

Science in the Neighborhood

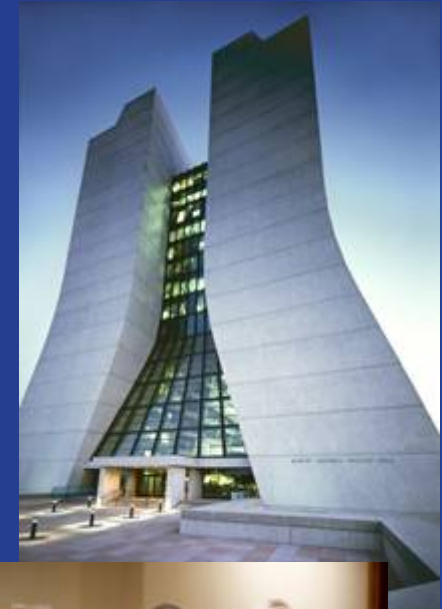
Public engagement in big science

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Fermilab
3 July 2009



The public and Big Science

- Ordinary citizens seldom have the opportunity to engage in large science projects.
- In 2007, Fermilab invited local citizens to participate in planning and decision-making for a new particle accelerator.



Batavia.....to Washington

- The Fermilab Citizens' Task Force confronted issues affecting the local community...
- ...and addressed questions at the heart of US science policy.

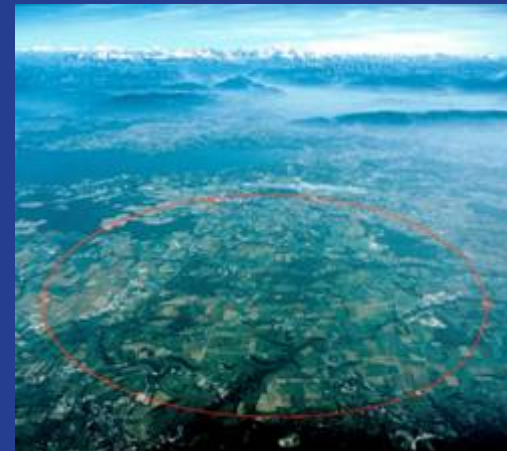


Context: The energy frontier

- Fermilab's Tevatron is the world's highest-energy particle collider.
- Soon, CERN's Large Hadron Collider will begin operating with many times the Tevatron's energy.



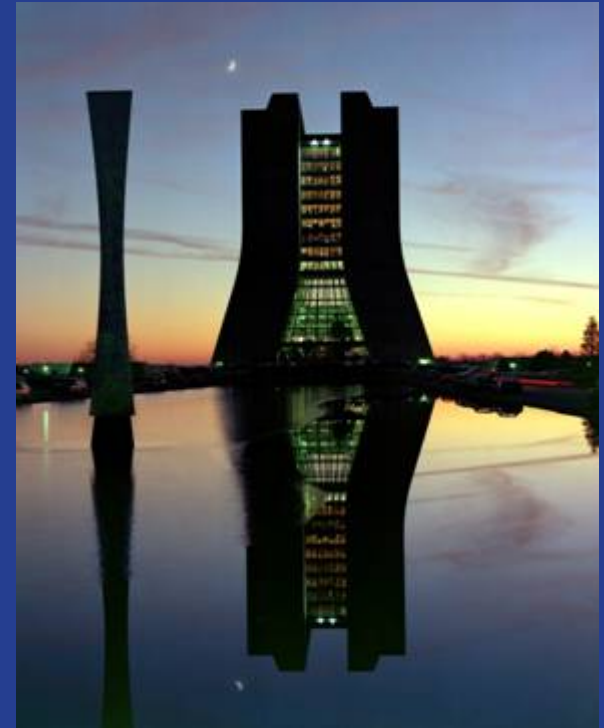
Fermilab's Tevatron 2 TeV



CERN's LHC 14 TeV

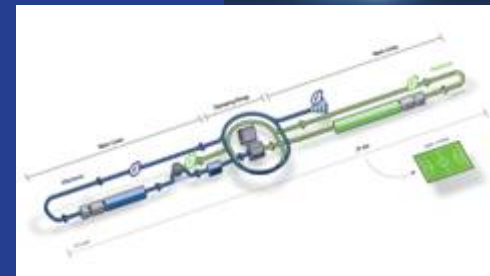
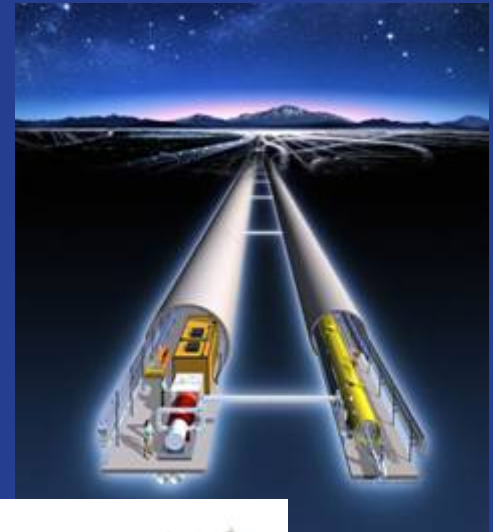
What's ahead for US particle physics?

- When the energy frontier moves offshore, can the US remain a leader in this international field.?
- That is the question for US science policymakers—and Fermilab



The world's next accelerator

- The International Linear Collider is a proposed new accelerator.
- Electron-proton collisions give a different perspective from LHC.
- 20-mile underground tunnel
- Totally global project



IS06 (Linear Collider Workshop 2006)
Tuesday 06 March 2006 - Monday 13 March 2006
Indian Institute of Science, Bangalore.

ILC at Fermilab?

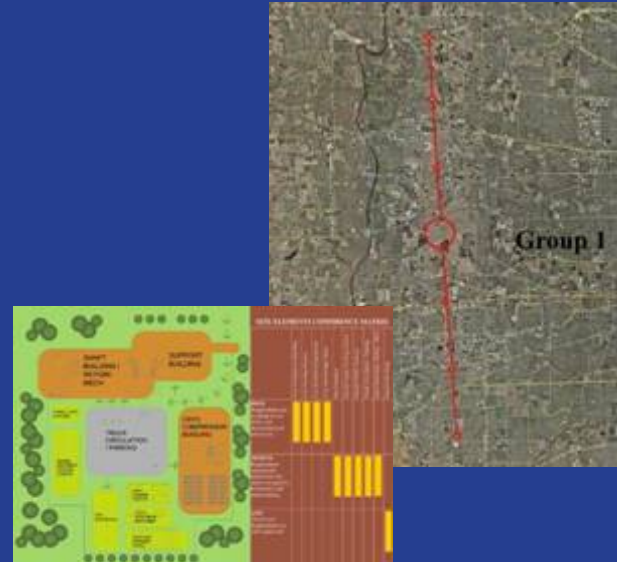
- If LHC results confirm ILC discovery potential...
- If cost is affordable...
- ...ILC would ensure Fermilab and US future
- as leaders in global particle physics.



\$\$\$\$\$?

ILC at Fermilab?

- Accelerator would extend 6 miles on either side of lab site.
- Large structures on surface
- Huge construction project
- Big impact on community



ILC Citizens' Task Force


- Charge: Provide guidance and advice to Fermilab to ensure that community concerns and ideas are included in all public aspects of ILC planning and design.



- Why a citizens' task force?




C.A.T.C.H. - ILLINOIS
 (CITIZENS AGAINST THE COLLIDER - HERE)

 THIS IS WHAT FERMILAB USED TO LOOK LIKE WHEN IT WAS A "GOOD NEIGHBOR." THAT IS, BEFORE IT WAS PROPOSED TO BECOME THE "INJECTOR" FOR THE 53-MILE SSC RING. NOW FERMILAB IS SAYING, ALONG WITH THE STATE AND FEDERAL GOVERNMENT ...

"I WANT YOUR LAND, WATER, WELLS, HOMES, FARMS, BUSINESSES, JOBS, TAX BASE, TAX DOLLARS, WETLANDS, AND YOUR PEACE AND TRANQUILITY. I WANT IT ALL AND I WANT IT NOW, AND IF YOU WILL NOT GIVE IT TO ME ... I WILL TAKE IT."

FERMILAB USED TO BE A GOOD NEIGHBOR, WHAT A SHAME ... WHAT A DISGRACE ... WHAT A DISAPPOINTMENT ... THIS IS WHAT IT LOOKS LIKE NOW ..



IF YOU WANT TO STOP THIS OBNOXIOUS INTRUSION UPON YOUR HOME, FAMILY AND ENVIRONMENT, THEN PLAN TO ATTEND THE FINAL DEPARTMENT OF ENERGY HEARINGS ON OCTOBER 8th & 7th AT WAUBONSIE VALLEY HIGH SCHOOL. THIS IS YOUR LAST CHANCE BEFORE THE DYNAMITING STARTS AND THE TRUCKS BEGIN TO ROLL!

"FERMILAB IS NO LONGER A GOOD NEIGHBOR"

C.A.T.C.H. - ILLINOIS
 P.O. BOX 104, WASCO, IL 60183
 (312) 584-4244

Fermilab's fears about P4*

- Would neighbors expect to decide scientific and technical questions? (No.)
- Would they suspect Fermilab's motives (Yes, at first.)
- Would CATCH participate? (Yes.)
- Would their recommendations make sense? (Absolutely.)

*Public participation in particle physics

Convening the task force

- Call for nominations. (Much press coverage.)
- Goal: at least 15 solid nominations.
- More than 100.
- Selection committee chose 25 members.

Who are they?

- Mayor
- Roofing contractor
- Environmentalists
- Union/management organization CEO
- Homemaker/volunteer
- Small businessmen
- Hispanic community leader
- Manufacturing Ass'n CEO
- DOE representative
- County economic chair



Who are they?

- School superintendants
- CATCH member
- Registered nurse
- Argonne physicist
- Fermilab physicist
- Planetarium PR person
- County Board member
- State legislator
- University lecturer



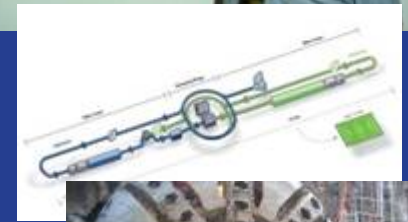
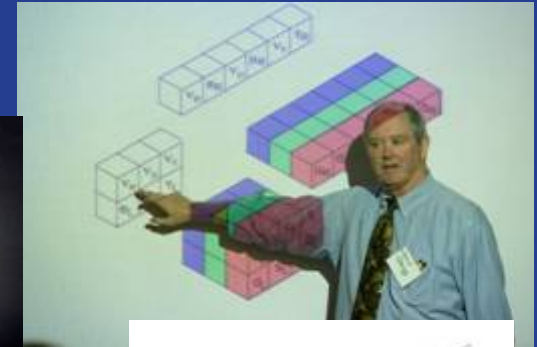
Fermilab ILC Citizens' Task Force

- Monthly meetings
- Professional facilitator
- Open to all
- Frequent press coverage
- “Education” first
- Choose issues



Expert consultants

- Particle physics
- ILC
- Property rights
- Safety
- Environment
- Construction
- Economic impacts
- Governance



Fermilab theorist explains ILC....



...Task Force quickly understands.

ILC @ Fermilab: not a simple problem

- LHC results?
- Cost? \$, €, ¥, £
- US government commitment to pay half the cost?
- Participation by other nations?
- International governance?



Great questions!

- Why do we need the ILC **AND** the LHC?
- Practical applications?
- What would happen to Fermilab without the ILC?
- Property rights?



Task Force alchemy

- As the months passed, the Task Force formed a cohesive group.
- Lively--sometimes hilarious--meetings
- Members pleased to be part of the ILC process, confident Fermilab would hear what they had to say



November 2007: Issues to address

- Bringing the ILC to Fermilab
- Community outreach
- Siting the ILC
- Off-site facilities
- Construction
- Safety and public health
- Environment
- Economics
- Political concerns

December 2007: Big problems for ILC

- Large funding cuts in US and UK
- Department of Energy asks for alternate plan
- Fusion funding cuts underscore unreliability of US as partner in big science projects
- ILC at Fermilab begins to seem remote
- Would task force want to continue?

“We signed up to do a job.”



Fermilab Task Force decided to complete its report.

Report complete June 2008

- Local issues:
 - Understand radiation better—soon!
 - Consider how to incorporate community needs into surface buildings (conference rooms, sports fields)
 - Choose site with minimal impact on neighborhoods.
 - Keep the local community informed at every step.



Report complete May 2009



- Need sound US public science policy, long term US science planning
- US must be reliable partner on international projects



Must build and maintain trust locally, nationally and internationally

What Fermilab learned

- Public participation is different from community outreach and education.
- Decisions made with public involvement are better decisions, not just for the community but for Fermilab and for particle physics.
- ILC recommendations apply to ANY big science project.
- Public participation is key to Fermilab's future.

Fermilab's future

- Fermilab hopes to be part of the 21-century adventure of exploring the revolutionary new physics of the universe.
- Our neighbors will share the adventure.

