



Global Strategies for Science Communication

XVI^{me} Rencontres de la Vallée D'Aoste

March 2002

Judith Jackson, Fermilab

“We are with you.”



September 12, 2001

Dear Judy,

I want to say that we are all with you in these days. I myself can't find the right words to express my feeling after this terrible September 11Judy, from my point of view NOW it's absolutely important that we HEP outreach people round the world will meet as soon as possible, not only to figure out how to help international particle physics stay alive, but also how we, in our field of activity, can set visible footprints for the significance of peaceful collaboration across all borders.

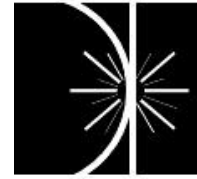
Petra

A new era



- The science of particle physics has embarked on an extraordinary 21st century voyage of discovery that promises to revolutionize the way we understand the nature of the universe.
- To realize the promise of that voyage of discovery, we must also create a revolutionary new 21st century vision of strategic science communication.

Communication opportunities



- Extraordinary science is just ahead in particle physics.
- The tools of particle physics—accelerators and detectors—push the frontiers of advancing technology.
- Particle physics is a completely international field—physics without borders.

More opportunities



- After 40 years of experience, particle physicists are good collaborators.
- Momentum is gathering for some form of world laboratory.
- Particle physicists do understand the need to change the way they communicate.

Communication challenges



- The excitement of particle physics is hard to communicate.
- We have chosen a field that requires very expensive tools that only governments can fund.
- Our science is international, but our science communication is not.

More challenges



- Collaborations produce great physics —but not always great communication.
- The obstacles to a world laboratory are (mostly) not technical challenges but human issues.
- Particle physics does not come from a culture of communication.

Particle Physics? Huh?



- The excitement of particle physics is hard to communicate.
- Jack Marburger: “From time to time the discoveries of new particles and new symmetries...have made headlines, but they never fascinated the public the way supernovas, black holes and pulsars did.”
- What have you done for me lately?

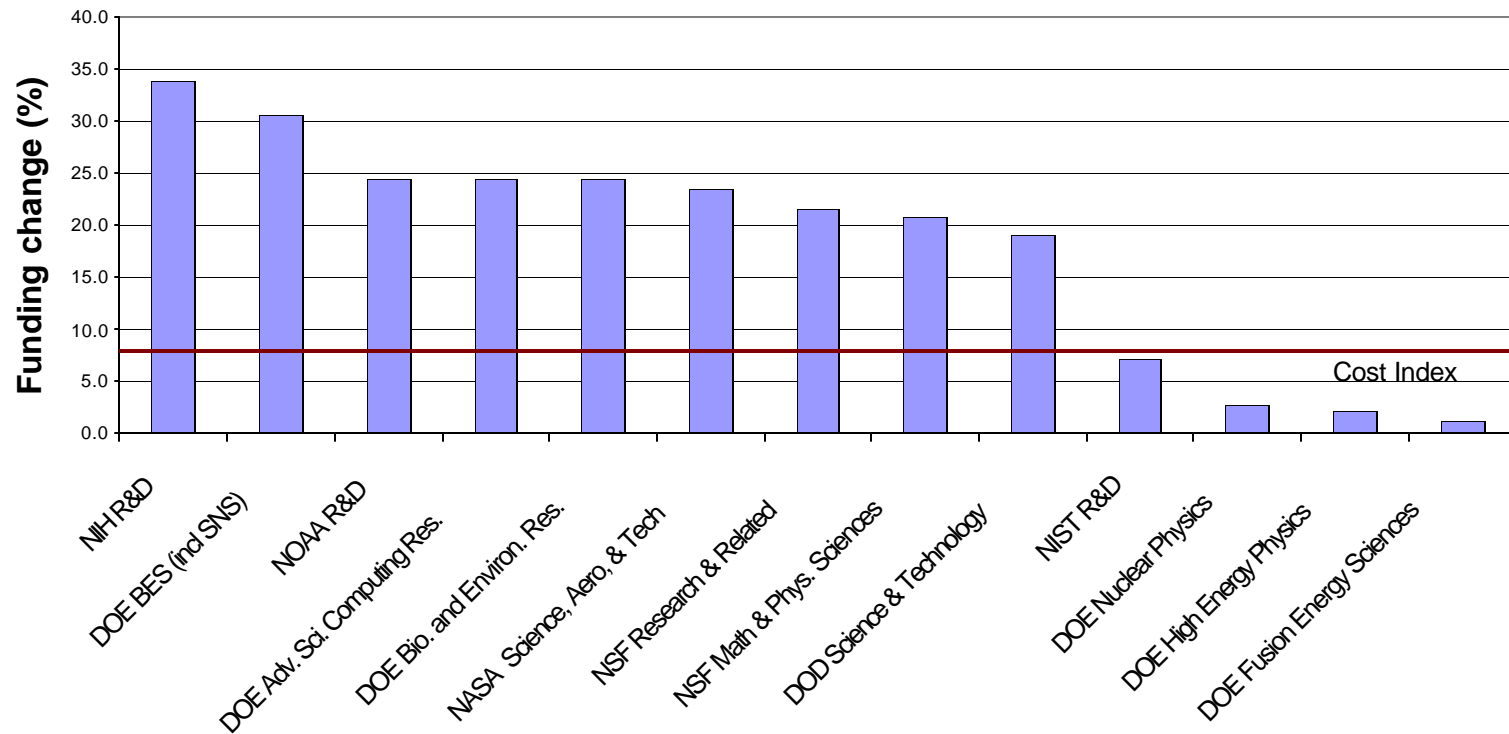
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- We have chosen to devote ourselves to a field that requires very expensive tools.
 - Champagne taste, Pepsi-Cola pocketbook
 - Every day, something happens in Washington that influences the U.S. ability to do high-energy physics in the coming year.
 - DC staffer: “Can’t you do something for a billion? A billion I could do for you.”



Change in funding from FY2000 to FY2002

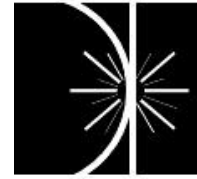


We're in this together.



- Our particle physics collaborations are international, but our particle physics communication is—usually—local.
- Every lab and every region communicates for itself.
- When CERN sneezes, Fermilab gets a cold.

Collaboration ¹ Communication



- Collaborations produce great physics—but not always great communication.
- No good deed goes unpunished.
- We are big science.



Good news or bad for CDF and HEP?



What world laboratory?



- Technical issues we can solve, but what about the human issues?
- Politics, economics, sociology
...and communication.
- “If physics issues had forced us to put accelerators into space, we would have solved these issues long ago.”
--Albrecht Wagner

We're no NASA.



- Particle physics does not come from a culture of communication.
- U.S. funding agencies such as NASA and NSF have communication built into their missions—and into their funding. Not the Department of Energy, the “home” of most U.S. particle physics.
- “Outreach” and “strategic communication”:
What’s the difference?

Up from the hinterlands



- “Today the frontiers of the large and the small—of astronomy and astrophysics—remain unconquered. ...We can no longer expect that society will benefit materially from the phenomena we discover in these remote hinterlands....”

Jack Marburger, Science Advisor to President Bush

- To have the kind of future that all of us want for particle physics, we must change the way we communicate.

We can change.



- We can learn to communicate strategically in particle physics.
- We can begin now to think about communication in a different way.
- We can influence our future—
but not by “business as usual.”

We can change.



- Think strategically.
- Tell the REAL story of particle physics.
- Tell our human stories without fear of death at the hands of our colleagues.
- Make communication part of our experiments and projects.
- Make our communication as collaborative as our experiments.

Think strategically.

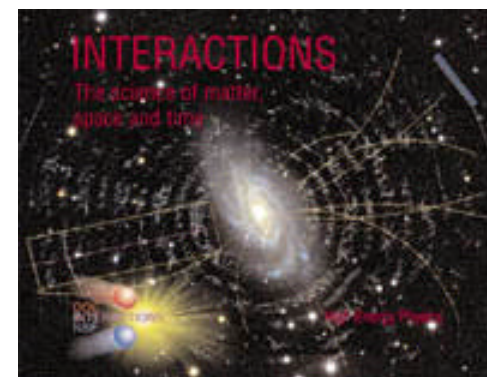
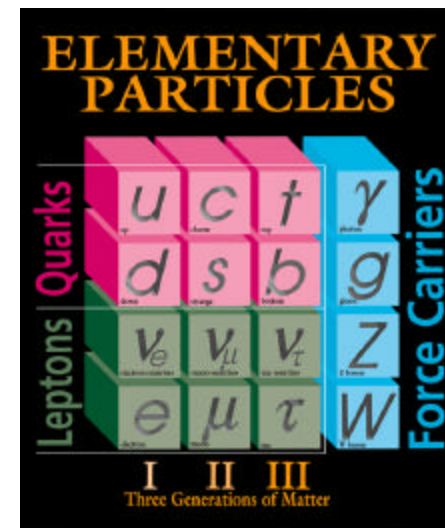


- What are our objectives?
- Who are the key audiences?
- What is our message?
- How can we get our message across to the key audiences?

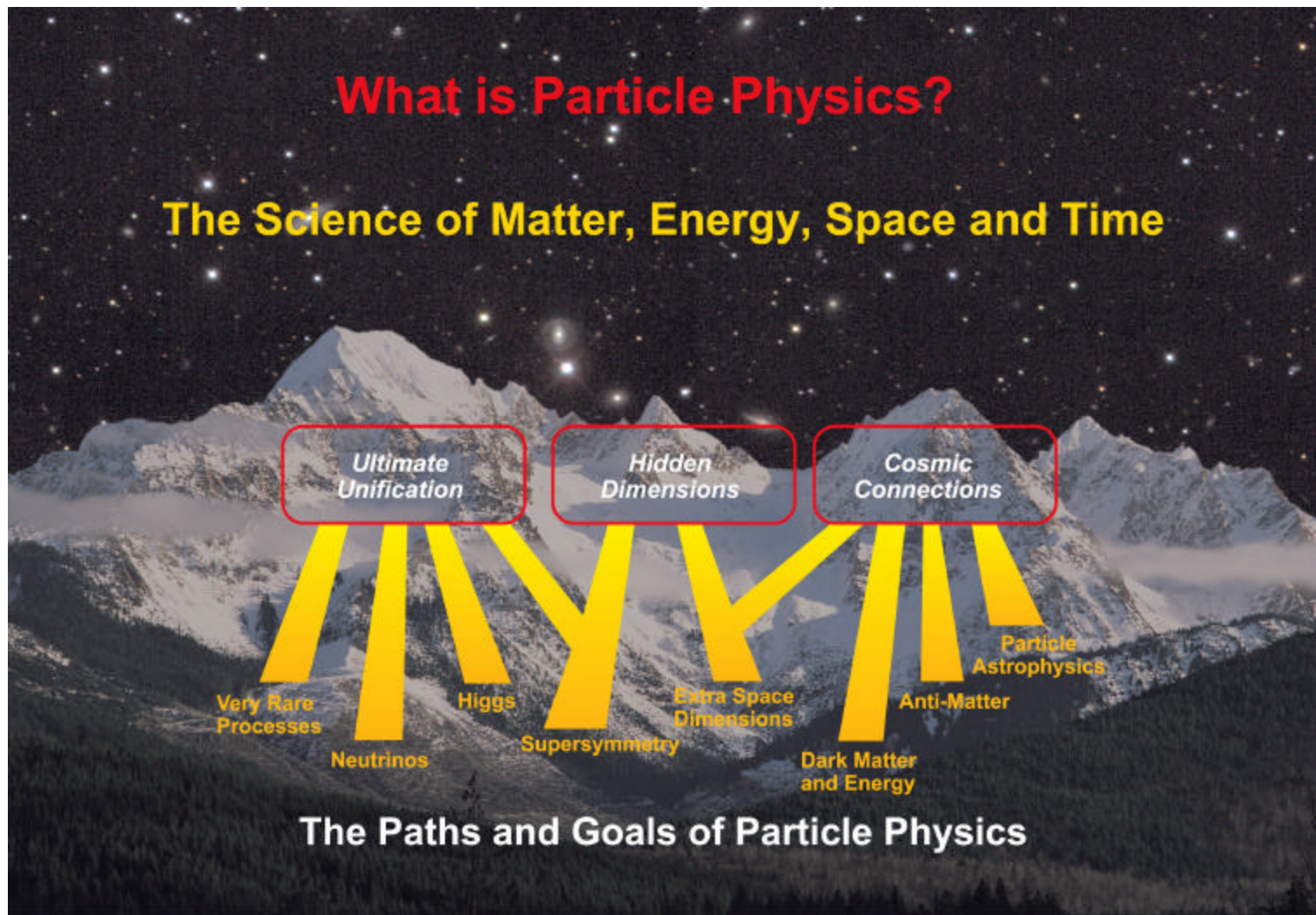
The REAL story.



- Not just another boson on a particle chart, not merely one more riff on the Standard Model, but a revolution in understanding nature.
- The science of matter, energy, space and time.



More than particles



We are big science.



Fermilab

FERMILAB-Pub-01/355-E
November 13th 2001

Υ Production and Polarization in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV

Abstract

We report on measurements of the $\Upsilon(1S)$, $\Upsilon(2S)$ and $\Upsilon(3S)$ differential cross sections $(d^2\sigma/dp_T dy)_{y=0}$, as well as on the $\Upsilon(1S)$ polarization in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV using a sample of 77 ± 3 pb $^{-1}$ collected by the Collider Detector at Fermilab. The three resonances were reconstructed through the decay $\Upsilon \rightarrow \mu^+\mu^-$. The angular distribution of the muons in the $\Upsilon(1S)$ rest frame is consistent with meson production.

PACS numbers: 13.85.Ni, 14.40.Gx

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M. B...



Fermilab

FERMILAB-Pub-01/349-E December 2001

Search for Leptoquark Pairs Decaying to $\nu\nu +$ jets in $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV

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D. Edmunds,³⁰ J. Ellison,³⁴ J.T. Eltroth,⁵⁰ V.D. Elvira,²⁶ D....

Every author has a story.



Fermilab

FERMILAB-Pub-01/349-E December 2001

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Who knew?



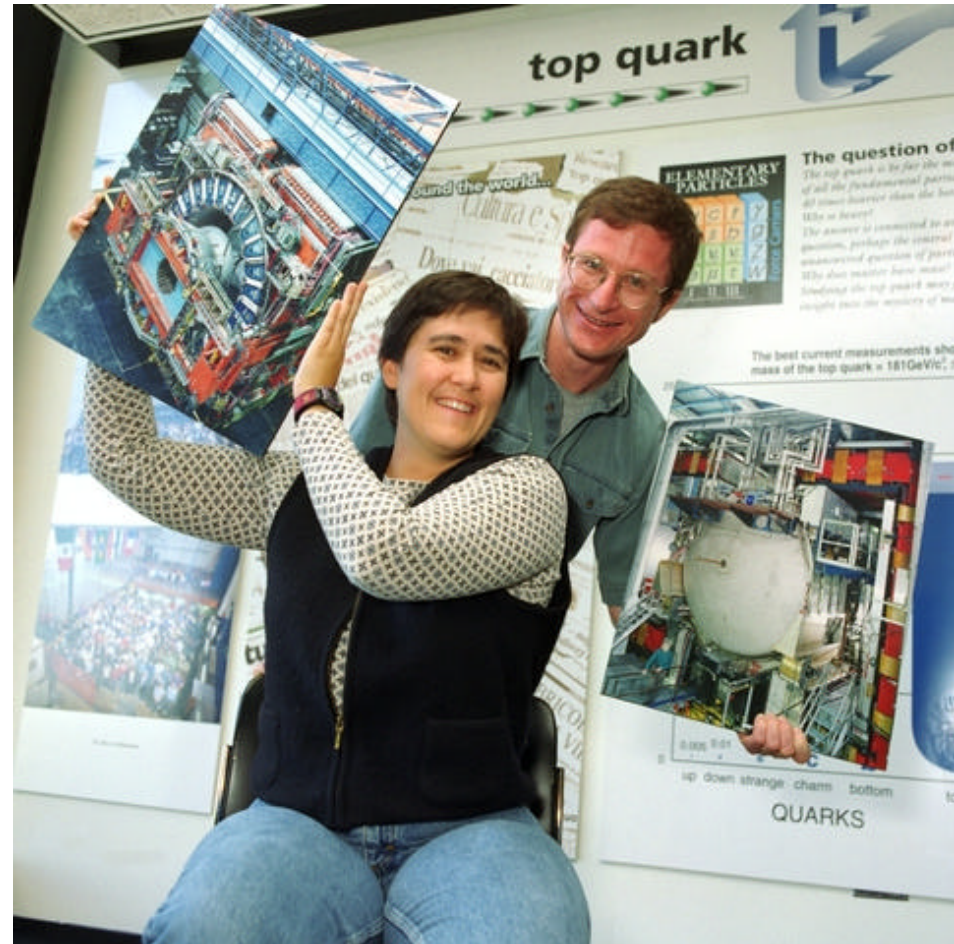
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43 D. Hedin,³⁸ J.M. Heinmiller,³⁷ A.P. Heinson,³⁴ U. Heintz,⁴⁷
44 B. Hoeneisen,⁸ Y. Huang,⁴⁹ I. Iashvili,³⁴
28 K. Johns,²⁹ M. Johnson,³⁶
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ddy¹⁹ K. Einsweiler²⁴ J. E. Elias¹² E. Er
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Giannetti³⁵ P. Giromini¹⁴ V. Glag
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is¹³ C. Haber²⁴ S. R. Hahn¹² C. Hal
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Hauser¹⁶ J. Heineke

Tell our human stories.



- We are good collaborators, but we are also individuals with individual human stories.
- Reporters need plot and character to create interesting stories for their readers.



Build in communication.



- Remember BTeV. Don't wait until trouble finds you.
- Make communication part of your experiment's scientific goals from the beginning.
(This will not be not easy.)

Communication without borders.



We need international physics communication to support international physics collaboration.



Communication without borders



- December 6-7, Hamburg:
DESY, SLAC, CERN, Gran Sasso, Fermilab
Brookhaven met to form an international
collaboration for HEP communication
- Now: Also KEK, Berkeley, Jefferson Lab

Communication without borders



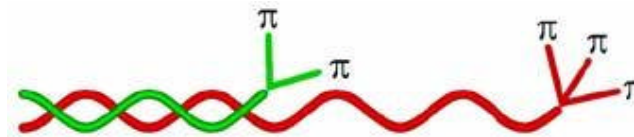
- International **C**ollaboration for **S**cience **C**ommunication
- World “image bank” on common website
- Press release coordination
- Staff exchanges
- Communication on the agenda at physics conferences (!)

Finally!

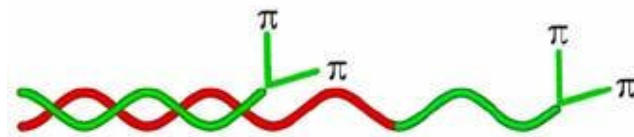


A good graphic representation of the difference between direct and indirect CP violation, courtesy of Phil Schewe at the American Institute of Physics.

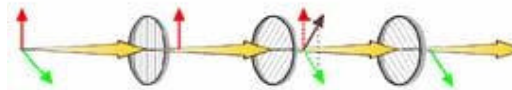
Put it in the bank! (The World Image Bank of Particle Physics)



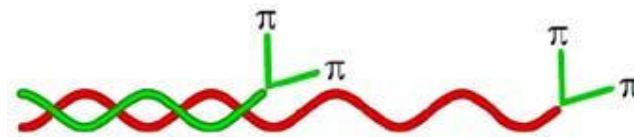
(a) Kaon Mixing



(b) Indirect CP Violation



(c) Polarized Light Analogy



(d) Direct CP Violation

A website for all of us?



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Communication without borders



“Not only to help international particle physics stay alive, but also how we, in our field of activity, can set visible footprints for peaceful collaboration across all borders.”

