

January 10, 2020, Saclay

# **ILC Status in Japan**

**SCJ Master Plan, Local Activities, etc.**

Keisuke Fujii

KEK

# **On-going Effort to realize ILC**

# ***MEXT's view in regard to the ILC project Executive Summary***

***March 7, 2019***

***Research Promotion Bureau, MEXT***

- ***Following the opinion of the SCJ, MEXT has not yet reached declaration for hosting the ILC at this moment. The ILC project requires further discussion in formal academic decision making processes such as the SCJ Master Plan, where it has to be clarified whether the ILC project can gain understanding and support from the domestic academic community.***
- ***MEXT will pay close attention to the progress of the discussions at the European Strategy for Particle Physics Update.***
- ***The ILC project has certain scientific significance in particle physics particularly in the precision measurements of the Higgs boson, and also has possibility in the technological advancement and in its effect on the local community, although the SCJ pointed out some concerns with the ILC project. Therefore, considering the above points, MEXT will continue to discuss the ILC project with other governments while having an interest in the ILC project.***

***highlight in red by KF***

# **KEK's Plan shown at the Lausanne Meeting**

<https://indico.cern.ch/event/789524/timetable/#20190408.detailed>



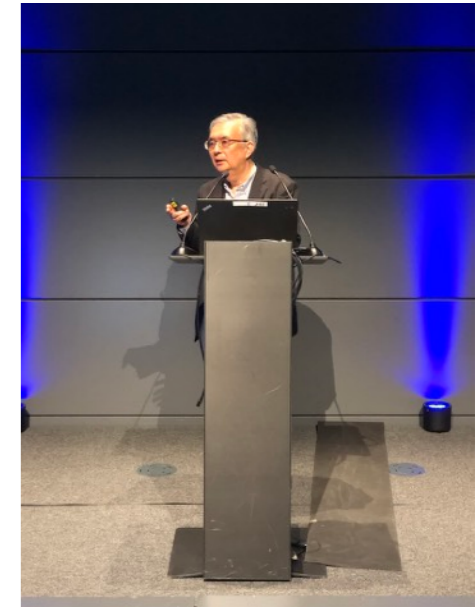
# **KEK presented its plan for the ILC project in Lausanne**

2019/04/12

<https://www.kek.jp/en/newsroom/2019/04/12/1700/>

Masanori Yamauchi, Director General of KEK, made a presentation regarding KEK's plan for the ILC, at the international conference held on **8-9 April 2019** in Lausanne, Switzerland.

About 100 scientists from around the world who aim for the realization of electron-positron linear colliders gathered at the Linear Collider Community Meeting, to discuss the future linear collider activities.



**Masa explaining his plan in a Lausanne session**

In the conference, Yamauchi presented KEK's plan for the ILC for the upcoming year, summarized as follows:

- **Organize the *international working group* with close consultation with the Ministry of Education, Culture, Sports, Science and Technology (MEXT).**
- **Promote activities to gain a better understanding of the broader academic community in Japan (Propose the ILC project to *the Science Council of Japan's Master Plan*; Organize a symposium)**
- **Cooperate with MEXT to establish the *governmental level discussion groups with France and Germany*. Also, strengthen the discussion group with the US DOE.**
- **Conduct *technical development program at ATF, STF and CFF facilities* collaborating with the international teams**

.....

KEK's plan is in accord with the ICFA statement and MEXT's view, and illustrates the specific steps that will be taken by KEK toward an early realization of the ILC. The result of the discussions at the Lausanne conference will be used as an input for the discussions of the Update of the European Strategy for Particle Physics.

# **ILC International Working Group Established -- First Meeting Held in Granada**

2019/05/21

<https://www.kek.jp/en/newsroom/2019/05/21/1900/>

KEK established the International Working Group on the International Linear Collider (ILC) project to discuss issues such as international cost sharing. The First Meeting of the Working Group was held on Friday, 17 May, in Granada, Spain.

***At the LCB meeting on March 7, MEXT expressed anticipation for establishing an International Working Group, to be led by KEK, in order to advance the discussions by domestic and international communities of researchers on issues such as international cost sharing.***

Following this statement, KEK established the International Working Group, consisting of 2 members from Europe, 2 members from North America, and 3 members from Asia (including Japan)



The Working Group will use [the PIP \(rev.C\) issued on July 2015](#) as a starting point and will further investigate and update the following points:

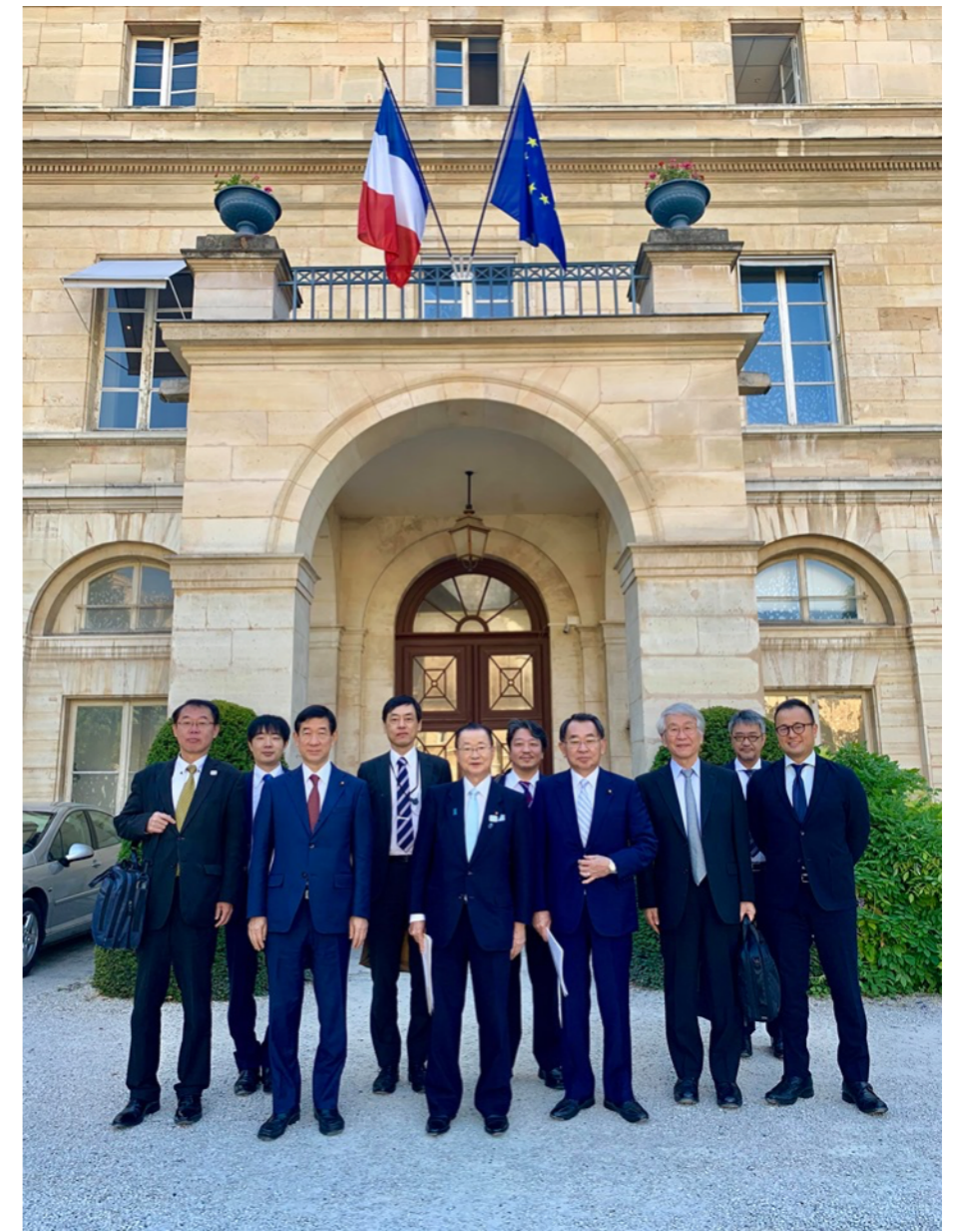
- ***Model of international cost-sharing for construction and operation***  
*Study the ILC250 construction cost and propose a model for the construction describing: (a) items that are appropriate for the host responsibility, and (b) items that should be shared by all partners. Propose a model for sharing the operational and decommissioning cost.*
- ***Organization and governance of the ILC Laboratory***  
*Propose an organizational and governance model of the ILC Laboratory as well as the ILC Pre-Lab.*
- ***International sharing of the remaining technical preparation***  
*Present a technical preparation plan in the preparation phase to solve the technical issues pointed out by the MEXT ILC Panel and the SCJ committee, including the possibility of international cooperation.*

The WG is requested to submit a report to the KEK DG by the end of September 2019. The report will be submitted to MEXT and will be used by MEXT for discussions with other governments.



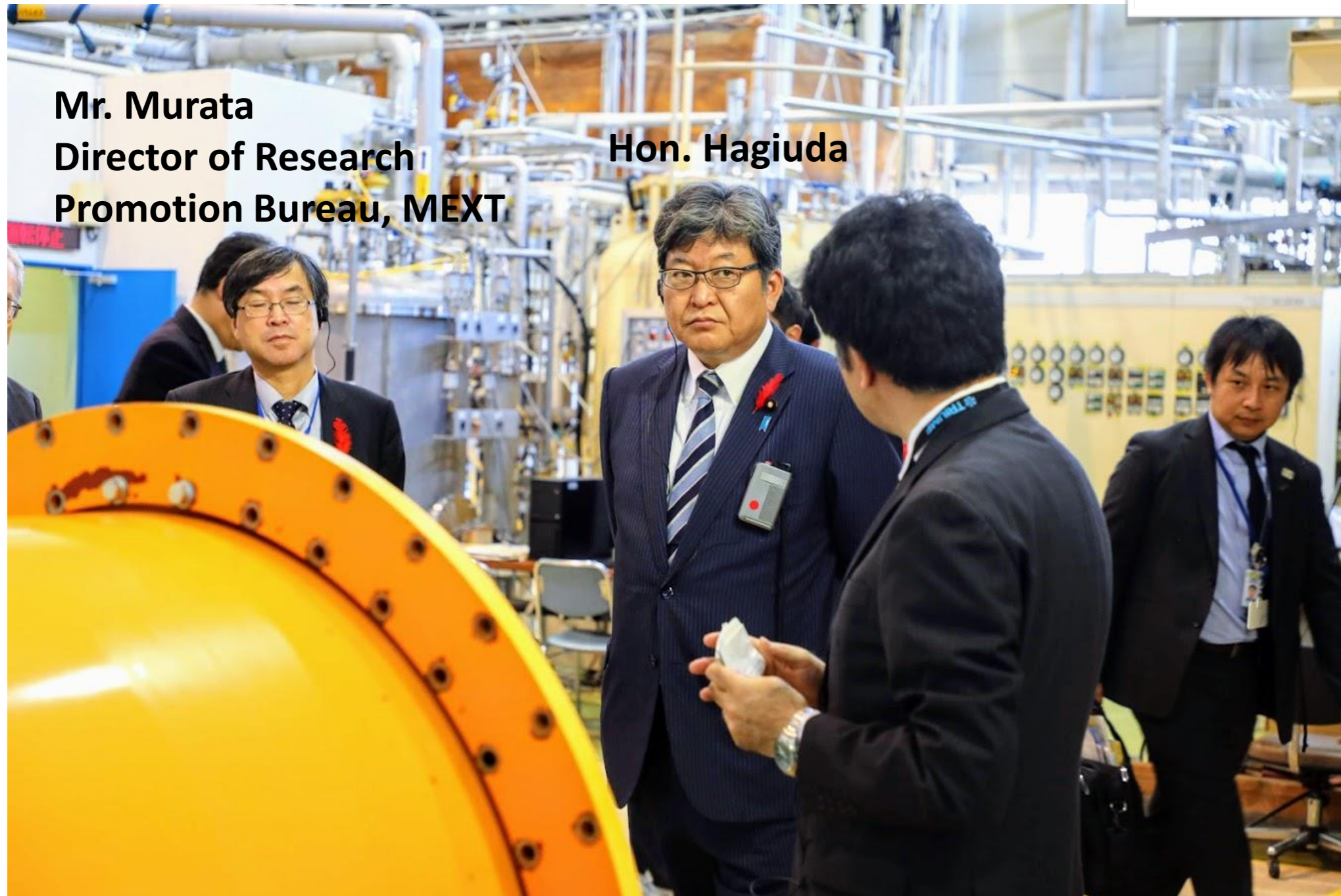
# Progress of International Discussions

- **The KEK International WG (IWG)** submitted its report to KEK DG. The IWG report is published as a KEK report available from <https://www.kek.jp/en/newsroom/2019/10/02/1000/>  
→ **ILC Pre-lab discussion starting.**
- **Governmental level Discussion Groups** with France and Germany have been set up and starting. The IWG Report includes **technical preparation plan**.  
→ **The IWG report is to be used for their discussions.**
- As for ESU, **Physics Briefing Book** published, available from <http://cds.cern.ch/record/2691414>





From Masa's talk at LCWS2019



The new MEXT minister visited STF/KEK as soon as he took his office together with the Director of the Research Promotion Bureau, MEXT.

# ***New MEXT Minister***

***answering questions about ILC in a press interview***

Mr. Koichi Hagiuda, new MEXT minister, said “We should definitely find partner countries, and **if the financial prospects are clear, lots of research should be done in Japan.**”

He also said “While MEXT recognizes the project’s necessity at a certain level, the required budget is immense. There are issues for a single country to cover this burden, also considering the scale of the project.” He added that “It is usually the case [for the concerned countries] to contribute money, and then construct, operate, and manage the project. **We should definitely find countries willing to become partners, and if the financial prospects are clear, lots of research should be done in Japan.**”

Concerning the pleas by parliamentary groups, local authorities, and others to the Japanese government, asking for an explicit expression of interest to host the project in Japan, he stated “I am aware of the requests. **I intend to make an effort to create a team in consultation with the relevant organizations.**”

**Iwate Nippo on Sep. 26**



# LCWS 2019 in Sendai

## October 28 - November 1

<https://agenda.linearcollider.org/event/8217/timetable/?view=standard>



**>400 participants**

**Sendai Statement**

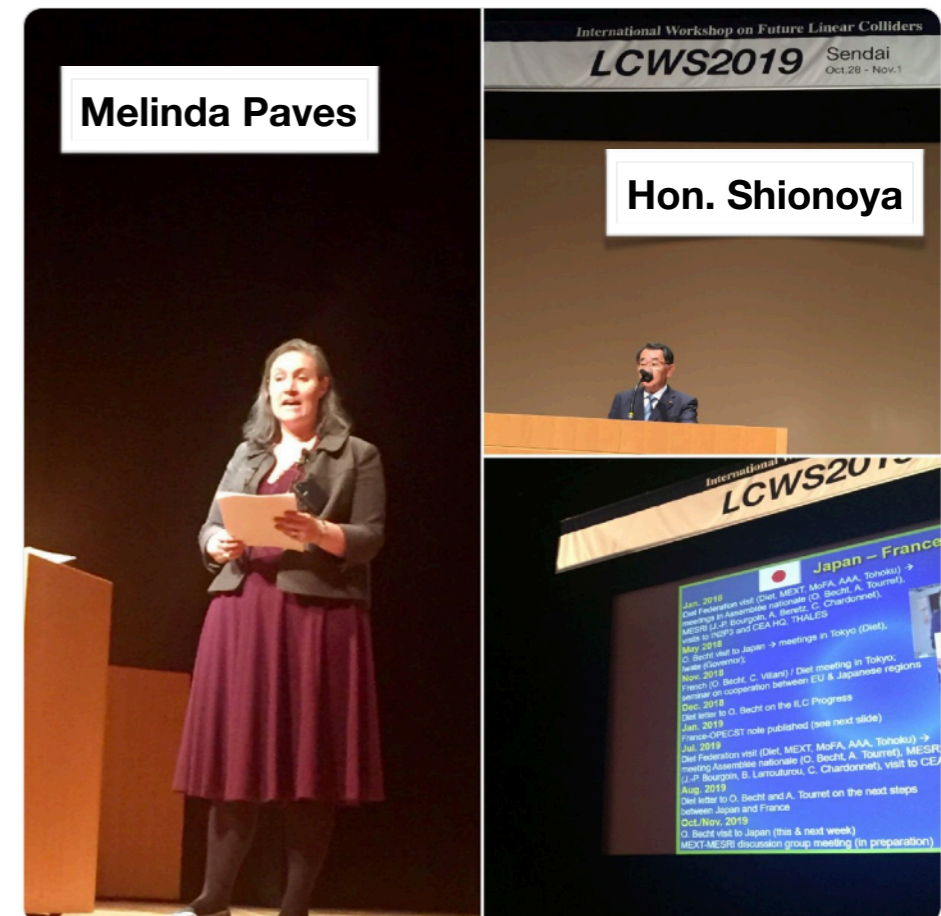
<https://www.kek.jp/ja/newsroom/2019/11/01/1330/>

Speeches by Melinda and Shionoya are available from the LCWS 2019 agenda page



フォローする

Embassy speaker Melinda Pavek emphasized U.S. support for Japan hosting the International Linear Collider (ILC). The ILC facility is the critical next step to advance humanity's understanding of matter, energy, and the origins of the universe.



19:05 - 2019年11月4日



## **Statement toward the realization of the ILC: ‘Sendai Statement’**

Scientists from many countries and regions are now gathered at the International Workshop on Future Linear Colliders (LCWS2019) in Sendai, Japan. Together with colleagues from around the world we hereby issue the ‘Sendai Statement’:

### ***We reaffirm the importance of ILC construction.***

In statements at previous LCWS meetings we have called for the construction of a Higgs Boson Factory as the essential next step towards understanding the Universe. This proposal has become even more compelling in light of the most recent results from the CERN Large Hadron Collider. In March 2019 the International Committee on Future Accelerators confirmed this as the international consensus for the next global project.

### ***The ILC design is mature and ready for implementation.***

The key superconducting acceleration technology has been successfully demonstrated in the European Free Electron Laser (XFEL) in Germany and prototypes have also been developed in Japan, China and the USA. Consequently, the cost estimate is on a sound technical basis. The critical technology required for achieving its design performance has been developed and demonstrated at the KEK Accelerator Test Facility. The ILC design allows the flexibility for it to be upgraded in the future to reach even higher energy and luminosity. The long, productive research program of the initial phase can be extended by exercising this flexibility.

### ***We have strong support from the local community.***

The Japanese Government’s continuing interest in the ILC within MEXT and related ministries and agencies expressed at the ICFA/LCB meeting in March 2019 is highly appreciated as its first official statement. Researchers around the world are also very grateful for the strong and continuous support provided by Japanese Diet members. In addition, through the entire period of this workshop, we have felt the strong support and enthusiasm for the realization of ILC from the Japanese community, particularly in the Tohoku area, as well as Japanese industry.

### ***We are committed to making the ILC a success.***

Given the ILC’s scientific importance, its technical maturity, and the strong support for realizing it in Japan, we, the international community participating in LCWS2019 in Sendai, as well as our colleagues around the world working on ILC, reaffirm our commitment to engage in the construction and scientific exploitation of the ILC as a global project.

- **Melinda's talk at LCWS2019 is now available from**

[https://agenda.linearcollider.org/event/8217/contributions/44502/attachments/35114/54363/Sendai ILC draft remarks-final for Jim.pdf](https://agenda.linearcollider.org/event/8217/contributions/44502/attachments/35114/54363/Sendai_ILC_draft_remarks-final_for_Jim.pdf)

→ **The strong support from the US government should be widely communicated!**

- **Hon. Shionoya's talk at LCWS2019 is also available from**

[https://agenda.linearcollider.org/event/8217/contributions/44436/attachments/35112/54360/LCWS2019 Hon.Shionoya Ryu EN.pdf](https://agenda.linearcollider.org/event/8217/contributions/44436/attachments/35112/54360/LCWS2019_Hon.Shionoya_Ryu_EN.pdf)

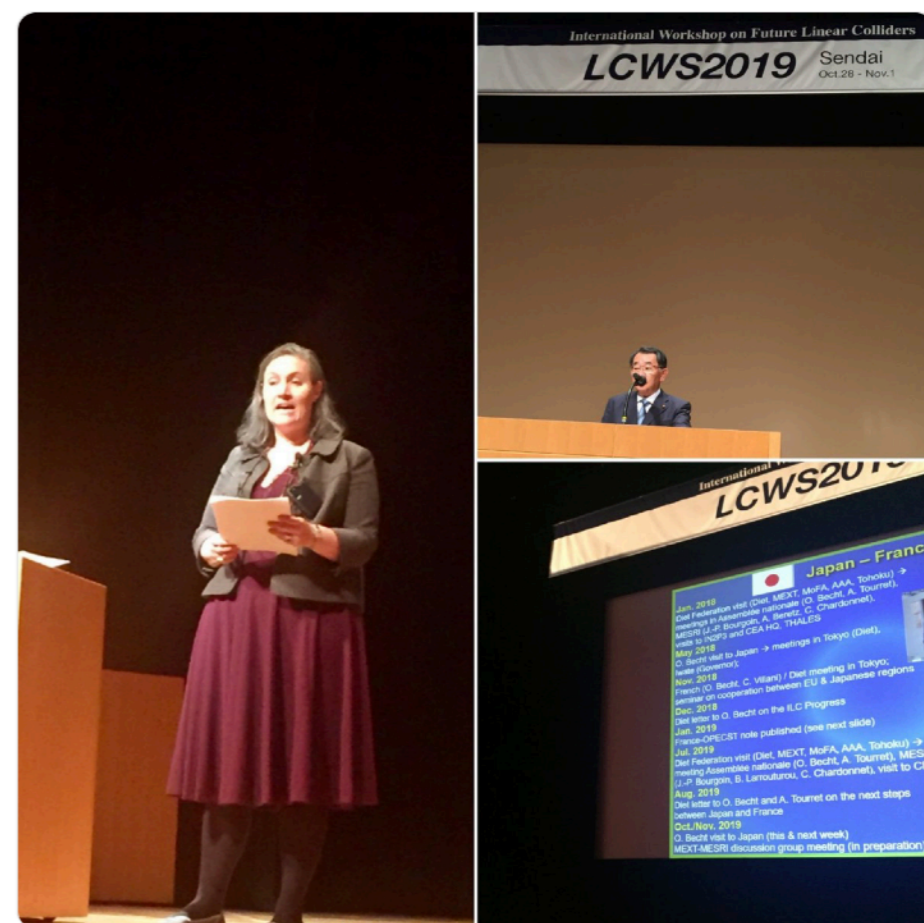
- **Lyn, Goeff, Masa, and others visited MEXT after LCWS2019.**



アメリカ大使館  
@usembassytokyo

フォローする

Embassy speaker Melinda Pavek emphasized U.S. support for Japan hosting the International Linear Collider (ILC). The ILC facility is the critical next step to advance humanity's understanding of matter, energy, and the origins of the universe.



19:05 - 2019年11月4日



- **Inputs from Japan (JAHEP) to ESG on Nov. 6:**  
[http://www.jahep.org/files/ESG\\_Japan\\_Nov06\\_signed.pdf](http://www.jahep.org/files/ESG_Japan_Nov06_signed.pdf)
- **Further 7-page input document from Japan to ESG on Dec. 13, regarding local developments and regional efforts.**  
[http://jahep.org/files/input\\_JapanHEPC\\_20191213.pdf](http://jahep.org/files/input_JapanHEPC_20191213.pdf)  
**KEK DG was there.**
- **Expert panel for “Strategic Environmental Assessment” and Study group for “Economic Ripple Effects” set up and working @ KEK**
- **Joint committee with Japan Society of Civil Engineers for CFS review set up and working (KEK-Tohoku ILC Promotion Council).**

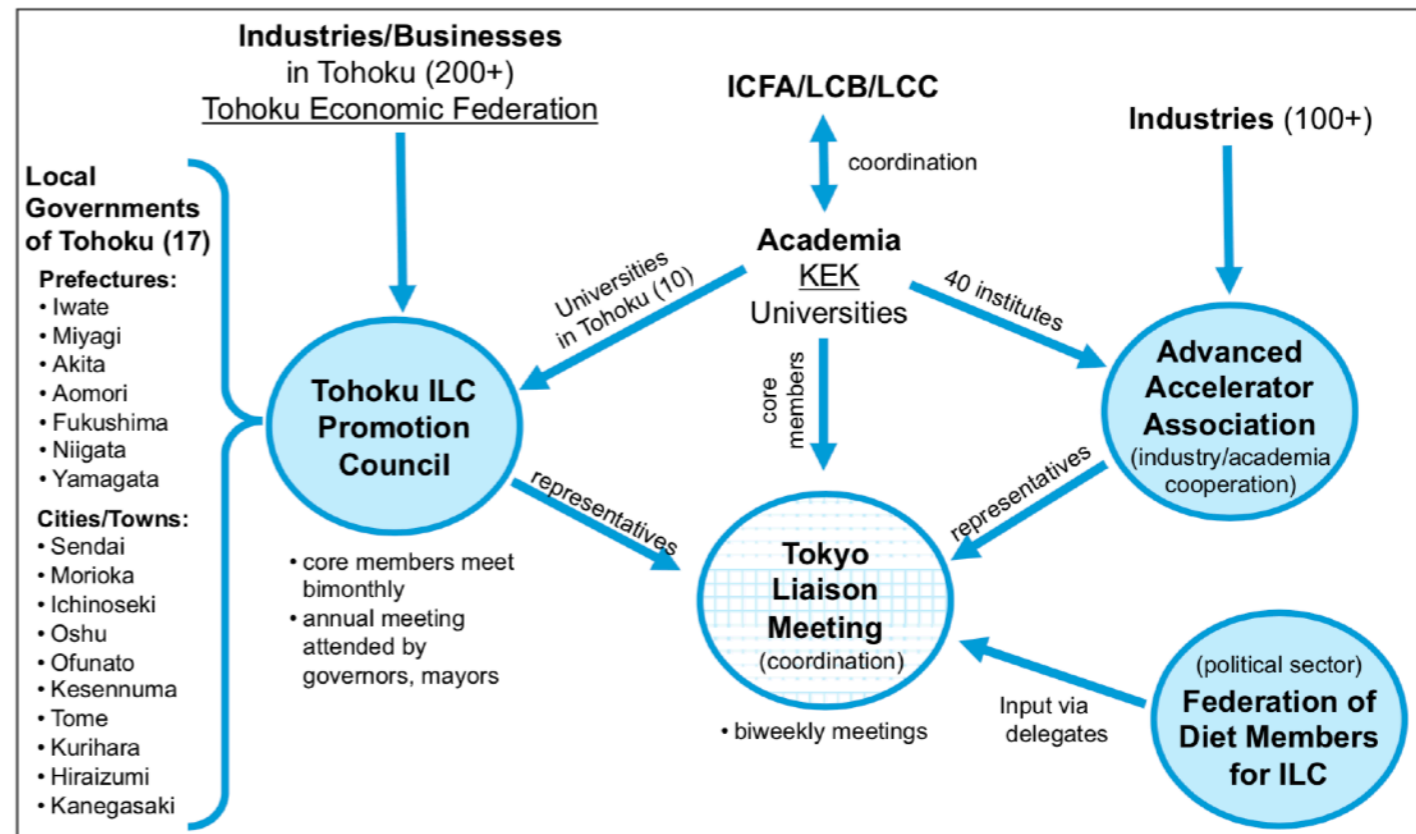


Figure 1: Organizations promoting the ILC.



**Tokyo Liaison Meeting set up**  
 From Iwate-Nippo, Dec.13, 2020

# A letter from JAHEP to ES Group

highlight by KF

To: European Strategy Group

I am writing as Chair of High Energy Physics Committee (HEPC), which represents Japan Association of High Energy Physicists (JAHEP) -- the Japanese HEP community, to communicate our thoughts regarding the recent note prepared by the Strategy Update Secretariat, "Towards an update of the European Strategy for Particle Physics" (CERN/ESG/05b). The following points summarize our discussion at a recent HEPC meeting.

- The European Strategy is critically important for the future developments of worldwide high energy physics beyond Europe.
- We sincerely appreciate that ILC was highly regarded as one of the important future projects in the previous European Strategy Update in 2013. **The strong support for ILC by the European community expressed in the Strategy Update 2013 built the firm basis** for the following developments of the project and serious supports by various sectors in Japan including the government.
- We fully agree that **a Higgs Factory is the most important next large-scale particle physics facility. ILC is the most advanced candidate** to the best of our knowledge.
- We therefore would like to **ask for the European community's continuing support for ILC**. We are committed to further strengthening our efforts and activities in Japan towards its realization.
- We also consider it crucial to start preparations for a next-generation hadron collider beyond LHC. **The Japanese community intends to contribute to important R&D such as those for superconducting magnets.**
- **Global cooperation is essential.** The Japanese community wishes to continue exploring the future of particle physics together with our friends in Europe and other regions with a global vision.

Toshinori MORI Chair,  
High Energy Physics Committee ICEPP,  
The University of Tokyo

[http://www.jahep.org/files/ESG\\_Japan\\_Nov06\\_signed.pdf](http://www.jahep.org/files/ESG_Japan_Nov06_signed.pdf)



# Outreach

A comic book, “Chairman Kosaku Shima”, featuring ILC



**More outreach events will happen.**



# Science Agora 2019

Nov. 16-17, Tokyo

- Nearly monthly **ILC Seminars (mostly on safety)** in Tohoku area.
- **ILC Supporters rebooted.**  
→ **ILC Supporters Future Conference** started from Oct. 15, 2019



**KEK Booth**

**Iwate Booth**



**1st Future Conference on Oct. 15, 2019**



**2nd on Nov. 3, 2019**



**3rd on Dec. 27, 2019**



**Hitoshi lecturing to ~200 people**

- **More outreach events in the pipeline.**



# The Higgs boson and ILC



国際リニアコライダー

シンポジウム概要

出演者

プログラム

ILCとは



お問い合わせ

ILC推進国際シンポジウム

ピーター・ヒッグス博士が語る

## ヒッグス粒子とILC

2020. 2/8 [SAT]

■会場 / 東京大学 伊藤国際学術研究センター 伊藤謝恩ホール  
START / 15:30 (RECEPTION / 15:00) CLOSE / 18:00



ILC推進国際シンポジウム  
ピーター・ヒッグス博士が語る  
ヒッグス粒子とILC

お申し込みはこちら

Prof. Peter Higgs will give a remote talk from 

- SCJ selected ILC as one of “the large scale academic research program” (long list) after  $\sim 1/3$  screening, and invited us to the interview in September.
- The “priority projects” (short list) will be selected after another  $\sim 1/3$  selection by the interview.
- In the previous masterplan process in 2017, MEXT made its own selection starting from the SCJ long list, and made the MEXT Roadmap.

*From Masa Yamauchi (KEK DG)'s talk at LCWS 2019*

***MEXT SCJ's master plan will be approved and published by the SCJ EB on January 30, 2020.***

# Score Sheet

# ***MEXT's view in regard to the ILC project Executive Summary***

***March 7, 2019***

***Research Promotion Bureau, MEXT***

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***Master Plan to be published on Jan. 30, 2020***
- MEXT will pay close attention to the progress of the CERN European Strategy for Particle Physics Update.***  
***ESU in Feb. 2020, to be approved by CERN Council in May 2020***
- The ILC project has certain scientific significance in particle physics particularly in the precision measurements of the Higgs boson, and also has possibility in the technological advancement on the local community, although the SCJ pointed out the risk with the ILC project. Therefore, considering the above, MEXT will continue to discuss the ILC project with other countries having an interest in the ILC project.***  
***IWG report in Oct. 2019  
G-J, F-J Discussion Groups, Strong support from US.***

***MEXT will come to the next LCB meeting on February 20 at SLAC, and update the statement there.***



***ILC is in good shape,  
looking forward to  
some Greener signal  
at the LCB meeting  
on Feb. 20, 2020***