

# **ICFA Report to IUPAP-C11**

**IUPAP - C11 Meeting, 1st August, 2020**

**Prague, ICHEP2020 Conference**

**Geoffrey Taylor, ICFA Chair**

# ICFA Meeting Agenda

**Sunday, August 2nd, during ICHEP2020 virtual conference**

## *Agenda:*

- Introduction & News (Taylor)
- Final LCB Report (Nakada)
- Discussion of the proposed the International Development Team Reports on Global HEP projects (Gianotti, Lockyer, Yamauchi, Wang)
- European Strategy Report and Discussion (Remarks + Discussion)
- News on next ICFA Seminar (Mnich)
- AOB
- ICFA Executive Session - to follow

# **ICFA Executive Meeting**

**... to follow the ICFA Member Meeting, 2 August, 2020**

- Confirmation of New ICFA Chair (2021-23)
- Rotation of ICFA Secretary position between regions
- Membership changes
- AOB

# ICFA Panels

- Beam Dynamics (Chair: I. Hoffmann)
- Instrumentation Innovation & Development (Chair: I. Shipsey)
- Advanced and Novel Accelerators (Chair: B. Carlsten)
- Interregional Connectivity (Chair: H. Newman)
- Data Preservation in HEP (Chair: C. Diaconu)
- Sustainable Accelerators and Colliders (Chair: M. Seidel)

# Beam Dynamics Panel

## Beam Dynamics Newsletter now Online

- The [Beam Dynamics Panel of ICFA](#) encourages and promotes collaboration on beam dynamics studies for present and future accelerators via Workshops and regularly appearing Newsletters dedicated to selected themes –coordinated by an Issue editor.
- Themes include **Publication of the Beam Dynamics Newsletter as Special Issue of the Journal of Instrumentation started in 2020 with Newsletter #79:**
  - General report from the Panel Chair (editor in chief) and the Issue editor.
  - Reports from past workshops/conferences, PHD thesis abstracts and other reports;
  - Papers submitted from individual authors on the special theme of the Issue.
- Beam Dynamics Panel website ( <http://www.icfa-bd.org/> ):
  - Current and previous Newsletters;
  - Relevant workshops (ICFA Advanced Beam Dynamics Workshops, ICFA Mini-Workshops);
  - Guidelines for Workshops and Newsletters; and
  - List of Panel members.
- Ingo Hofmann (GSI Darmstadt and Technical University Darmstadt, Germany) is Panel Chair

# ICFA Instrumentation Innovation & Development Panel

**EDIT School:** IHEP, Beijing provisional date 11-22 October, 2021

**goal:** restore to annual, rotating across three regions.

**ICFA School:** host and provisional date TIFR, Mumbai Feb-March, 2022

**goal:** increase frequency

1<sup>st</sup> multidisciplinary workshop sponsored **MultiHEP2020 @LBNL**

**INFIERI 2021** multidisciplinary school sponsored

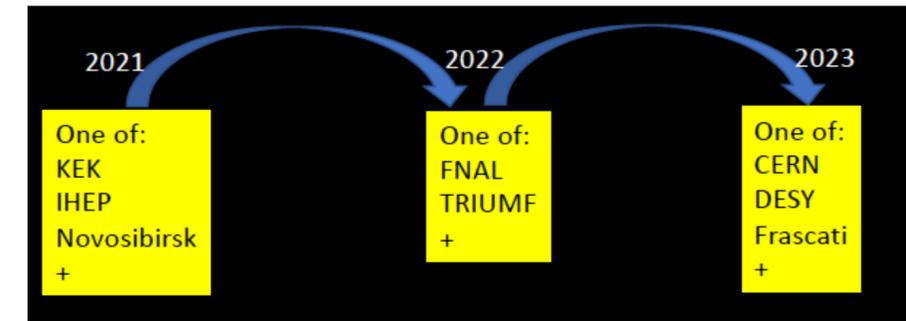
**IID panel taskforces:**

- EDIT School
- ICFA School
- Interdisciplinary workshops
- Instrumentation Studentships & Instrumentation Prizes

**Instrumentation roadmaps globally:**

**Europe:** ESU/EPS/ECFA Global Detector R&D Roadmap; ECFA Detector R&D panel

**North America:** DOE BRN (BF&IS co-chairs, MD, PK, FS, PM conveners), DPF CPAD (PM new Chair), Snowmass Instrumentation (PM convener, IS sub-convener)



**MultiHEP 2020**

<https://indico.physics.lbl.gov/event/1217/>

30 September 2020 to 2 October 2020

6th Summer School on INtelligent signal processing  
for FrontIer Research and Industry

4-18 July 2021  
Autonoma de Madrid

<https://indico.cern.ch/event/850479/>

# 2020 European Strategy for Particle Physics Update

## High-priority future initiatives

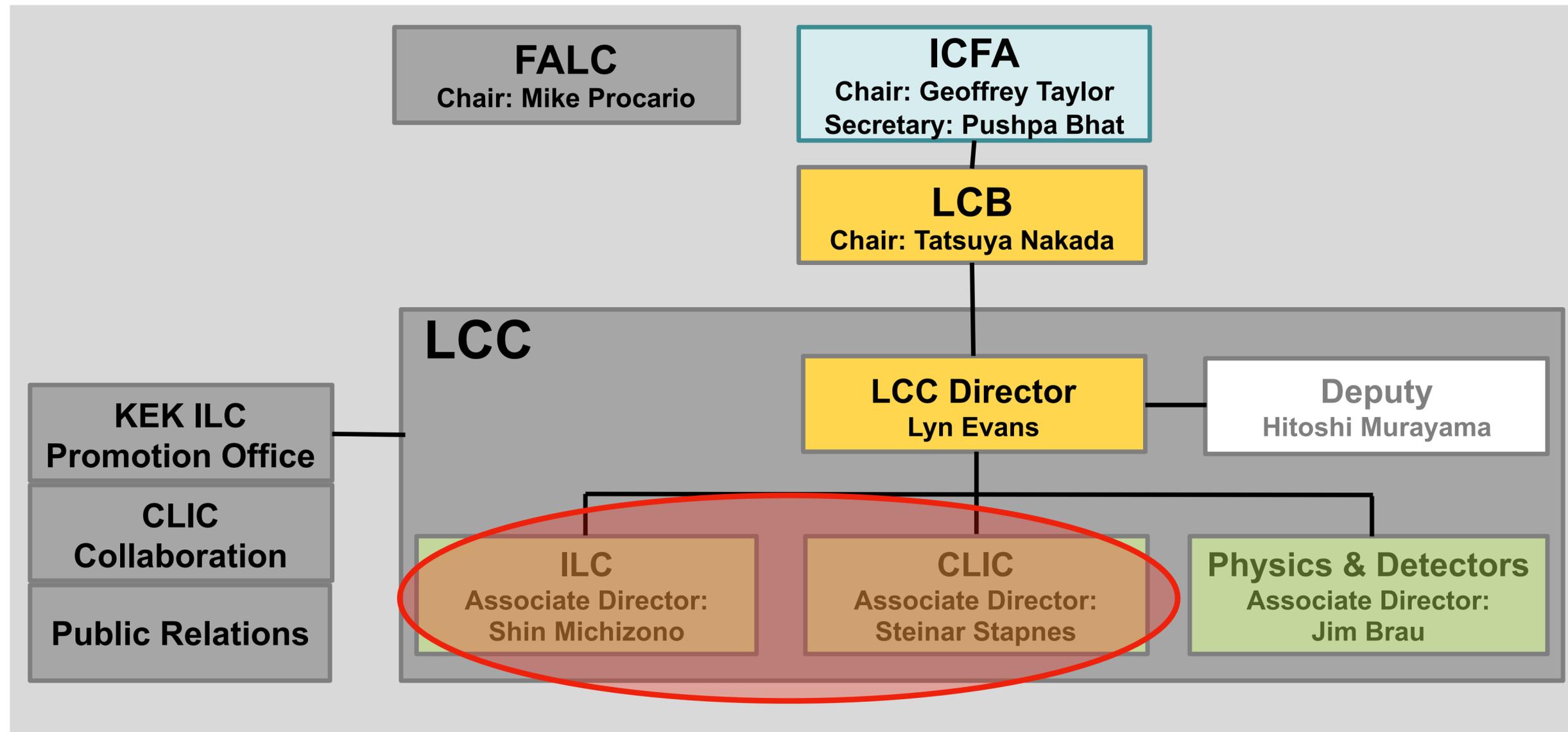
... An electron-positron Higgs factory is the highest-priority next collider. For the longer term, the European particle physics community has the ambition to operate a proton-proton collider at the highest achievable energy.

Accomplishing these compelling goals will require innovation and cutting-edge technology:

***The timely realisation of the electron-positron International Linear Collider (ILC) in Japan would be compatible with this strategy and, in that case, the European particle physics community would wish to collaborate.***

***HL-LHC and ILC operating together for a decade or more would make a potent partnership for Higgs research***

# Linear Collider Board (LCB) and the Linear Collider Collaboration



# ILC International Development Team

To prepare the ILC Pre-Lab (without pre-empting the work of the 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 partners** ... for **resources needed** for the ILC Pre-Lab, and
- ...work with **national authorities** to help in ... **establishing** the ILC Pre-Lab.

# 2020 European Strategy for Particle Physics Update

## High-priority future initiatives (2) - of specific importance to ICFA:

*Europe, together with its international partners, should investigate the technical and financial feasibility of a future hadron collider at CERN with a centre-of-mass energy of at least 100 TeV*

*... the particle physics community should ramp up its R&D effort focused on advanced accelerator technologies, in particular that for high-field superconducting magnets, including high-temperature superconductors;*

An ambitious next-generation collider project will require global collaboration and a long-term commitment to construction and operations by all parties. ***CERN should initiate discussions with potential major partners as part of the feasibility study for such a project being hosted at CERN***

The technologies under consideration include ***high-field magnets, high-temperature superconductors, plasma wakefield acceleration and other high-gradient accelerating structures, bright muon beams, energy recovery linacs.***

# 2020 European Strategy for Particle Physics Update

## Other essential scientific activities ...

... precision measurements of flavour physics and electric or magnetic dipole moments, and searches for axions, dark sector candidates and feebly interacting particles ...

*The pursuit of new research directions should be encouraged and links with fields such as cosmology, astroparticle physics, and nuclear physics fostered.*

*Detector R&D programmes and associated infrastructures should be supported at CERN, national institutes, laboratories and universities.*

# 13th ICFA Seminar

## Berlin, October 4-10, 2021



- “ICFA Seminar” 3-Yearly review of the field
- Moves around the Three Regions:
  - Europe 2020 - Berlin
  - Postponed due to COVID-19 Travel Restrictions

2017: Ottawa (Canada)  
2014: Beijing (China)  
2011: CERN, Geneva (Switzerland)  
2008: SLAC, USA  
2005: Daegu (Korea)  
2002: CERN, Geneva (Switzerland)  
1999: Fermilab (USA)  
1996: KEK, Tsukuba (Japan)  
1993: DESY, Hamburg (Germany)  
1990: IHEP (Russia)  
1987: BNL, Brookhaven (USA)  
1984: KEK, Tsukuba (Japan)

# Conclusions

## More details following tomorrow's ICFA meeting

- ILC International Development Team to work towards the ILC Pre-Lab on a scale of ~1.5 years.
- New ICFA Chair for three years 2021-23
- ICFA Panels very active (chair and membership renewal)
- ICFA Seminar delayed ~1 year due to COVID-19 - Berlin, October 2021
- 2020 European Strategy for Particle Physics Update
  - applauded by ICFA
  - consistent with ICFA aims.