

ICFA Activities Report to IUPAP

September 2017

Pushpa Bhat, Fermilab (ICFA Secretary)

Joachim Mnich, DESY (ICFA Chair)

1. Introduction

The International Committee for Future Accelerators (ICFA) has had two meetings so far, in 2017, and will have another meeting in November. The ICFA annual meeting was held in Valencia, Spain, during February 16 – 17, 2017. The directors of the world's leading particle physics laboratories were also invited to the February meeting to allow an extensive discussion of both the current and the future status of particle physics. The second meeting of the year was on August 9, 2017, during the IUPAP-sponsored International Symposium on Lepton Photon Interactions at High Energies, held in Guangzhou, China. This was a shorter meeting with only ICFA members and panel chairs/members invited to the meeting. Both meetings had audio/video facilities to enable remote participation of members who could not travel to the meeting. The triennial ICFA Seminar will be held Nov. 6-9, 2017, during which another ICFA meeting is planned.

2. Linear Collider

ICFA extended and updated the mandate for the Linear Collider Board (LCB), one of the panels of ICFA, through 2019. The new Chair of the LCB is Tatsuya Nakada of EPFL, Lausanne, Switzerland. The Linear Collider Collaboration (LCC) is led by Lyn Evans, as the Director. The new LCB/LCC mandate can be found at <http://icfa.fnal.gov/panels/linear-collider-board/>.

Under the new organization, the Linear Collider Collaboration (LCC) has now completed rigorous studies on cost reduction in several staging scenarios for a 250 GeV International Linear Collider (ILC) in Japan. The main conclusion of the study is that there would be a substantial cost reduction for a 250 GeV ILC with respect to the TDR design – about 34% with state of the art and up to 40% with additional R&D on the superconducting acceleration technology.

The LCC Physics & Detectors (LCCPD) group carried out physics studies and explored complementarity with LHC. The conclusions of the physics study are that the ILC250 does offer excellent science, while full science reach needs ~500 GeV, and in all scenarios of future LHC outcomes, the ILC has a compelling discovery potential.

A subcommittee commissioned by the Japan Association of High Energy Physicists (JAHEP) has also recently carried out a study and released a statement strongly recommending the proposal to construct a 250 GeV ILC in Japan. LCB and ICFA discussed the JAHEP report and statement at the August 9 meeting.

3. ICFA Panels

A new panel on Sustainable Accelerators and Colliders was created in 2016. Members were appointed and Mike Seidel of PSI was appointed Chair.

Yong Ho Chin of KEK was appointed Chair of the ICFA Beam Dynamics panel and the membership of the panel was appointed.

A Policies & Procedures document to provide guidance regarding the creation and termination of ICFA panels, panel composition, selection and terms of the panel members and chair, and panel activities has been prepared. The proposed policies/procedures have been discussed by ICFA. The document will be approved after updates taking into consideration comments and concerns expressed, and the policies/procedures will be implemented starting January 2018.

ICFA has been in contact with the recently formed IUPAP Working Group 14 (WG-14) on Accelerator Science. The chair of the WG-14 is invited to give reports at the ICFA meetings and vice versa. At the February ICFA meeting in Valencia, Mike Seidel of PSI reported on behalf of Lia Merminga, Chair of the WG-14. Some ICFA panels are expected to serve as a bridge to the WG-14.

4. Global planning for HEP

ICFA heard reports from Nigel Lockyer, Fabiola Gianotti, and Yifang Wang on projects that are ongoing and/or being planned in America, Europe, and Asia, respectively, at both ICFA meetings. (At the August 9 meeting, Eckhard Elsen reported on behalf of Gianotti.) Lockyer reported on the progress being made in implementing the P5 recommendations from 2014, and particularly on the short and long-baseline neutrino programs at Fermilab, as well as the developments in experiments with muon beams. He also reported on the work underway on HL-LHC on both accelerator and detector fronts, and the local accelerator R&D programs. Gianotti/Elsen gave updates on the LHC operations, and on the future High Luminosity LHC (HL-LHC) project, as well as the status of work on future accelerator projects such as CLIC and FCC. Europe is preparing for a HEP strategy update in 2019. Wang reported on progress in the current particle physics and cosmic ray physics programs at IHEP in China, and plans for the CEPC project.

ICFA also heard, at its annual meeting in February in Valencia, reports from directors of other particle physics and accelerator laboratories from around the world.

5. Other Reports

Reports were made at ICFA meetings by FALC, InterActions, the ICFA/ICUIL collaboration, ICFA Panel Chairs, and by members of the labs, countries, and regions represented at the meetings.

6. Future ICFA Meetings

The next ICFA meeting will be in Ottawa, Canada, where the triennial ICFA Seminar will be held November 6-9, 2017. The 2018 winter ICFA meeting along with FALC and LCB meetings is proposed to be held March 8-10, 2018. There will be a second meeting of ICFA during ICHEP 2018 in Seoul, South Korea.

7. Announcements

At the August meeting, ICFA members elected, by consensus, Geoffrey Taylor, Director of COEPP, Melbourne, Australia, to become the Chair of ICFA, starting January 2018. Current Chair, Joachim Mnich of DESY, will complete his term as Chair at the end of this year. The current ICFA membership is given in Appendix I. More information on ICFA activities can be found at the ICFA web-site:

<http://icfa.fnal.gov/>

Appendix I

ICFA MEMBERSHIP

August 2017

CERN Member States

H. Abramowicz
F. Gianotti
J. Mnich (Chair)

USA

N. Hadley
N. Lockyer
D. MacFarlane

Japan

T. Mori
M. Yamauchi

Russia

A. Bondar
S. Ivanov

Canada

M. Roney

China

Y. Wang

Other Countries

M. Cho
E. Álvarez
V. Matveev

C11

J. Fuster

Secretary: P. Bhat

Next Chair of ICFA (starting Jan. 2018): Geoffrey Taylor