

## **Activities of the International Committee for Future Accelerators (ICFA)**

**September 2009 – October 2010**

Roy Rubinstein – ICFA Secretary

### **1. Introduction**

During the past year there were two ICFA meetings: on 25/26 February 2010 at BNL and on 24 July 2010 during ICHEP2010 in Paris. At the BNL meeting, directors of the world's major particle physics laboratories were also invited; this allowed a more in-depth discussion of particle physics' current status and future prospects.

The current ICFA membership is given in Appendix I.

### **2. Particle Physics Situation---Now and the Remainder of the Decade**

There is concern on how to position the field for the remainder of the decade; many things have changed in the recent past, including the LHC schedule and discussions on other projects such as neutrino facilities and B-factories. All major future facilities are counting on international collaboration, and there is a need to look at the whole picture of global projects. There are at present three existing regional roadmaps for the field, but not a global one. ICFA is a well-suited body to produce a document describing opportunities for particle physics across the world, with a list of currently open questions and possible future ways to answer them. It was agreed that ICFA will produce such a document.

### **3. Revising the ICFA Guidelines**

A discussion was initiated on whether the ICFA Guidelines (originally adopted in 1980) should be revised. The major possible point of issue is Guideline #5, which says that experimental groups should not be required to contribute to accelerator or experimental area running costs. Projects are becoming larger and more expensive, so costs to the accelerator host country are increasing. The general feeling was to not change the existing model at this time but to add a sentence saying that allocation of operating costs for a large international project should be part of the agreement for building the project, and should be agreed by the parties before project approval. Discussion will continue at a future ICFA meeting.

### **4. ILCSC**

The International Linear Collider Steering Committee (ILCSC) was set up by ICFA to facilitate the global collaborative effort on the ILC.

Evaluation of the three submitted detector LOIs was carried out in 2009 by the International Detector Advisory Group (IDAG); IDAG in September 2009 recommended validation of two of the LOIs (ILD and SiD) and this recommendation was approved by ILCSC. GDE and the detectors are on track for design reports in 2012, and discussion has started on post-2012 ILC activities including governance of a future ILC project. Some ideas on this have been presented to the particle physics community for comments. There is growing interaction between ILC and CLIC on both accelerator and detectors. Many lab directors were present at a February 2010 ILCSC meeting for a discussion on the coordination of the priorities of ILC accelerator and detector activities with the priorities of the labs so that ILC activities at the labs can progress.

In 2008, ILCSC set up the Project Advisory Committee (PAC) to assist it in the oversight of both the GDE accelerator activities and the ILC detector activities. The PAC held a two-day review of the status of the accelerator and detector work in November 2009 and another in May 2010; its reports were made to ILCSC and are publicly available on the Web; the next PAC review is scheduled for November 2010. The PAC Chair is currently Lyn Evans.

#### **5. ILC: Accelerator**

The current goals are to optimize cost/performance, complete crucial demonstrations and risk mitigating R&D, update the value estimate and schedule, and produce a Project Implementation Plan. The major short-term goals are dominated by SCRF; 33 MV/m has been reached in a production 9-cell cavity, and SCRF competence is emerging in all 3 regions. The SB2009 proposals were aimed at cost containment; they include the single-tunnel solution, the undulator-based positron source at the end of the electron linac, the ~ 3.2 Km damping rings, and the revised central region tunnel layout. The total savings would be ~ 12-13%. The GDE's Accelerator Advisory Panel and the PAC recommended that these proposals be carried out using a change-control process

#### **6. ILC: Detectors**

Detector activity will be monitored through 2012 by IDAG. Adequate detector resources through 2012 are not assured, and there are currently resource imbalances among the 3 regions. A Working Group is studying the effects of the SB2009 accelerator proposals on the ILC physics program.

#### **7. International Committee for Ultra Intense Lasers (ICUIL)**

A joint task force of ICFA and ICUIL has been set up to study laser acceleration of particles.

#### **8. Particle Physics Data Preservation**

An international study group has been examining the case for, and possible mechanisms to carry out, preservation of data from particle physics experiments. ICFA endorsed this activity.

#### **9. ICFA Seminar**

The next ICFA Seminar will be held at CERN on 3-6 October 2011.

#### **10. Reports**

Reports were presented to ICFA meetings on activities of ICFA's Panels, InterAction, C11, FALC and of each country and lab represented at the meeting.

## Appendix I

### ICFA MEMBERSHIP

July 2010

#### CERN Member States

R. Heuer  
J. Mnich  
T. Nakada

#### USA

R. Brock  
P. Drell  
P. Oddone

#### Japan

S. Komamiya  
A. Suzuki (Chair)

#### Russia

E. Levichev  
A. Zaitsev

#### Canada

W. Trischuk

#### China

H. Chen

#### Other Countries

C. Avila  
I-S. Ko  
G. Taylor

#### **C11**

P. McBride

(Secretary: R. Rubinstein)