

# Illinois Accelerator Research Center

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# State of Illinois Support

- In discussions with the Illinois Department of Commerce and Economic Opportunity (IDCEO) FNAL has argued that accelerator technology can have large potential economic impacts on the state of Illinois
- Commercial applications of accelerators include:
  - Medical accelerators for patient therapy
  - Medical isotope generation
  - Radiological sterilization and food preservation
  - Accelerator activated polymerization
  - Imaging devices, etc.
- The state of Illinois has endorsed the idea that Northern Illinois should be a center for accelerator development and that FNAL, ANL, and Illinois universities should form a nucleus for technology transfer to Illinois industry



# Illinois Accelerator Research Center

- **Fermilab and ANL also have described the large potential economic benefits of the construction and operation of new accelerator facilities such as the International linear Collider (ILC) or the Rare Isotope Accelerator (RIA)**
- **The IDCEO has recognized these opportunities and asked how the state might help**
- **Fermilab responded with a proposal to create a new Illinois Accelerator Research Center (IARC) to be located on the FNAL site**



Fermilab

# The Proposal

## Illinois Accelerator Research Center

State of Illinois

Fermi National Accelerator Laboratory



*The Illinois Accelerator Research Center would help establish Illinois's world leadership in accelerator science and technology and build a foundation to host the International Linear Collider at Fermilab.*

### **The Illinois Accelerator Research Center**

Particle accelerators, used in medicine, industry, and scientific research, have played a key role in the remarkable progress of science and technology in the past and will play an even greater role in the future. Emerging accelerator technologies will lead to the construction of unprecedented scientific instruments for the advancement of fundamental research and the development of new materials and methods. If sited in Illinois, these new accelerator complexes will have immediate economic and scientific impact. The new technologies will also find applications in business and industry, agriculture and medicine. The proposed Illinois Accelerator Research Center (IARC) located at Fermi National Accelerator Laboratory will help ensure that these new machines will be sited in Illinois by providing a focal point for accelerator research and industrialization. IARC will also strengthen the technological and economic health of Illinois while providing unique educational opportunities for a new generation of engineers and scientists.

### **The International Linear Collider: An Opportunity for Illinois**

Fermi National Accelerator Laboratory has an excellent chance to be chosen as the global site for the International Linear Collider (ILC), a proposed multibillion-dollar particle accelerator for physics research. Discoveries at the ILC promise to revolutionize our understanding of the fundamental nature of the universe. Previous high-energy physics projects have produced far-reaching applications and technologies, and the development of ILC technologies will benefit Illinois. Fermilab collaborates closely with Argonne National



# Goals of IARC

- **The goals of IARC are:**
  - **To promote Northern Illinois as a center of excellence for accelerator development**
  - **To promote cooperation between FNAL, ANL, and Illinois universities on accelerator development**
  - **To promote the development of SRF technology in Illinois**
  - **To increase the likelihood that projects like ILC & RIA are sited here**
  - **To promote SRF technology transfer to Illinois industries**
  - **To provide office and work space to enhance education on accelerator technology in cooperation with local universities**
- **It would leverage extensive existing FNAL electrical and cryogenic infrastructure (e.g. CHL) and experienced staff**
- **This model has worked well at ANL ( e.g. nano-science center)**



# Status

- The proposal requests a total of \$ 35 M for the design and construction of a building
- The OHEP leadership has indicated support for this effort and pledged continued support of federal R&D
- As a result the IDCEO recommended to the governor that funds to start the building design and construction be included in the 2007 budget.
- A \$ 3 M request for 2007 is included in the Capital Bill and that awaits passage by the Illinois legislature



# IARC Infrastructure Request

- The infrastructure required to support IARC will depend on the status of ILC, RIA, HINS, and other accelerator initiatives.
- A detailed request will be developed as we understand the status of both the IARC construction schedule and the status of projects
- The \$ 20 M request represents an educated guess of funds required about 2010 to begin construction of the IARC infrastructure.
- For now consider it a “place holder”.