



# New media for a global message

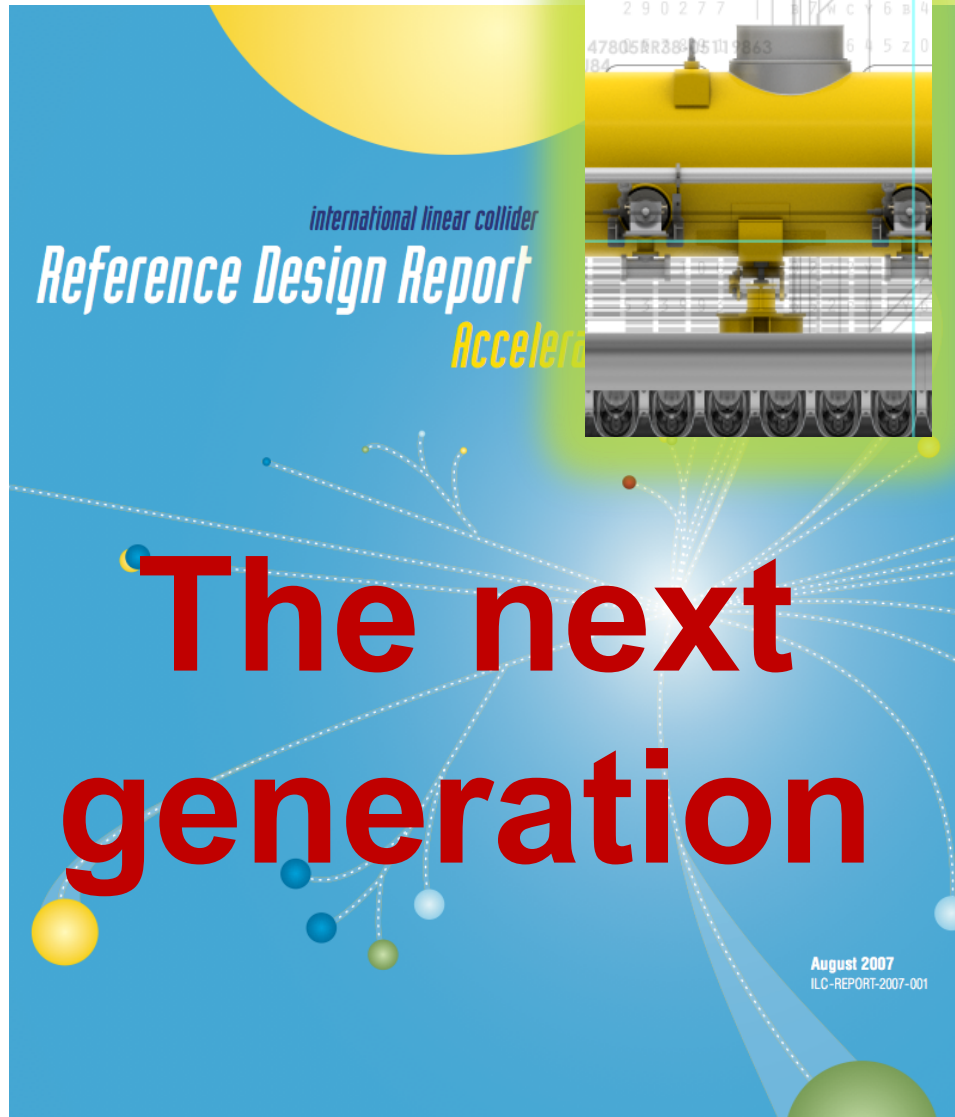
Leah Hesla  
19 March 2011

communicating at ALCPG11



# Forward-thinking

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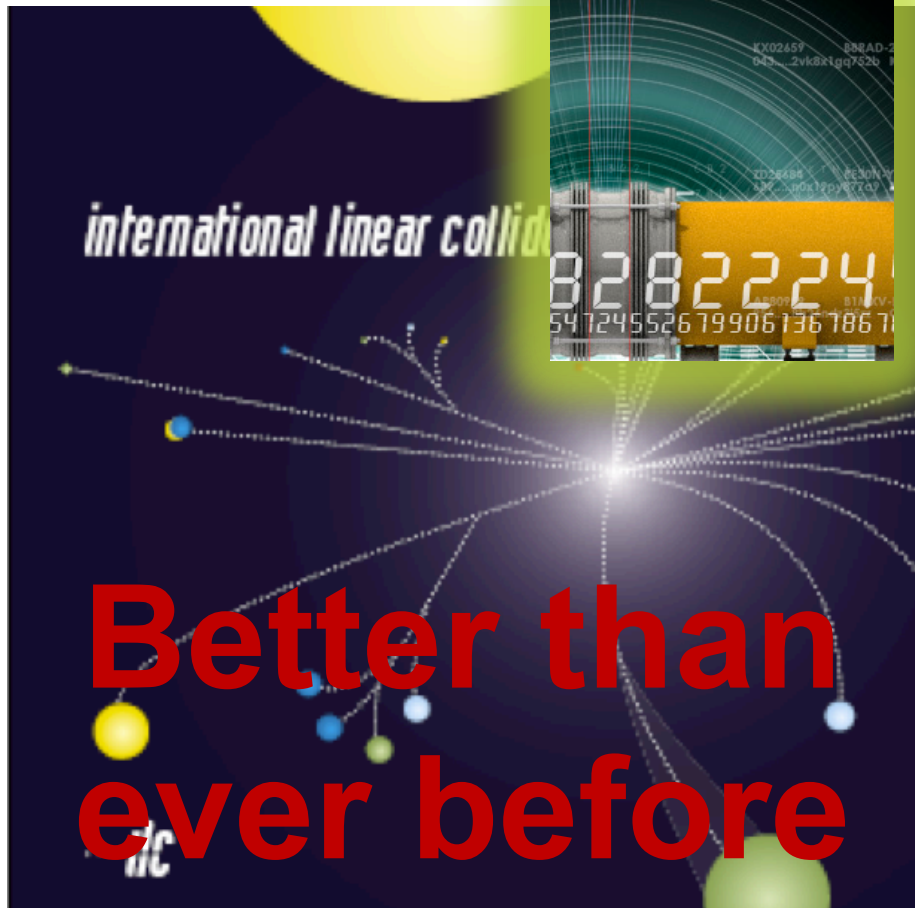
Interim reports  
to be released this year

GDE: *The International Linear Collider: a technical progress report*

Physics & Detectors: interim report for *Detailed Baseline Design Report*

Will be distributed widely and made available on [linearcollider.org](http://linearcollider.org)

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## Brochure to be published this year

Pull-out brochure based on  
interim report

Compilation of lay language  
chapter summaries

Will be distributed widely and  
made available on  
[linearcollider.org](http://linearcollider.org)

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### Feature: Next global ILC meeting in Eugene, US, 19-23



Scientists from around the world will Collider Workshop and Global Design to 23 March. Hosted by the American conference will highlight the latest re including advances in accelerator res strategy. Eugene will also be host to where six physicists will compete for and entertaining imparter of particle

[Read more about the conference f conference programme](#)

Features on  
linearcollider.org homepage

Features updated weekly

ILC *In the news* updated regularly

Calendar always updated

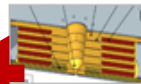
Image bank always updated

#### Features

##### Flux concentrator flexes its muscle

The ILC's flux concentrating magnet operates much like someone a high intensity interval workout: it fires for only a small fraction of the time, but when it does, it makes a bang. Scientists Lawrence Livermore National Laboratory have finished the design work for assembling the flux concentrator, modeling operation and potential hurdles.

[Read ILC NewsLine](#)



##### Europe's HE infrastructure carrying polishing industrialisation

What are the European high-energy infrastructure for the next four years? What kind of ultra-fine polishing method do Fermilab scientists develop for the interior walls of accelerating cavities? How does SCRF industrialisation carry through? This week's NewsLine will reveal everything.

[Read ILC NewsLine](#)



Current.  
Updated.



# Outreaching

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Feature Story

**From Symmetry Magazine: Global from the get-go?**

Experiments in particle physics have decades of experience as thoroughly international collaborations. Can the giant accelerators that power these experiments make the leap to go global as well?



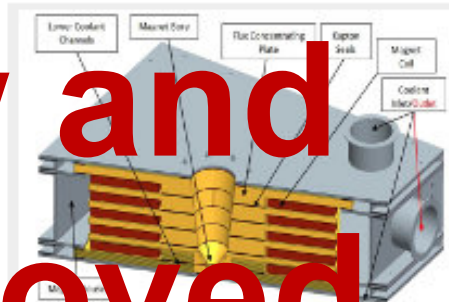
Contributing laboratories from all over the globe placed their stamp on Cryomodule I, part of a setup at Japan's KEK for testing components for the proposed International Linear Collider

At a recent meeting of scientists at CERN on the border of France and Switzerland, a physicist recalled words of wisdom imparted to him by a

Around the ILC  
CURRENT ISSUE

**The millisecond challenge of the flux-concentrating magnet**

Scientists complete the design of a crucial component of the ILC positron source, the flux-concentrating magnet.



...you see the flux-concentrating magnet. Image courtesy of Jeff Gronberg.

A lot can happen in a millisecond. Major news agencies compete over milliseconds to be the first to publish breaking stories. In one millisecond, light travels from Geneva, Switzerland to Genoa, Italy.

[Read more...](#)

New and improved

# New ILC NewsLine to debut next week

Intuitive navigation and searchability

High integration of content

Inviting interface

Maura Barone,  
Kevin Flannery, David Seigle



*Gateway to the  
Quantum Universe*

published in English and in  
Japanese in 2008

Now also in

Chinese

French

German

Italian

Korean

Russian

Spanish

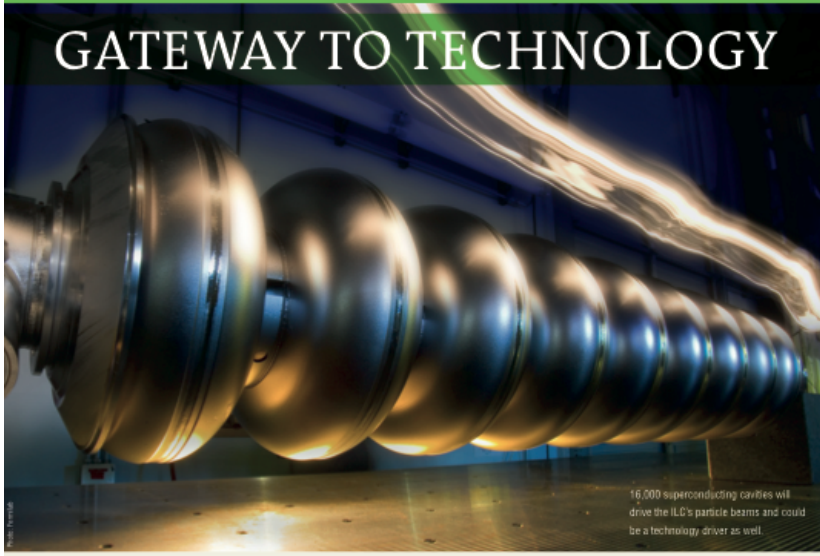
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# THE INTERNATIONAL LINEAR COLLIDER

## GATEWAY TO TECHNOLOGY



16,000 superconducting cavities will drive the ILC's particle beams and could be a technology driver as well.

Humankind has always been driven by the desire to understand the world in which we live. The tools invented by scientists to gain this understanding in turn yield applications that benefit all of society and play a major role in the global economy.

Particle physics has been the source of many innovations not originally part of the quest for understanding the Universe. Many of these – medical diagnostics and therapy and the World-Wide Web are two striking examples – have changed the way we live and do business. Particle physicists continue their quest, and history tells us that the tools of the future should be the source of yet more technological breakthroughs, driving progress in industry and securing the workforce of the future. One of these tools is the proposed particle accelerator, the International Linear Collider or ILC.

Using unprecedented technology, the 31-kilometre-long ILC will hurl electrons and their anti-particles, positrons, toward each other at nearly the speed of light to collide 14,000 times every second at energies of 500 billion electron-volts. With the ILC, discoveries are within reach that could stretch our imagination with new forms of matter, new forces of nature, new dimensions of space and time and bring into focus Albert Einstein's vision of an ultimate unified theory.

Fundamental research is not done with the aim to make computers even faster, chips even smaller or medicine even better. We cannot be sure where the research into nature's most fundamental constituents will take us, and likewise cannot be sure what beneficial innovations will emerge. However, the track record makes us confident that technological advances will occur, in one form or another.

## *Gateway to Technology*

available in

- Chinese
- English
- French
- German
- Italian
- Japanese
- Korean
- Russian
- Spanish

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## Ask a scientist

Do you have a specific question about the International Linear Collider to know more about its dimensions, qualities, or how to improve our understanding of the universe? If so, type in your question and post the answers here soon! Please provide your full name, address, and country of residence when submitting your question.

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*How many particles in a bunch? Is there a set of initial conditions to determine the size of the bunch? I have read articles but never a particle amount or energy assigned to the bunch.*  
[See the answer...](#)

*Is the International Linear Collider still in consideration?*  
[See the answer...](#)

*I know one potential site for the ILC is Fermilab in Illinois. Are there other sites for the ILC?*  
[See the answer...](#)

*What is the benefit to invest in a project such as the International Linear Collider, specifically the Superconducting Super Collider, was cancelled?*  
[See the answer...](#)

linearcollider.org

Ask a scientist

a conduit between you and

the curious enthusiast

student

researcher

fellow scientist

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## Share functions in *ILC NewsLine*



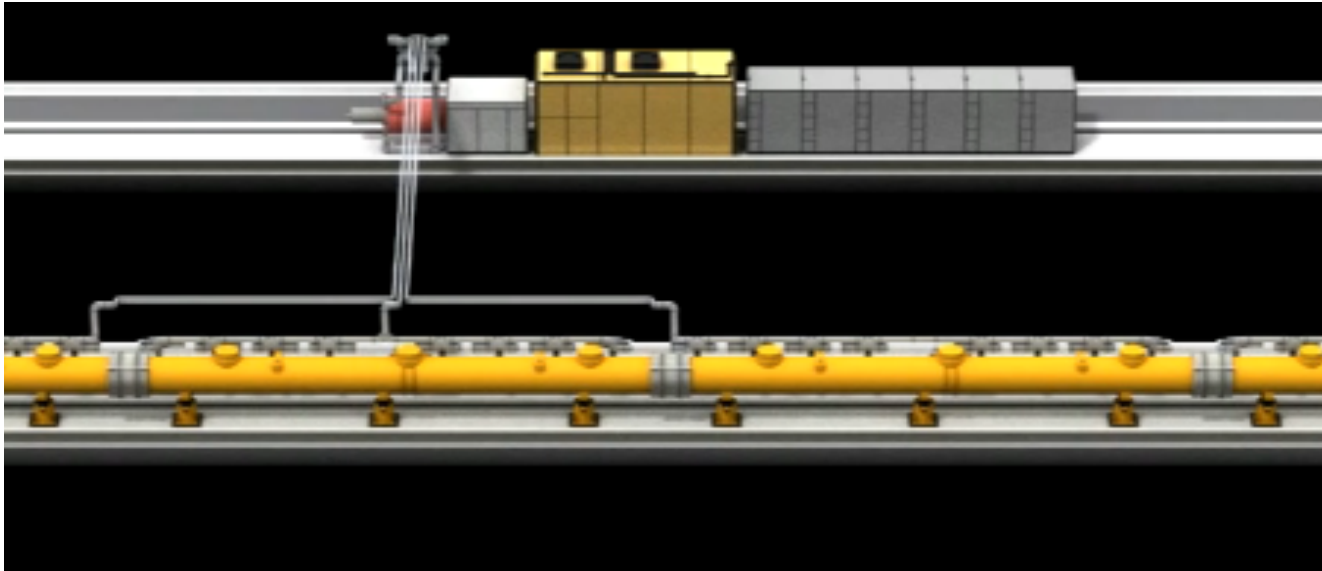
Every issue is subscribable  
through RSS and email

Every story is shareable

Every story is commentable

## RECENT COMMENTS

Logged in as Leah Hesla. Log out?



## Animation on [linearcollider.org](http://linearcollider.org) homepage

Easy-to-understand illustration of how the ILC works for non-technical audience

Starting point for future such projects

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## Public events

### Physics for a lay audience

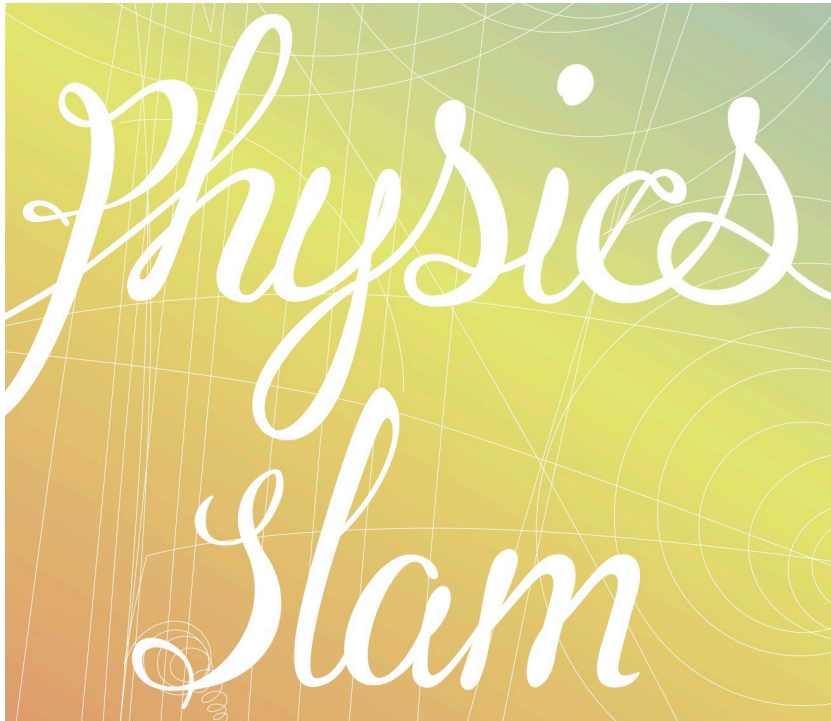
Public lecture at  
LCWS09 in Albuquerque

Particle physics slam at  
ALCPG11 in Eugene

This Tuesday, 7:00 p.m.

Columbia 150

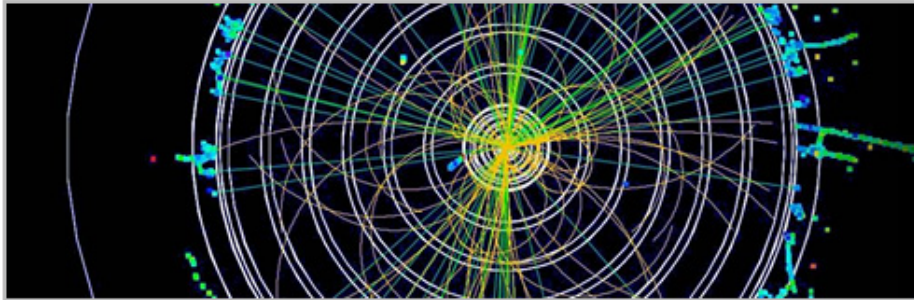
<http://particleslam.uoregon.edu/>





# Better-looking

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Logged in as: Leah Hesla II [Log Me Out](#)

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- Images
- Jobs

**ILC NewsLine**

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Subscribe to *ILC NewsLine*!

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([English](#) – [Japanese](#))

**Feature: Next global ILC meeting**

ALCPG11  
**LINEAR COLLIDER WORKSHOP** OF THE AMERICAS  
Eugene, Oregon USA

**Features**

**Flux concentrator flexes its muscle**  
The ILC's flux-concentrating magnet operates mu someone in a high-intensity interval workout: it fire small fraction of the time, but when it does, it take Scientists at Lawrence Livermore National Labora finished the intense work of designing the flux con

# New linearcollider.org website

Launched in 2010

Intuitive navigation

Comprehensive information

Clear presentation

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## ANNOUNCEMENTS

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### *ILC NewsLine* is getting a makeover

Dear readers,  
Beginning next week, 17 March 2011, *ILC NewsLine* online and email versions will have a new look and feel. You will still be sent a notification email from the same address ([ilcnewsline@ilcgde.org](mailto:ilcnewsline@ilcgde.org)), with [ILC Newsline] and date in the subject line. The email will be

## New *ILC NewsLine* design

Expansive, dynamic design

Web-conscious and flexible layout

Eye-catching graphics and images

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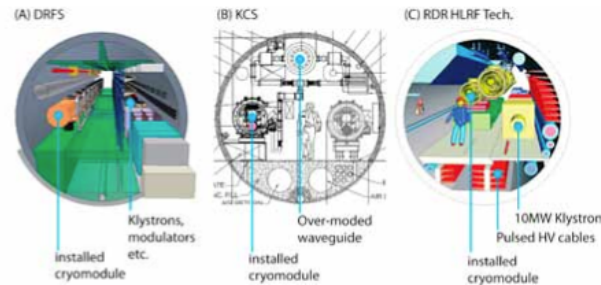




## 4.2 LAYOUT AND DESIGN

**4.2.1 MAIN LINACS** Schematics of the ILC layout are shown in *Fig. 4.1* as (a) proposed in the RDR and (b) with the proposed technical and civil engineering changes for 2010. The primary system parameters that have not changed are those of the main electron and positron linacs, which remain the same length, a reflection of the fact that after extensive review, there is no proposed change in the maximum average accelerating gradient of 31.5 MV/m. The linacs also remain oriented to provide the 14 mrad crossing angle between the two particle beams required at the interaction point. The major change is the removal of the separate so-called 'service tunnel' for the main linacs, in which the radiofrequency (RF) power sources, power supplies and electronics were originally located. This is a significant reduction in underground tunnel volume that benefits both costs and construction schedules.

*figure 4.2* Single tunnel solutions for the main Linacs: (A) Distributed Radiofrequency Sources, where many small modular 800 kW klystrons, modulators and associated power supplies are all installed in the tunnel; (B) Klystron Cluster System, where no active RF is installed in the tunnel, and the RF power is brought to the accelerator via long high-power over-moded waveguide system; and (C) the solution adopted for the European X-ray Free Electron Laser (ILC backup solution), where the 10 klystrons are installed in the tunnel, but driven by surface-located modulators connected via many high-voltage pulsed cables.



Two novel solutions for the RF power systems have been proposed in support of the single tunnel solution – the Distributed RF Sources (DRFS) scheme and the Klystron Cluster Scheme (KCS) – both of which are described in Section 2.5. The two schemes represent quite different solutions for the single-tunnel design and have emerged due to detailed considerations of differing site-specific constraints (see Figure 4.2). Both solutions offer an efficient use of space for the RF power sources and associated power supplies, either in the accelerator tunnel itself (in the case of DRFS), or in surface buildings (KCS). Although these alternate RF power designs appear practical, there is ongoing R&D to demonstrate their performance and cost. As a risk-mitigating measure, a single-tunnel solution based on the RDR/European European X-ray Free Electron Laser-type solution is still considered as a backup.

# New report design

Clean, elegant layout by  
Form One

Rocking cool cover by  
Rey.Hori

Filled with illustrations by  
you

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Forward-thinking  
Outreaching  
Better-looking

all in the service of...

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2,200 *ILC NewsLine* subscribers

10,000 unique online visitors per month - China, France, Germany, Italy, Korea, Japan, Russia, Spain, Switzerland, UK, US and others

2,000+ linear collider community members

Anyone who wants to learn about the wonderful world of particles



## Unified message

Particle physics addresses unanswered questions about the universe.

The next big particle smasher will be global.

We collaborate with ‘competitive’ projects for the best possible synergies.

Spin-offs already exist (though it isn’t the goal!).

The ILC could be built tomorrow, but we strive to improve technologies and cost.



## Internal communication tools for you

Submit stories and story ideas for *ILC NewsLine*

How can we help you?

[communicators@linearcollider.org](mailto:communicators@linearcollider.org)



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