

ICPE Minutes
Durban, South Africa
July 9, 2004

Attending: Alarcon, Hyodo (Vice-Chair), Jolly, Luo, McFarland (Secretary), Pak, Pietrocola, Schlichting, Talisayon, Tibell (Chair), Vicentini, Zollman

Regrets: Dissanayake, Grayson, Molto Gil, Ogborn

Absent: Treiner

1. Introduction

1.1 Welcome (Tibell)

Tibell opened the meeting at 9:00 a.m. by welcoming the attendees. Len Jossem, frequent guest and former chair, was unable to attend and sent regrets. A list of names, addresses, and contact information for C14 members and associate members was circulated for corrections and updates. McFarland will inform IUPAP of the required changes in the information.

1.2 Minutes of the 2003 Meeting in Noordwijkerhout

The minutes of the 2003 Meeting, which had been circulated previously by email, were accepted.

1.3 Agenda 2004

The agenda was presented and approved.

2. Reports on Conferences and Other Events

2.1 SAIP, "What Physics Should We Teach?" – Durban, July 5-8, 2004

There was considerable discussion about the just-finished conference. Concern was expressed about the poor attendance (only about 70 attendees), although the small numbers did give an opportunity for good bonding and collegiality. Participants were impressed with the high quality of the posters. There was some disappointment about the lack of physics teachers, as well as the small number of participants from other African countries. The small group discussions offered the possibility of close interaction with colleagues, but because the composition of the groups remained constant for the entire conference, the participation waned after a few days. Also, such discussions can be difficult for people for whom English is not the first language. There was some concern about the absence of a public lecture during the conference. The lack of a local organizing committee might have influenced the fact that foreigners did not receive any orientation (maps, brochures) about the city and country they visited, some for the first time. The same is true for exhibits regarding domestic practices having to do with physics teaching.

2.2 International Young Physicists' Tournament (IYPT) 2004

Tibell reported that 26 teams of upper secondary school students from a record of 24 countries participated in the 17th IYPT, held in Brisbane, Australia. New for this year were teams from Brazil, Cyprus and Kenya. The winner was the Polish team who discussed the physics of the didgeridoo, an Australian music instrument used especially by the aborigines. Runners-up were teams from Germany and Slovakia. Next year the competition will be organized in Switzerland, a country that can be considered as a centre of celebration for the International Year of Physics 2005.

3. Future Conferences

3.1 "World View on Physics Education in 2005: Focusing on Change," New Delhi, India, August 2005

Jolly is organizing a conference in New Delhi, India, in 2005 to focus on innovative ways of teaching and learning physics. She presented an overview of the plans so far. Although the Commission had voted in 2003 to approve and support the conference, there have been some minor changes in the proposal, and after discussion the Commission re-affirmed its support for the conference. Tibell pointed out that IUPAP knows of the Commission's support in 2003.

The proposed dates for the conference are August 28 to Sept. 2, 2005. Many Commission members expressed a preference for moving the conference earlier into August. Jolly pointed out that we should avoid the monsoon season, which continues into early August. She will explore the possibility of moving the conference dates to August 21-26 (approximately).

Jolly welcomes suggestions concerning conference format, etc. It was generally agreed that the conference should have contributions from people from many countries, including developing countries, and should have an appropriate gender distribution.

Commission members are asked to provide Jolly with contact information for physics educators in their respective countries so that conference information can be distributed as widely as possible.

3.2 "CRESILS – Contribution of the research to enhance students interest in learning science," Barcelona, Spain, August 28 – Sept. 1, 2005

The proposal for the CRESILS conference was reviewed and discussed. The Commission decided not to support this conference because it relates to science, not physics, and because the Advisory Committee and Program Committee consist solely of members from Europe.

3.3 World Conference on Physics and Sustainable Development, Durban, South Africa, October 31 – November 2, 2005

Alarcon reviewed the draft information about the World Conference on Physics and Sustainable Development, which had been circulated to the Commission by email prior to the meeting. For each of the conference themes, a Program Committee and Advisory Committee will be needed, and a web-based Discussion Group will be created. Pietrocola, Talisayon, and Zollman agreed to serve on the Physics Education Program Committee. As well, a representative from China will also be on this committee; Luo will provide the name.

3.4 Other Conferences

Hyodo indicated that there is the possibility of a conference in Japan in 2006 that will seek ICPE support. The conference might involve a collaboration between Japan and China. Tibell reported that he was invited to Japan by the Japan National Tourist Organization for a week in March. This visit was intended to provide a tour of possible conference venues for a future meeting, sponsored by ICPE. During the visit Tibell had an opportunity to meet with Hyodo as well as our 2003 ICPE medalist Tae Ryu, both of whom were hopeful that a conference could be arranged in 2006.

4. ICPE Finances

4.1 Past, Present, and Future Situations

Tibell reported that compared to a year ago the ICPE finances are now much healthier. Alarcon provided excellent assistance in developing an application for UNESCO funding for the Newsletter. This resulted in a UNESCO grant of US\$3000. As well, US\$5000 was received from IUPAP for printing and mailing “Physics Now,” and Jolly has been able to locate an inexpensive printer in India. More information about the printing of the book is given under agenda item 5.2.

The ICPE “treasury” has a small amount of money, enough to provide food at the 2004 annual meeting and two-nights accommodation for some ICPE members.

5. Publications

5.1 ICPE Newsletter

Talisayon (the Newsletter editor) distributed financial statements for the April 2003, October 2003, and July 2004 Newsletter, showing a net balance of US\$0.00. Talisayon proposed that some different ICPE members should be involved in editing and producing the Newsletter. McFarland suggested that perhaps Talisayon and Jolly could work as co-editors for 1-2 years, and then Jolly could assume the entire responsibility. Jolly indicated that she is not interested yet, but will look into the cost of printing the Newsletter in India. Talisayon and Jolly will discuss details as information becomes available.

5.2 and 5.3 ICPE Books

The ICPE book “Physics Now” is now available online at <http://web.phys.ksu.edu/ICPE/Publications/PhysicsNowText-A4.pdf>

The original intent was to print 1000 copies of the book in India. However, the Indian Association of Physics Teachers has ordered an additional 500 copies. As well, 1000 books will be printed for UNESCO at their expense, and these books will be distributed free of charge at UNESCO workshops. Thus, the total printing is now 2500 books.

Len Jossem’s report and statistics on number of “hits” on the website containing the books “Connecting Research in Physics Education with Teacher Education” and “Physics 2000” were reviewed and discussed. There seems to be continuing interest in these books. McFarland will contact Jossem to suggest that he change his web link from “Physics 2000” to “Physics Now.” Regarding “Connecting Research ... Education,” a working group will explore the possibility of developing a new edition (Volume 2) of this book. The working group members are Jolly, Talisayon, Pietrocola, Schlichting, and Vicentini.

5.4 ICPE Website

Zollman continues to host the ICPE website at Kansas State University (URL: <http://web.phys.ksu.edu/icpe>). Commission members were encouraged to establish links to this site, so that it will show up on search engines. Zollman will add news about our latest ICPE medal recipient, Laurence Viennot, to the website, and will establish links to the Newsletters. He welcomes other suggestions for improvements to the site. Zollman will ask Joe Redish to take down his former ICPE site to avoid confusion.

6. Working Groups

6.1 Working Group re: Publications on Physics Education Research

This group, established in 2003, consists of Alarcon, Jolly (Chair), Talisayon, and Zollman. Jolly re-iterated that a collation of articles on physics education research (PER) would be very useful for teachers in developing countries. With the discovery of an inexpensive printing company in India for “Physics Now,” the production of a PER-article collation at reasonable cost appears possible. The group will continue to explore this project. Alarcon wishes to resign from the group, since such a publication is not extremely useful for the teachers with whom she works.

6.2 Working Group re: Information About Physics Teacher Education Programs at Various Universities Around the World

Talisayon, who is Chair of this Working Group, commented that it is easiest for working groups to have their meetings on the same days as the ICPE. It is difficult to conduct “meetings” via email. Talisayon has collected information from the world-wide web on the physics education programs at 10 English-speaking universities. Because the information on the web is not standardized, it would be useful to have a standard set of follow-up questions. Vicentini might be able to provide information about a European survey of physics education programs. The group, which now consists of Alarcon, Luo, Pietrocola, and Talisayon (Chair), will continue to work on this venture. The next step will be to develop an instrument (i.e., a questionnaire) to be sent to two universities in each country.

6.3 Other Working Groups

As stated under agenda items 5.2 and 5.3, a working group has been established to explore the possibility of developing a new edition of the book “Connecting Research ... Education.”

7. Future Activities

7.1 World Year of Physics (2005)

It was reported that various activities to celebrate the World Year of Physics in 2005 (WYP 2005) are being planned by many countries (Germany, China, USA, Canada, Italy, etc.). The United Nations has declared the year 2005 to be the International Year of Physics (IYP). India and Switzerland will have commemorative stamps created for the IYP.

It was suggested that, at the World Conference on Physics and Sustainable Development in Durban in 2005, perhaps there could be a session on outcomes regarding interactions and connections between physics educators and physicists.

There is a proposal to have a Physics Talent Search in 2005. Participating countries will identify physics-talented girls and boys. Countries will establish their own selection process, consistent

with criteria that have been set out already. If at least 10 countries from three continents or at least 15 countries from fewer continents choose to participate, then the Physics Talent Search will receive the approval and endorsement as an international or global activity of World Year of Physics 2005 (WYP 2005). If fewer countries (or continents) participate, then the talent search will be a national-level activity. Each participating country will form a WYP 2005 Physics Talent Search National Committee, which will be responsible for designing, publicizing, and executing the program in the country.

A suggestion was made that Zollman should establish a link from the ICPE website to the WYP 2005 site (www.wyp2005.org). Commission members were encouraged to check out the WYP 2005 site for information about events, and to add events if they want. Commission members should submit web addresses of WYP 2005 events that are related to physics education to Zollman for inclusion on the ICPE site.

7.2 Other Projects and Activities

7.2.1 Latin American Physics Education Network (LAPEN)

Pietrocola reported on the Latin American Physics Education Network (LAPEN) that is working to improve the teaching of physics in middle-grade education and to prepare teachers at this level. This project will have a network group that involves various countries in Latin America and will be coordinated by a management group from a smaller group of countries. Pietrocola and Molto Gil have been in communication, and there will be a physics-education conference in Brazil in September 2004 at which the Network will be started. The organizing group feels that it will be best to start by focusing on teacher-training. The countries involved are Argentina, Uruguay, Mexico, Cuba, Colombia, Brazil, and Venezuela.

7.2.2 Other Activities

Tibell reported that in Germany in 2005 the Physics Education Division of the European Physical Society will hold a physics-education conference – EPEC1 (European Physics Education Conference 1).

8. Links to Scientific Bodies

8.1 IUPAP

Tibell reported that earlier this year a report had to be produced for IUPAP on the activities of ICPE; Tibell and McFarland created the report. As well, information had to be provided to IUPAP on “priority area assessment on capacity building.”

Tibell reported also on the maximum conference fee for IUPAP-supported conferences. This fee used to be \$US500, but because of the large changes in currency-exchange rates, especially the fall of the \$US relative to the Euro, IUPAP is suggesting that the maximum fee be changed to 460 Euros. The IUPAP Council will soon vote by email on this issue.

Another item of news is that there has been a IUPAP Workshop on Scientific Misconduct, and some guidelines are being created.

8.2 UNESCO

Alarcon reported that under the UNESCO Programme in Physics, a major initiative in Physics Education was started in 2002. This initiative organizes and supports workshops on topics in

introductory university physics aiming to introduce active learning adapted to the local context and improve conceptual understanding of teachers using demonstrations, hands-on activities with traditional equipment (non-computer-based), inexpensive materials, as well as computer-based activities. The present focus is on training trainers and resource persons.

In 2003 Alarcon, with the UNESCO Active Learning Training Team, gave a workshop in Ghana. Part of the agenda was information-sharing on physics curricula and teaching methods. The activity gave the team first-hand information on actual conditions for physics teaching. In Ghana, the team worked with teachers who were very enthusiastic about active learning. Recently, some members of the team have recommended the publication of a training manual and provision of materials, to be used during workshops and left with teachers afterward.

A project on promoting active learning in optics and photonics has been started in cooperation with ASPEN, ICTP, and the International Society of Optical Engineering. A working group has been set up and has decided to focus on selected optics themes. The working group has produced its first set of learning modules that will be tried out in a workshop in Ghana in November 2004. Ghana has one of ICTP's centers of excellence in optics.

As stated under agenda item 4.1, \$3000 has been received in 2003 from UNESCO to support the Newsletter.

8.3 EPS

As reported under agenda item 7.2.2, the Physics Education Division of the European Physical Society will hold a physics-education conference – EPEC1 (European Physics Education Conference 1) in Germany in 2005.

8.4 AAPT/AIP

Zollman reported that the International Committee of the AAPT is still active, and that it arranges invited sessions for each AAPT Meeting. In the future there will be talks by international speakers as part of other sessions at AAPT Meetings.

There was no report regarding AIP, but Zollman indicated that APS has an Education person and an International person on staff.

8.5 Others (ASPEN, GIREP, ...)

Alarcon reported that ASPEN might be involved in an active-learning workshop in Thailand or Malaysia in the near future.

9. ICPE Medal

9.1 Presentation to Laurence Viennot

The ICPE Medal was presented by Tibell to Laurence Viennot at the Durban conference that immediately preceded the ICPE meeting. It was suggested that a photograph of the presentation should appear on the ICPE website.

9.2 Future Medal Recipients

A nomination for a possible medal recipient had been received from Ogborn prior to the ICPE meeting. A decision on this candidate was postponed.

Commission members were reminded that nominations for ICPE medal recipients must be received with supporting materials prior to the ICPE meeting, and that names of suggested recipients will not appear in the minutes of ICPE meetings.

10. Other Business

There was discussion of the “Summary of Recommendations Future Action” from the ICPE/SAIP Durban SA Conference Moving Forward Session. In particular, there was discussion of Recommendation #4, which requested that “ICPE form a committee comprised of individuals who have attended this Conference to work with the sponsors of two upcoming international conferences ... to suggest how the recommendations carried forward ... can ... serve as the basis for educational outcomes that members of the international physics community can work toward in future years.” In the discussion it was pointed out that on the organizing committees of the two conferences (“World Conference on Physics and Sustainable Development,” and “World View on Physics Education in 2005: Focusing on Change”) there are already representatives who attended the Durban conference. Commission members stated that they do not want to restrict and influence the outcomes and creativity of participants at future conferences, and affirmed that they do not accept Recommendation #4.

11. Next ICPE Meeting

It was agreed that the next ICPE meeting will be held for one or two days immediately following the conference in New Delhi, India, in August 2005.

13. Adjournment

The meeting adjourned at approximately 6 p.m.