



ICFA Report

IUPAP C11 Meeting

July 10, 2022

Stuart Henderson

ICFA Chair

Director, Thomas Jefferson National Accelerator Facility



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 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 Membership

Current status and recent changes

S. Henderson, Chair, USA

T. Schörner, Secretary, Germany

K. Jakobs, CERN Member States **incl Europe outside CERN + Turkey, Ukraine, Israel, Africa**

F. Gianotti, CERN Member States

B. Heinemann CERN Member States

N. Lockyer, USA

S. Dasu, USA

I. Koop, Russia

V. Obraztsov, Russia

Y. Wang, China

G. Taylor, Other Countries **(Asia)**

I. Bediaga, Other Countries **(Latin America)**

S. Krishnagopal, Other Countries **(incl. Near / Middle East)**

T. Mori, Japan

M. Yamauchi, Japan

M. Roney, Canada

F. Canelli, Chair of the IUPAP C11 Commission on Particles and Fields (ex officio)

ICFA Winter Meeting Agenda (March 29-30, 2022)

TUESDAY, MARCH 29



- 8:00 AM → 8:15 AM Welcome**
Convener: Stuart Henderson (Thomas Jefferson National Accelerator Facility)
- 8:00 AM Call meeting to order**
Speaker: Thomas Schörner (DESY) 5m
- 8:05 AM Welcome and introduction to the meeting**
Speaker: Stuart Henderson (Thomas Jefferson National Accelerator Facility) 10m
- 8:15 AM → 10:00 AM ILC International Development Team (IDT) report**
- 8:15 AM IDT report**
Speaker: Tatsuya Nakada (EPFL) 30m
- 8:45 AM Discussion**
1h 15m
- 10:00 AM → 11:00 AM Reports from labs, and regional reports**
- 10:00 AM CERN**
Speaker: Fabiola Gianotti (CERN) 15m
- 10:15 AM FNAL and USA**
Speaker: Nigel Lockyer (Fermilab) 15m
- 10:30 AM IHEP and China**
Speaker: Yifang Wang (IHEP) 15m
- 10:45 AM Europe outside CERN**
Speaker: Karl Jakobs (Freiburg) 15m

WEDNESDAY, MARCH 30



- 8:00 AM → 8:05 AM Welcome: Welcome to the day**
- 8:05 AM → 8:55 AM Reports from labs, and regional reports**
- 8:05 AM KEK and Japan other than ILC** 10m
- 8:15 AM Russia** 10m
- 8:25 AM Canada** 10m
- 8:35 AM Latin America** 10m
- 8:45 AM Other countries** 10m
- 8:55 AM → 9:25 AM ICFA Executive session (ICFA members only)**
- 9:25 AM → 9:35 AM Break** 10m
- 9:35 AM → 10:55 AM Panel reports**
- 9:35 AM ICFA Beam Dynamics Panel**
Speaker: Yunhai Cai (Stanford) 15m
- 9:50 AM ICFA Panel on Advanced and Novel Accelerators (ANA)** 15m
- 10:05 AM ICFA Panel on Sustainable Accelerators and Colliders**
Speaker: Thomas Roser (BNL) 15m
- 10:20 AM ICFA Study Group on Data Preservation in High Energy Physics**
Speaker: Cristinel Diaconu (CPPM, Aix-Marseille Université, CNRS/IN2P3) 15m
- 10:35 AM ICFA Standing Committee on Interregional Connectivity**
Speaker: Harvey Newman (Caltech) 10m
- 10:45 AM ICFA Instrumentation Innovation and Development Panel**
Speaker: Ian Shipsey (Oxford) 10m
- 10:55 AM → 11:00 AM Wrap-up and farewell**

Recent ICFA International Linear Collider Activities

International Development Team formed 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

Recent ICFA International Linear Collider Activities

MEXT Expert Panel and IDT activities

- MEXT re-convened the Expert Panel to assess progress in international cooperation, public and scientific community support, technical feasibility, cost and human resources
- Recommendations and findings issued Feb. 14, 2022:
 - 1. The panel recognizes the academic significance of particle physics and the importance of the research activities,...However, the panel found that it is still premature to proceed into the ILC Pre-lab phase, which is coupled with an expression of interest to host the ILC by Japan as desired by the research community proposing the project.
 - 2. Given the increasing strain in the financial situation...the panel recommends the ILC proponents to reflect upon this fact and to reevaluate the plan. They should reexamine the approach towards a Higgs factory in a global manner taking into account the progress in the various studies such as the Future Circular Collider (FCC) and ILC.
 - 3. The panel recommends that the development work in the key technological issues...should be carried out by further strengthening the international collaboration among institutes and laboratories, shelving the question of hosting the ILC.
 - 4. For realizing a very large project such as the ILC, cultivating a framework where the related countries can exchange information on their situations and discuss required steps would be important.
 - 5. The panel recommends that the research community should continue efforts to expand the broad support from various stakeholders in Japan and abroad by building up trust and mutual understanding through bi-directional communication with the people concerned.

Recent ICFA International Linear Collider Activities

ICFA published a statement following our Winter meeting on April 10, 2022

- ICFA reconfirms the international consensus on the importance of a Higgs Factory as the highest priority for realizing the scientific goals of particle physics.
- ICFA also reaffirms the importance of the regional planning activities that have recently been completed and those underway, which for decades have underpinned the global strategy for the field.
- ICFA reaffirms its position that the concept for the ILC is technically robust and has reached a level of maturity which supports its moving forward with the engineering design study toward its timely realization.
- ICFA commits to continuing efforts within the International Development Team (IDT) over the next year to coordinate the global research community's activities toward further developing and realizing the ILC in Japan. In particular, the IDT will work to further strengthen international collaboration among institutes and laboratories, and to expand the broad support from various stakeholders.
- ICFA continues to encourage inter-governmental discussion between Japan and potential partner nations to advance international collaboration toward important research and development activities as well as coordination toward realization of an ILC.

ICFA renewed mandate for IDT in this phase:

- the IDT will organise international discussions, supported by KEK and with MEXT cognisance, to address those topics. IDT will develop a general description of the evolution of a global project from conception to operation, which could be applicable to the ILC. Discussion for the specific case of the ILC will then follow, describing the full lifecycle of the project, suggesting processes for necessary decisions and potential consequences of those decisions. Possible implementation models could also be included in the discussion.

ICFA Panels

- ILC International Development Team (Chair – Tatsuya Nakada, EPFL, Lausanne)
- ICFA Instrumentation Innovation and Development Panel (Chair — Ian Shipsey, Oxford)
 - *ICFA Instrumentation Awards established, announced December 2021:*
 - Early Career Researcher Award, **Claudia Nones (CEA-Saclay)**
 - Senior Researcher Award, **Velkjo Radeka (Brookhaven)**
- ICFA Beam Dynamics Panel (Chair — Yunhai Cai, SLAC, **New!**)
 - *Regular review articles established in JINST*
 - *Active ICFA BD Workshop Series*

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ICFA BEAM DYNAMICS NEWSLETTER#83 —
CHALLENGES IN ADVANCED ACCELERATOR CONCEPTS

Editorial announcements and information — ICFA Beam
Dynamics Newsletter No. 83

Y. Cai^{a,1} and P. Plot^{b,c,2,*}

ICFA Panels

- ICFA Panel on Advanced and Novel Accelerators (Chair — Chuanxiang Tang, Tsinghua University, **New!**)
 - *Active ICFA ANA affiliated workshops*
- 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)
 - *Renewed workshop series*
- ICFA Panel on Sustainable Accelerators and Colliders (Chair — Thomas Roser, BNL, **New!**)
 - *Mandate broadened to include accelerator technology in energy and environment*

Summary

- ICFA continues to serve a key role in fostering global cooperation and collaboration in our field, working to help the community realize their goals
- ICFA remains very active, even in full-remote operation
- ILC International Development Team re-directing following MEXT Expert Panel
- ICFA Seminar planning on-hold
- ICFA Panels are very active
 - A number of chair and mandate updates, anticipate more