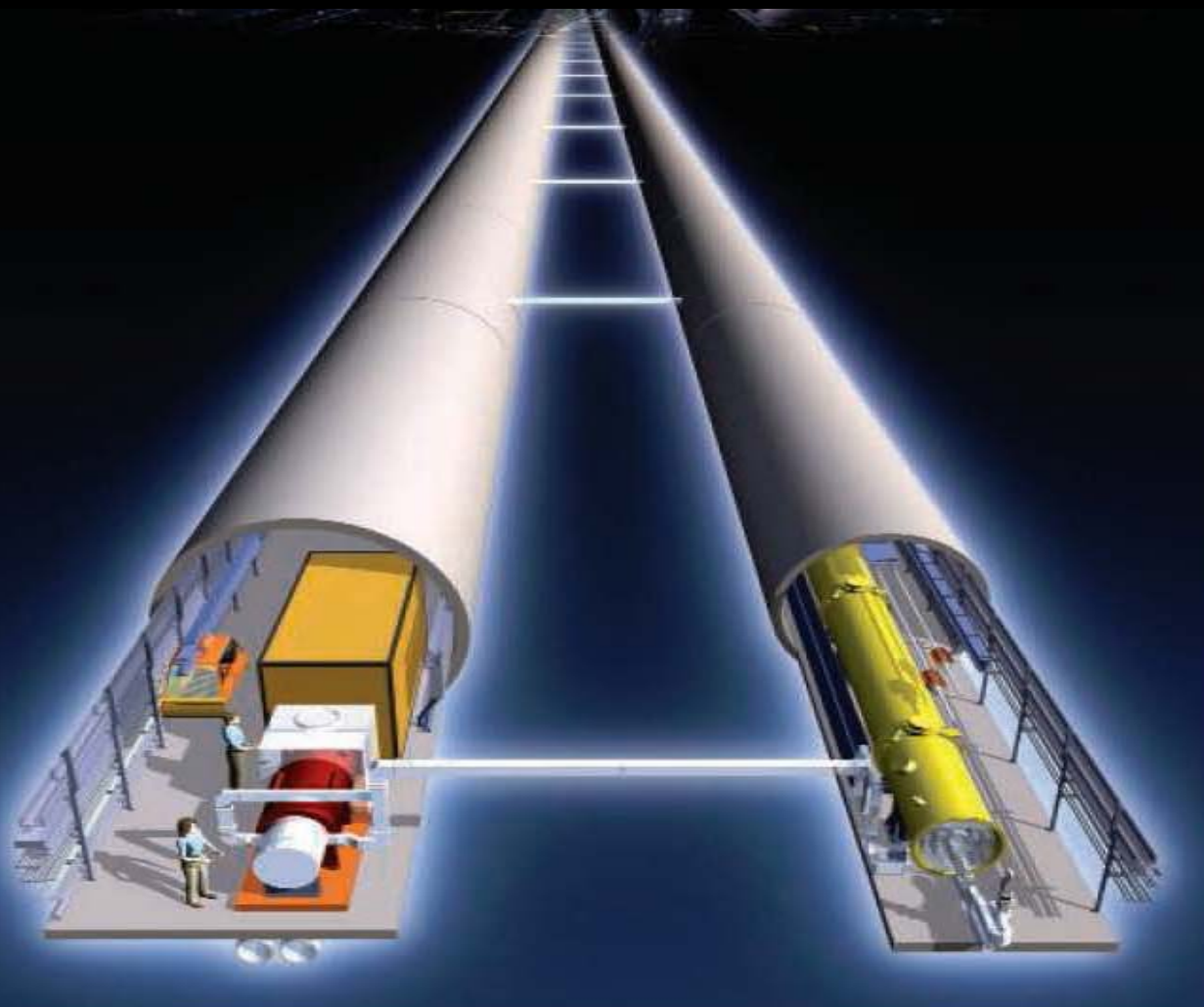
Neutrino
Frontier

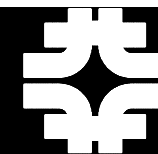
Astrophysics
Frontier





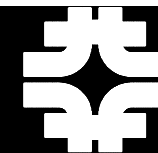
ILC: a World Machine in the US



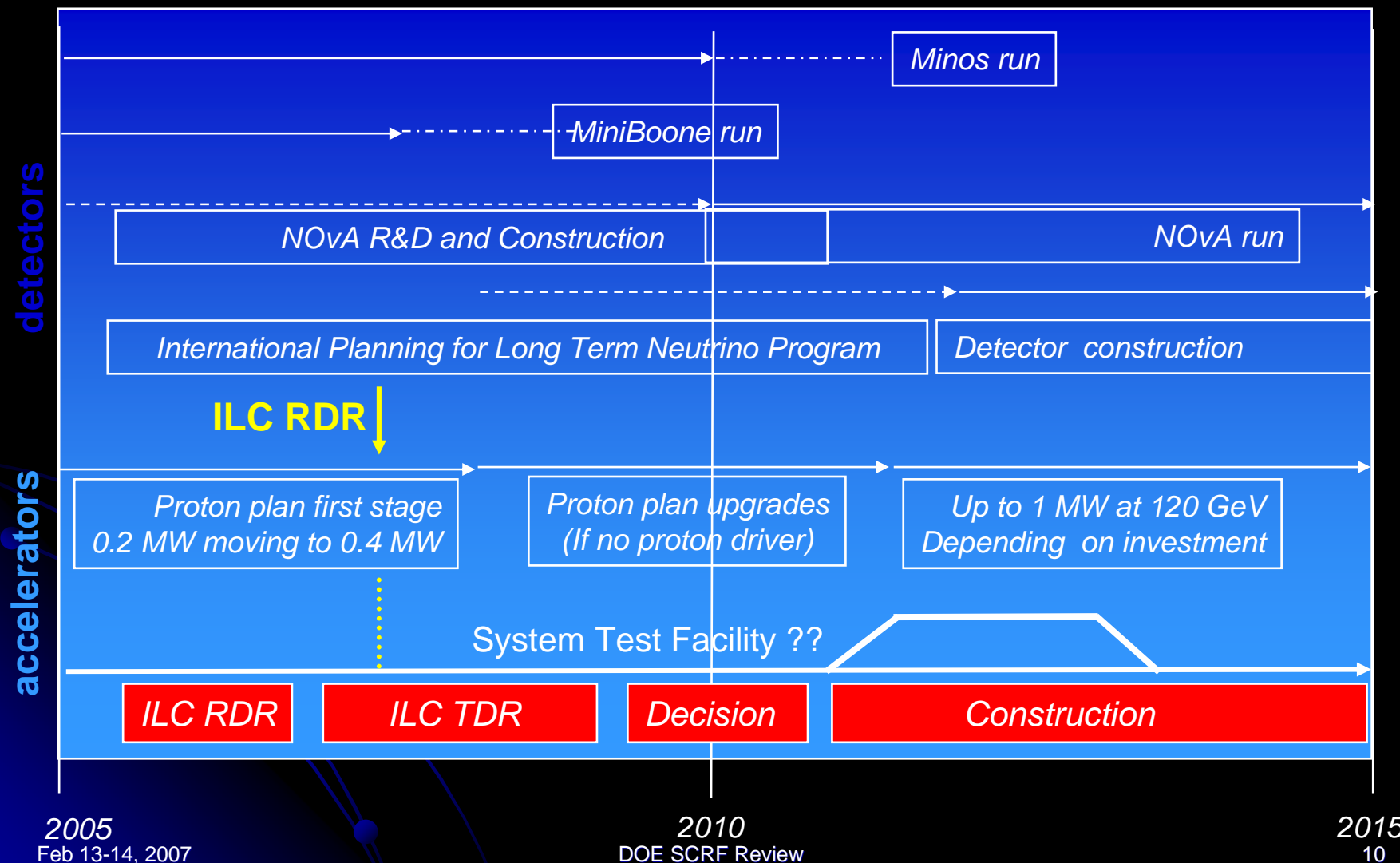


Characteristics of a plan

- Move forcefully to develop and build the ILC
- Design a strategy that has resiliency against:
 - Delays (very limited funding everywhere for EDR, R&D, test facilities, industrialization)
 - Limitations on R&D and EDR phases due to funding caps before decision to build (e.g. NLC cap at <\$20M/year; transition FY07 to FY08 at \$60M/year)
 - Further reductions of HEP base in case of ILC delays, including at Fermilab.
- Vigorous program of accelerator R&D



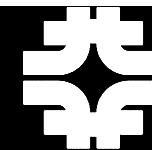
Accelerator Programs



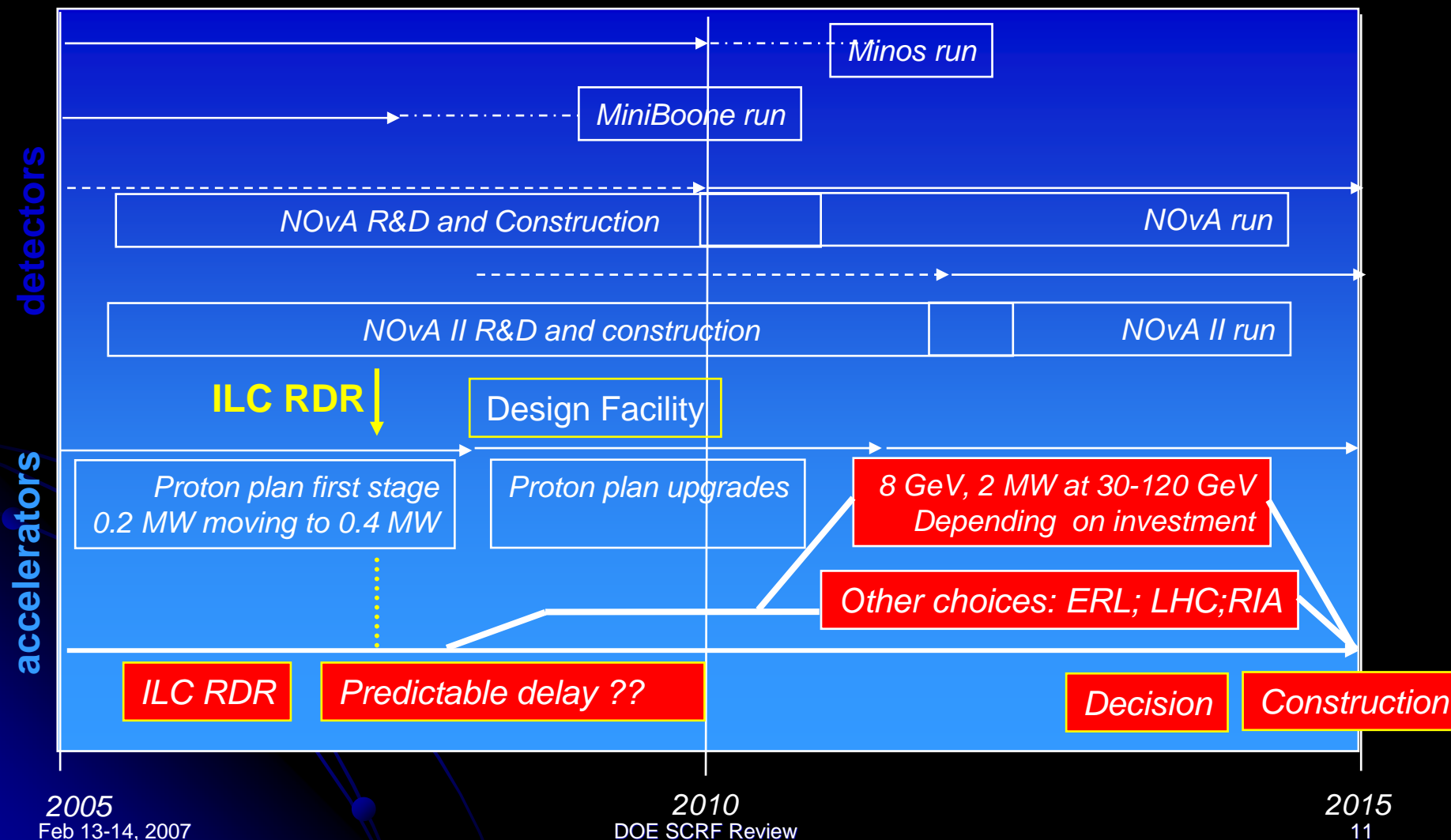
2005
Feb 13-14, 2007

2010
DOE SCRF Review

2015
10



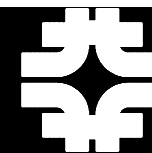
Accelerator Programs



2005
Feb 13-14, 2007

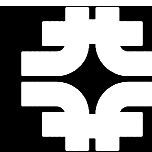
2010
DOE SCRF Review

2015
11



Issues for an intermediate facility

- Plan developed together with the community
- Only 8GeV, 2MW, linac couples to operating facilities at Fermilab: it could be the first stage of long range evolution to muon collider (with neutrinos along the path)
- Alternative is to develop technology by building ERL
APS upgrade, new linac for LHC upgrade, RIA.....
- **BIGGEST ISSUE:** when is substantial delay predictable for ILC



The role of SCRF infrastructure

- Essential for ILC development. Scale will determine the pace of R&D and readiness for ILC construction
- Essential to allow intermediate facility if this is needed in the path to ILC development
- Essential to maintain Fermilab strength after the Tevatron shutdown: NML facility