

International Commission on Physics Education

C14, IUPAP, Activities 2003 – 2005

Membership 2003 - 2005

Chair: Gunnar Tibell, Sweden

Vice Chair: Toshio Hyodo, Japan

Secretary: Ernie McFarland, Canada

Members:

Diane Grayson, South Africa

Pratibha Jolly, India

Xingkai Luo, China

Jon Ogborn, United Kingdom

Sung-Jae Pak, Korea

Mauricio Pietrocola, Brazil

Hans-Joachim Schlichting, Germany

Jacques Treiner, France

Matilde Vicentini, Italy

Dean Zollman, USA

Associate Members:

Minella Alarcon, UNESCO

Lakshman Dissanayake, Sri Lanka

Eduardo Molto, Cuba

Vivien Talisayon, Philippines

The activities of the Commission during the period 2003 – 2005 have contained annual meetings, working groups, international conferences and publications, both of books and a Newsletter with two issues annually. The Minutes of the annual ICPE meetings have been published in full on the home page and give the best description of our activities. The home page address is: <http://web.phys.ksu.edu/icpe/>

In the following the introduction to the mandate of the Commission will be given as well as a summary of some of the events mentioned above.

1. Mandate

Article 1 of the mandate gives the following prescription of the task of the Commission:

To promote the exchange of information and views among the members of the international community of physicists in the general field of Physics Education including:

- a) the collection, evaluation, co-ordination and distribution of information concerning education in the physical sciences at all levels;
- b) information relative to the assessment of standards of physics teaching and learning;
- c) suggesting ways in which the facilities for the study of physics at all levels might be improved, stimulating experiments at all levels, and giving help to physics teachers in all countries in incorporating current knowledge of physics, physics pedagogy, and the results of research in physics education into their courses and curricula.

2. Conferences

The Commission has been active in promoting international conferences on physics education and most members have taken part as initiators and planners of such conferences. If the organizers ask for IUPAP support C14 has to endorse the meeting in question. During the three-year period discussed here the following conferences were supported by IUPAP, after endorsements by C14. Also mentioned are the C14 members most closely involved in the organization.

Eighth Inter-American Conference on Physics Education. Teaching physics for the future.

Havana, Cuba, July 7 – 11, 2003. (Organizer: Eduardo Molto)

Enrico Fermi Summer School, Research on Physics Education

Varenna, Italy, July 15 – 25, 2003 (Course directors: Matilde Vicentini and former ICPE Secretary E.F. Redish)

What Physics Should We Teach?

Durban, South Africa, July 5 – 8, 2004

(Organizer: Diane Grayson)

World View on Physics Education in 2005: Focusing on Change

New Delhi, India, August 22 – 26, 2005

(Organizer: Pratibha Jolly)

World Conference on Physics and Sustainable Development

Durban, South Africa, October 31 – November 2, 2005

(UNESCO representative: Minella Alarcon)

The last conference listed above is organized by IUPAP together with UNESCO, ICTP in Trieste and the South African Institute of Physics. One of the four themes to be discussed is Physics Education.

Several other international conferences on physics education have been organized during this period, without asking for IUPAP support. Some examples are the ESERA meeting in Noordwijkerhout, Netherlands, the GIREP seminar in Udine, Italy, and the Seventh EUPEN General Forum, Uppsala, Sweden, all in 2003, as well as EPEC1, the first education meeting organized by the European Physical Society (EPS) in Bad Honnef, Germany, July 4 – 7, 2005.

Often the annual meeting of ICPE is held before or after one of these conferences.

Examples are 2003 in Noordwijkerhout, 2004 in Durban and 2005 in New Delhi. Several of the members of ICPE were also active in the adjacent conferences as invited speakers, giving contributed talks, presenting posters or as session chairpersons. In addition, it has been common for the ICPE members to serve on the international organizing committees and thus help in the planning.

3. Publications

The *ICPE Newsletter* has continued to appear twice annually, normally in issues of 12 pages, with our associate member Vivien Talisayon as editor. News items have been published as well as feature articles on educational topics. Recently a so called ICPE Chair's Corner has been opened where I have been given some space to express my thoughts concerning important Commission issues.

In the annual meeting of 2003 it was decided to update the ICPE book "*Physics 2000*", by asking all IUPAP Commission chairpersons to revise their earlier contributions. Jon Ogborn volunteered to serve as editor of the new book which was called "*Physics Now*". It was printed in India by Thomson Press Ltd and appeared in time for the Council and Commission Chairs Meeting in Mumbai, in October 2004.

Physics Now has been printed in 2500 copies – of these 1000 were bought by UNESCO and 500 by the Indian Physical Society. The original 1000 copies, financially supported by IUPAP, have been distributed free of charge to all IUPAP Commission members and to participants in several physics education conferences and one physics competition, IYPT, held in Winterthur, Switzerland in July 2005.

Physics Now and the previous ICPE book "*Connecting Research in Physics Education with Teacher Education*" are both available on the ICPE website for free downloading.

The *ICPE website*, run by Dean Zollman, is hosted at Kansas University under the address <http://web.phys.ksu.edu/icpe>

As mentioned above it contains the Minutes of our annual meetings, the two ICPE books as well as other relevant information on ICPE and related issues.

4. ICPE Medal

According to the stipulations for the ICPE Medal the recipient should have fulfilled the following two criteria:

- *The contributions to physics education should have extended over a considerable number of years, and,*
- *The contributions should be international in their scope and influence.*

Since the first medallist in 1980, up to and including the year 2000 ten men had received the medal. This trend was broken in 2002 when Tae Ryu, Tokyo, Japan and Lillian Mc Dermott, Seattle, USA, were chosen. During the period 2003 – 2005 another two highly esteemed physics education researchers were awarded the medal, namely Laurence Viennot, Paris, France in 2003 and Svein Sjoberg, Oslo, Norway in 2005. The 2003 medal was handed over

during the Durban Conference and the 2005 medal during the New Delhi Conference, by the inaugural speaker, India's President, Dr Abdul Kalam.

5. ICPE Working Groups

Between the annual meetings C14 works in groups with specific aims. Some examples are given from the decisions made in the 2005 annual meeting in New Delhi. The following topics were chosen for further studies:

- Publications on Physics Education Research,
- Information About Physics Teacher Education Programs at Universities, and,
- Strategies for Increased Participation of School Teachers in Physics Education Conferences.

The first two are meant to result in inventories which could serve as a source of reference, whereas the third aims at investigating methods of financing or otherwise facilitating the presence of school teachers in conferences. In the latter case it was recognized that it is also important to make the conference program more attractive to teachers, for instance by devoting some time to specially designed events.

6. Links to Scientific Bodies

C14 is happy to foster links to many different organisations, both global and sometimes regional in character, with aims wholly or partly identical to those of our Commission,. Some examples will be given below, high-lighting the particular contacts taken during the period 2003 – 2005.

- UNESCO: Very good relations have been built up with this world-wide cultural and educational organization. With a UNESCO official as a C14 associate member this has been very rewarding, in particular for the publishing activities.
- GIREP: In several conferences and seminars of this group ICPE members have been given main roles in the planning. We keep each other well informed about the activities of respective bodies. Next year's GIREP conference in Amsterdam was endorsed by C14 for IUPAP support.
- EPS: As mentioned above EPS has held its first conference on Physics Education in July 2005. Our Commission was represented by several members, and the Chair is also a member of the board of the EPS Division on Education.
- EUPEN and STEPS: Although the former thematic network has now ceased its activities, the follower STEPS (Stakeholders Tune European Physics Studies) and our Commission will be in close contact in the future.
- AAPT/APS: Several personal links between C14 members and these organizations make it easy to keep information channels open. It can be mentioned that the New Delhi Conference was supported by the International Committee of AAPT.
- ASPEN/LAPEN: Both the Asian (ASPEN) and the Latin American (LAPEN) Physics Education Networks, of which the latter is in the planning stage, are linked to our Commission members serving also in these.
- ESERA: The European Science Education Research Association, although not specially established for physics, is very active and organizes conferences on a regular basis. As mentioned above the C14 annual meeting in 2003 was organized in direct contact with an ESERA conference.

7. Concluding remarks

In 2006 ICPE will meet in Tokyo, Japan, directly after the conference planned there, in August 2006. Our Commission has endorsed the request from the organizers for IUPAP support. The theme is "Physics for all". Both teaching methods and the physics content will be on the agenda. Special efforts will be made to attract school teachers to the conference, not only from Japan but also from other countries.

Finally, on behalf of our Commission I should like to express our gratitude to the IUPAP Council for generous support for our activities during the period 2003 – 2005
Uppsala, Sweden, September 19, 2005

Gunnar Tibell

ICPE Chair 2003 - 2005