



# ICFA Report

## ILCX 2021

29 October 2021

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## What Is ICFA and how did it come to be?

- ICFA, the International Committee for Future Accelerators, was created to facilitate international collaboration in the construction and use of accelerators for high energy physics. It was created in 1976 by the International Union of Pure and Applied Physics. Its purposes, as stated in 1985, are as follows:
  - To promote international collaboration in all phases of the construction and exploitation of very high energy accelerators.
  - To organize regularly world-inclusive meetings for the exchange of information on future plans for regional facilities and for the formulation of advice on joint studies and uses.
  - To organize workshops for the study of problems related to super high-energy accelerator complexes and their international exploitation and to foster research and development of necessary technology.

## What Is ICFA and how did it come to be?

- ICFA is an international organization in which discussions take place on international aspects of particle physics, in particular the large accelerators that are at the heart of the field. ICFA brings together laboratory directors and representatives from the field to serve as a facilitator for the particle physics community.
- The origins of ICFA go back to the late 1960s; after a series of East-West meetings of leaders in particle physics was held during 1967-1976, there was a belief that the next large accelerator, after the Fermilab and CERN 400 GeV synchrotrons, would of necessity, due to complexity and cost, be an international machine.
- Some 50 world leaders in the field of particle physics met in New Orleans in 1975, passed a resolution recommending the formation of a group to study the scientific, technical and organizational problems connected with world-wide collaboration in the construction of a very large accelerator. This recommendation led IUPAP's Commission 11 to create ICFA in 1976.

# ICFA Members

S. Henderson, Chair, USA  
T. Schoerner-Sadenius, Secretary, Germany  
K. Jakobs, CERN Member States  
F. Gianotti, CERN Member States  
T. Behnke, CERN Member States  
N. Lockyer, USA  
J. Incandela, USA  
Z. Huang, USA  
I. Koop, Russia  
V. Obraztsov, Russia  
Y. Wang, China  
G. Taylor, Other Countries (Past Chair)  
I. Bediaga, Other Countries  
S. Krishnagopal, Other Countries  
T. Mori, Japan  
M. Yamauchi, Japan  
M. Roney, Canada  
H. Schellman, Chair of the IUPAP Commission on Particles and Fields (ex officio)

# What Does ICFA Do?

## ***ICFA Meetings***

- ICFA meets regularly, usually twice per year, often associated with a major particle physics conference. It is an extremely valuable forum for exchange of information across regions and laboratories
- ICFA may take action in the form of recommendations that are made public
- As ICFA speaks for the global particle physics community at the level of Laboratory Directors and regional representatives, those recommendations tend to carry weight

## ***ICFA Seminars***

- Every three years, ICFA organizes a Seminar on Future Perspectives in High-Energy Physics, generally at one of the major laboratories. Program is typically reviews the state of accelerators and particle physics research around the world. Invited attendance is usually limited to ~150-200, chosen from the regions of the world; science officials from governments are also invited. The most recent was in Ottawa in 2017.

## ***ICFA Panels***

- ICFA has formed several Panels, each focused on a specific topical area with high international relevance.
- Panels are typically quite active, organizing schools, workshops and publications on their specific topics, serving as invaluable resources to the international particle physics and accelerator science and technology communities.

# ICFA Panels

- ILC International Development Team (Chair – Tatsuya Nakada, EPFL, Lausanne)
- ICFA Instrumentation Innovation and Development Panel (Chair — Ian Shipsey, Oxford)
- ICFA Beam Dynamics Panel (Chair — Ingo Hofmann, GSI/TUD)
- ICFA Panel on Advanced and Novel Accelerators (Chair — Philippe Piot, Argonne/NIU)
- ICFA Standing Committee on Interregional Connectivity (Chair — Harvey Newman, Caltech)
- ICFA Study Group on Data Preservation in High Energy Physics (Chair – Cristinel Diaconu, CPPM, Marseille)
- ICFA Panel on Sustainable Accelerators and Colliders (Chair — Thomas Roser, BNL)

# Timeline of Recent ICFA Activities and Events

**Statement:** ICFA advocates establishment of an international development team to facilitate transition into the preparatory phase of ILC

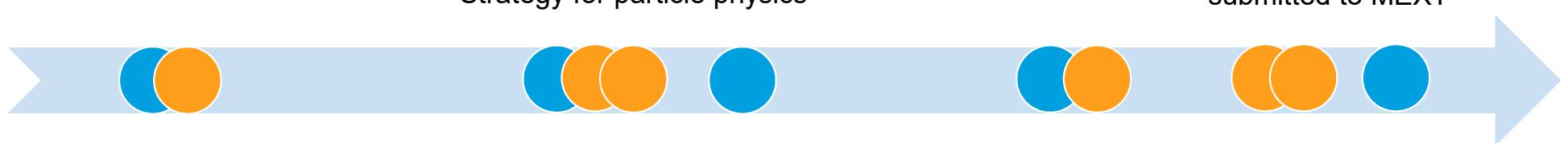
**Statement:** ICFA approved formation of the International Linear Collider International Development Team

**Statement:** ICFA applauds the 2020 Update of the European Strategy for particle physics

**ICFA letter** to MEXT Minister Hagiuda

ICFA receives letter from MEXT Minister Hagiuda

**IDT Proposal** for Pre-Lab submitted to MEXT



Meeting  
Feb. 20, 2020

Meeting  
Aug. 2, 2020      Meeting  
Oct. 14, 2020

Meeting  
Mar. 11, 2021

Meeting  
Jul. 14, 2021

# ILC International Development Team

## To prepare the ILC Pre-Lab

- Clarify the **function and organization** of the ILC Pre-lab
- Develop a common understanding for the **condition to start the ILC Pre-Lab**
- Provide an international framework for the **ILC accelerator effort**
  - Coordinating further R&D and engineering design work...for a smooth transition to the ILC Pre-lab phase
- Provide an international framework for the **ILC physics and detector** activities
  - Coordinate physics and detector R&D effort...for smooth transition to the ILC Pre-lab phase
- **Negotiate with international scientific partners**...for **resources needed** for the ILC Pre-lab, and
- Work with **national authorities** to help in...**establishing** the ILC Pre-lab

# ILC International Development Team

## Activities

- Three Working Groups formed to carry out work of IDT
- Technical Preparation and Work Packages for ILC Pre-Lab
- Pre-Lab proposal developed and submitted to MEXT June 2, 2021 (<https://arxiv.org/abs/2106.00602> )

Proposal for the ILC Preparatory Laboratory (Pre-lab)

International Linear Collider  
International Development Team

1 June 2021

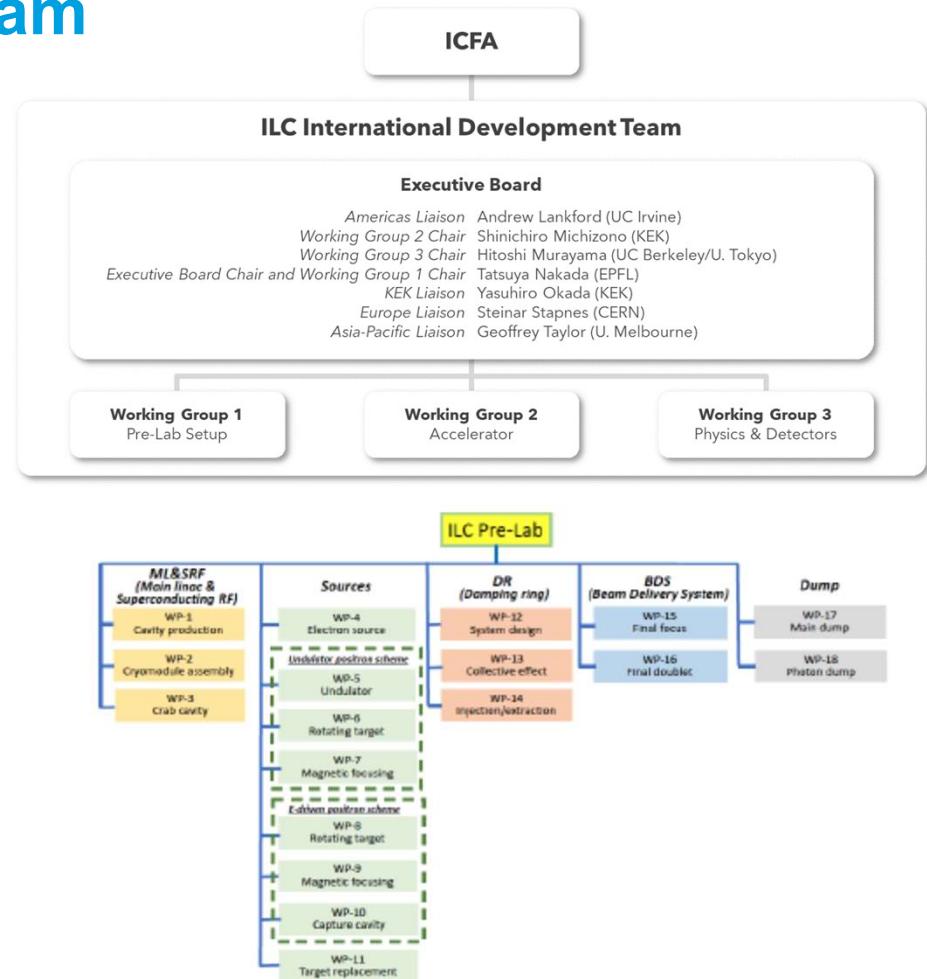


Figure 2: Summary of work packages.

## ICFA Letters to and from MEXT

- ICFA Letter to MEXT Minister Hagiuda, March 17, 2021
  - *"ICFA looks forward to the MEXT minister inviting foreign government officials to discuss potential commitments toward realizing the ILC Project. We also note the keen willingness of potential foreign partners to begin engaging in such discussions..."*
- Letter from MEXT Minister Hagiuda to ICFA Chair: May 31, 2021
  - *"Therefore I recognize that it is appropriate to continue discussions regarding the ILC Project between administrative officials of the relevant countries at the right time, as well as to pay attention to the researchers' efforts to deal with the remaining challenges."*
  - *"Under the current situation that the perspective of broad internal and external cooperation for the ILC project itself as well as its pre-laboratory is not promised, it is difficult to obtain the Japanese citizens' understanding for investing in the pre-laboratory"*
  - *"It is necessary to obtain the clear perspectives on financial contributions to the ILC project itself by the United States and European countries prior to considering the pre-laboratory budget."*

# Perspective

- ICFA Statement February 2020:
  - *ICFA reconfirms the international consensus for a Higgs factory and wishes to see the timely construction of the ILC in Japan.*
  - *ICFA acknowledges and welcomes the inter-governmental discussion between Japan, the United States and European nations, to advance international collaborative activities for the ILC.*
  - *ICFA notes the need for a preparatory phase ahead of the establishment of the ILC laboratory and the construction of the ILC in Japan.*
  - *ICFA advocates establishment of an international development team to facilitate transition into the preparatory phase.*
- ICFA has taken action to organize ILC activities across the globe and has been actively supportive and advocating for taking the next step with the ILC in Japan
- ICFA applauds the European particle physics community and CERN on the Strategy Update, and supports its calls for strong international collaboration that continues to be a unique strength in the field.
- “*For the future initiatives, an electron-positron Higgs factory is considered as the highest priority next collider, consistent with ICFA Statement(2), and a proton-proton collider at the highest achievable energy is recognized as the ambition for the longer term.*“
- ICFA looks forward to the MEXT Expert Panel Report, and then the IDT report on status and plan for the Pre-lab start-up process to ICFA in spring 2022
- Personal view: Start of Pre-Lab is key. Encourage all to continue to make the case for its importance.