

## Activities of ICFA

August 2004 – September 2005

Roy Rubinstein – ICFA Secretary

### 1. Introduction

Four meetings of ICFA were held during the past year: on 19 August 2004 (joint with ILCSC) during the International Conference on High Energy Physics ICHEP2004 in Beijing; on 20 August 2004, also during ICHEP2004 in Beijing; on 10/11 February 2005 at TRIUMF, Vancouver; and on 3 July 2005 during the Lepton-Photon Symposium in Uppsala. At the TRIUMF meeting, directors of the major world particle physics laboratories were also invited, to allow a broader discussion of particle physics' current status and future possibilities.

The current ICFA membership is given in Attachment I.

### 2. Linear Collider

For more than 10 years, ICFA has been a leader in the effort to achieve a linear collider, and to make it a global facility. Particle physicists in Asia, Europe and North America have each produced studies indicating that a 500 GeV linear collider, upgradeable to  $\sim 1$  TeV, is the priority of the field, and this has been endorsed by international bodies such as the OECD Global Science Forum. In order to support linear collider activities, in 2002 ICFA set up the International Linear Collider Steering Committee (ILCSC) to promote its construction.

ILCSC, in late 2003, set up the International Technology Recommendation Panel (ITRP), chaired by Barry Barish (Caltech), to recommend a single technology option for the main linac rf technology; two designs (superconducting and room-temperature X-band) had reached the stage where they were viable candidates for construction of the accelerator. In August 2004 at the joint ILCSC/ICFA meeting in Beijing, ITRP recommended the superconducting option, and this was accepted, and publicly announced, by ICFA. The field quickly coalesced behind this recommendation. An ILCSC Workshop in KEK, Japan in November 2004 brought together accelerator physicists previously working on both technologies, to start work together towards the common technology. A second workshop was held in Snowmass, USA on 14-27 August 2005.

The next major action was to find a director to lead the R&D and design effort (called the Global Design Effort, or GDE) for the International Linear Collider (ILC). ILCSC set up a committee to recommend a director, which reported to ILCSC and ICFA at the February 2005 meetings of these committees. It was announced on 18 March 2005 that Barry Barish had accepted the position. Initially, he will report to ILCSC, although it is expected that eventually this oversight role will be taken over by some organization of government entities that will fund the international linear collider effort.

At ILCSC meetings in Frankfurt on 10 May 2005 and Snowmass on 23 August 2005, Barish gave reports on his progress. He stated that there will be a “virtual”, not real, central site for the GDE, to allow people to take the necessary leadership roles without having to relocate from their current institutions. Three regional GDE directors have been appointed, who will be the single points of contact for him in each of the three major regions of Asia, Europe, and North America. The GDE will (in 2005-2006) have a total staff of about 20 full-time-equivalents (FTEs), composed of about 40-50 people. Barish hopes to have an ILC Baseline Configuration document by the end of 2005, and a Reference Design Report, including reliable costing, by the end of 2006. The Reference Design Report will be the basis for moving towards a technical design, to be ready by the end of 2008, before physics from the LHC establishes the science case.

At the 10 May 2005 ILCSC meeting, there was agreement on a Memorandum of Understanding (MOU) for the GDE. Representatives of eleven “charter” member institutions have signed the MOU, and arrangements will be made for other interested institutions to join. The MOU is available at [http://www.fnal.gov/directorate/icfa/ILC\\_GDE\\_MOU.pdf](http://www.fnal.gov/directorate/icfa/ILC_GDE_MOU.pdf).

The activities of ICFA and ILCSC to realize a linear collider have been noted by the particle physics funding agencies in many countries, with general support for the major actions taken so far. A group of funding agencies from countries active in particle physics has been formed to periodically discuss linear collider activities; it is informally known as FALC (Funding Agencies for a Linear Collider), and it has on several occasions solicited input from ICFA, ILCSC and, more recently, the GDE director.

### 3. ICFA Seminar

Every three years, an ICFA Seminar is held, to provide an opportunity for an international exchange of information on plans for future facilities in the field of particle physics. There are about 150-200 invited attendees, including government science officials from several countries. The next Seminar will be held in Daegu, Korea, from 28 September to 1 October 2005; information is available at <http://chep.knu.ac.kr/ICFA-Seminar/>.

### 4. Chairs of ICFA and ILCSC

The term of Jonathan Dorfan as ICFA Chair ends on 31 December 2005; that of Maury Tigner as ILCSC Chair ended on 31 December 2004, but Tigner agreed to stay on for several additional months. On 3 July 2005, ICFA approved Albrecht Wagner (DESY) to be ICFA Chair for a three-year term starting on 1 January 2006, and Shin-ichi Kurokawa (KEK) to be ILCSC Chair for a two-year term starting on 3 July 2005.

### 5. Other Activities

ICFA heard reports from the InterAction particle physics communications group, and the Worldwide Study of the Physics and Detectors for Future  $e^+e^-$  Linear

Colliders. Reports were also periodically given by the ICFA Panels: Instrumentation; Beam Dynamics; Advanced and Novel Accelerators; Interregional Connectivity; High Energy Physics Computing Coordination. These Panels provide international discussion of accelerator and particle physics topics of a technical nature. They organize schools and workshops on their specific topics, and often put out bulletins, newsletters and other records of their activities. The Interregional Connectivity Committee, for example, has produced several studies on the digital divide between the developed and developing countries.

ICFA MEMBERSHIP

September 2005

CERN Member States

T. Akesson  
R. Aymar  
A. Wagner

USA

S. Dawson  
J. Dorfan (Chair)  
P. Oddone

Japan

S. Komamiya  
Y. Totsuka

Russia

Y. Tikhonov  
A. Zaytsev

Canada

D. Karlen

China

H. Chen

Other Countries

S. Novaes  
V. Sahni  
D. Son

C11

V. Lüth

(Secretary:

R. Rubinstein)