

September 28-29, 2001
Mexico City, Mexico

Participants

Present: R. Barber, K. Binder, M. Cardona, G. Daigle, J. Franz, B. Frois, T. Gaisser, H. Godfrin, P. Kalmus, I. Martinson, J.L. Moran-Lopez, F. Parak, Y. Petroff, D. Rowe, J. Sahm, K. Sharma (for B.W. Petley), G. Sincerbox, R. Turlay, H.M. Van Driel (for R. Lang), H. Yasuoka, E. Zingu

Present by conference phone: *B. Richter (President)*

Absent: A. Ardeberg, W. Camp, M. MacCallum, C. Murray, J. Nilsson, B. W. Petley, F. Sluiter, G. Yang

Guest: G. Contreras Puente, President of the Mexican Physical Society (morning only).

IUPAP Staff: E. Ridgway

In the absence of President Burton Richter, who was recuperating from surgery, President Designate, Yves Petroff, called the meeting to order. Richter later joined the meeting by conference phone. Petroff introduced Dr. Gerardo Contreras Puente, the President of the Mexican Physical Society, who welcomed the group to Mexico and UNAM where the meeting was held.

Approval of Minutes

The minutes of the 2000 meeting in Beijing, China were approved with minor changes.

ICSU Matters

Discussion focused on the importance of IUPAP's involvement in a proposed statement on the importance of basic science. Richter said that he has sent a message to Larry Kohler, Executive Director of ICSU, asking him to take a lead, noting that IUPAP would like to take an active interest and asking him to put us in contact with the proper individuals. To date Richter had not received a response.

Frois next distributed a paper on nuclear energy entitled *A Fresh Look at Nuclear Power*. He suggested that IUPAP formulate its own statement on nuclear energy using this paper as a basis. The document would then be ready when needed. Turlay identified the need to appoint a person responsible for each of the issues of ICSU. He felt that it is not enough that the IUPAP President covers them. He asked Martinson on how Sweden managed the large percentage of nuclear power being used there. Martinson said that this is a very political issue. He said that Sweden has shut down one reactor and plans to shut down a second one in 2003. It may now have to buy electricity from Poland and Lithuania. Van Driel stated that the paper does not address public perception of nuclear energy and noted that education of the general populace is extremely important. Cardona cautioned the group not to disparage alternative energy sources.

Petroff agreed that the paper provided a good starting point. He suggested appointing subgroups on each of the ICSU issues to work with him and Richter in preparing draft papers. The members of the subcommittee for Nuclear Energy were selected as follows: B. Frois (Chair), I. Martinson, and F. Parak. A draft report is to be submitted to Richter and Petroff by the end of the year. The report will be circulated to the Council for approval.

To ensure representation of the entire group, Frois asked that the commissions submit comments to him in the near future. He stressed a special need for input from Asia. Franz will send Frois a copy of a similar paper being proposed by an APS group. Barber will send a copy of a formal paper covering the Canadian perspective to Richter and Frois.

Capacity Building activities: At its February 2001 meeting, ICSU requested that the Unions identify the capacity building needs of each country, to prioritize the strategy at the Union level, and to report these to ICSU/UNESCO. Petroff suggested making a list of all IUPAP commissions actively involved in capacity building and solicit input from those who have not yet responded to an earlier request from Richter. C13 was identified as a lead player. Zingu (C13) asked for a clear definition of "capacity building". The group responded that IUPAP help ICSU broaden its definition by including such items as "increasing the number of women in science".

Ethics and Values: ICSU currently has a Standing Committee on Responsibility and Ethics in Science (SCRES). Turlay has previously provided input on this to ICSU. ICSU would like to have an IUPAP representative on this committee. There was no strong support for this and the group felt that the information provided to ICSU absolved IUPAP from further consideration.

Access to Data and Databases: Richter noted that CODATA has been active in this and said that Butterworth is to be the lead. A small group is to be selected. Richter will find out if any action has taken place.

Sustainable Development: ICSU is to establish three targets for achieving sustainable development: health and well being; food/nutrition; and energy. Richter is to find out what kind of participation is required. Petroff and an additional member to be appointed by Petroff and Richter will work on this.

Basic Research: ICSU is also preparing a paper on the need for basic research. It was the strong feeling of the group that IUPAP should contribute to this. A small group will work on this: P. Kalmus, H. Godfrin and a third person in the field of lasers to be suggested by Sincerbox and Lang (C17).

Reports from Commissions

Commissions were asked to submit written reports that will be put on the IUPAP web site. Only the highlights of the reports are mentioned here.

C2 Sharma reported that two conferences were sponsored by the Commission. The Conference on Precision Measurement and Fundamental Constants in 2000, and the 3rd International conference on Exotic Nuclei and Atomic Masses in 2001. Two SUN-AMCO Medals were given this year.

Recipients of the awards were Dr. C.A. Hamilton and Professor T. W. Hänsch.

C3 Binder reported that the statistical community is in good shape. In 2001, the Commission held the STATPHYS 21 Conference in Cancun/Mexico. Binder reported an attendance 800 (a decrease from previous conferences) that is attributed to the expense of airline tickets to Mexico. The conference program consisted of 7 plenary talks, including two Boltzmann Award lectures. The Boltzmann awards this year went to Berni J. Adler and Kyozi Kawasaki. STATPHYS 22 will be held in India in 2004

C4 Gaisser told the Council that C4 is the standing international advisory committee for the International Cosmic Ray Conference, the major conference in the field. This year the conference was held in Hamburg. The 2001 O'Ceallaigh award was awarded to V. Ginzburg and the Duggal Award for an outstanding young scientist in the field was awarded to Teresa Monatruli. The next meeting will be held in Japan 2003, and in India in 2005.

Gaisser said that he had received a proposal from their Russian commission member Olga Ryazhskaya. She proposed that Russia could make a valuable contribution to the international projects of the cosmic ray community. Since the Russian government does not have the funds to allow full-scale participation of Russian scientists in international collaborations, she suggested their participation by providing expertise, including the production and delivery abroad of necessary materials, instruments and equipment components in lieu of paying off a part of the national debt. He forwarded the proposal to Richter who forwarded it to the Global Science Forum. Consensus was that it should be discussed at OECD Global Science Forum since it involves governments.

C5 Godfrin reported that the Conferences sponsored by the commission have been going well. The last conference was held in Helsinki and the commission accepted a proposal to hold the next conference in Japan. He pointed out that countries like Japan have problems in adhering to the IUPAP registration limit of \$325. Discussion focused on raising the limit and Cardona told them that his commission has solved this problem by including such things as box lunches in the registration fee.

Godfrin said that the Feinberg Metal Selection Committee has sought advice of the commission.

C6 Parak reported that the main activity of his commission was with the 4th International Conference on Biological Physics held in Japan. There were a number of new topics that attracted more than 750 participants. Unfortunately, the topics are in direct competition with those of the conferences held by IUPAB. The Council encouraged the Commission to continue to open its conferences to new areas in biological physics without competing with IUPAB. The next will be held

in Sweden in 2004.

C8 Cardona reported that the conference held in Osaka drew 1500 participants and was a financial success. A highlight of the conference was the opening speech given by the Japanese Prince. The speech is included in Proceedings. The year 2000 awards for the Young Author Best Paper were presented to five young scientists.

Cardona said that the commission has noticed a decrease in participation of industrial physicists at its conferences. They are now trying to remedy this by working to bring industrial companies into the conference. Members felt that many industrialists were unwilling to share their newest research with others fearing the commercial competition. Industrial physicists are also holding their own conferences.

C9 Yasuoka pointed out that the Commission on Magnetism is not so active during this year, because the main conference of C9 was just over. He said the ICM Conference held in Brazil in 2000 was a great success. The next conference is scheduled in Rome in 2003, followed by one in Japan in 2006. The organizing committee has been formed. He said that the Commission must replace 4 people at the next General Assembly and is having problems limiting its nominations. He asked if the number of members is limited to 13 people and was told that the commission must adhere to the bylaws.

C10 was not represented at the meeting. Franz told the Council that the Vice Chair had asked to resign. Murray (C10 Chair) has asked that P. Monceau be allowed to serve as both Secretary and Vice Chair until the next General Assembly. A report is available under Commission 10 on the IUPAP website.

C11 Kalmus informed the Council that the Commission met in July at the Lepton-Photon Conference in Rome. They considered suitable candidates for chair and secretary before the meeting.

Recommendations for members will be considered over the next few months by email. He said the next International Conference on High Energy Physics is to be held in Amsterdam in 2002. The 2003 conference is to be held at Fermi Lab in the USA and the 2004 in Beijing. C11 accepted a proposal from the organizers that the Proceedings from the Amsterdam conference be in a CD-ROM format for participants and as bound copies as archive material for libraries. An innovation at the Rome Lepton-Photon Conference was that all speakers were asked to submit their slides in electronic PDF format. This worked well and as a result all talks were accessible on the web without delay. Amongst the most interesting topics at Rome were results on CP violation and on neutrino oscillations.

C12 Frois reported that the commission met during the International Nuclear Physics Conference in Berkeley. At IUPAP's request, the commission discussed nuclear energy in the context of global warming and concluded that nuclear energy plays an important role in the production of world energy. Although solutions exist for the disposal of nuclear wastes, there is a tremendous need for public education since most problems perceived with nuclear power deal with societal issues.

The International Nuclear Physics Conference in Berkeley was well attended but Frois noted that attendance from the major US labs, such as CEBAF and Brookhaven was very poor. He asked what is going on? Are US politics involved? Richter asked Frois to give him the information and he will check with the lab directors.

Discussion then focused on energy research.

C13 Zingu briefed the Council on the difficulties faced by this commission in particular and the developing nations in general. The Commission has problems getting its members together to meet and stressed the importance of meeting face to face. Binder suggested having the commission meet with a general physics meeting to give people a reason to use funds from research grants to attend. The EPS holds a general conference on fore fronts in physics every two or three years and this would work well. It was generally accepted that this would be a good idea.

Zingu said that C13 initiated a series of conferences in 1994. These conferences were to be held every other year, but this has not happened. He noted that the commission had received six applications for conference support 6 years ago but applications have dwindled to two last year and none this year. This may be because they have given up since IUPAP in the past failed to approve funding and potential organizers may not know where else to obtain funds.

Zingu stated the membership of C13 should mainly come from developing countries, but that the majority of developing countries are not members of IUPAP. He suggested that each member of IUPAP from a major developed country sponsor a member from a poorer country, such as Sweden is currently doing.

The Council then reviewed the role of C13 and determined that more involvement is needed in the workings of developing countries by commissions other than C13. How can the various commissions do this? Richter hesitated to have other commissions take on extended roles. Everyone agreed that commissioners should come from developing countries to make it work better. It was suggested that maybe the funding for this commission should be increased. Franz pointed out that this is already being done. The question is -- how much?

C14. Sahm informed the Council that the mandate of the commission is to promote the exchange of information among the members of the physics community. To do this, ICPE decided to set up a network of scientific links worldwide dedicated to physics or science education. ICPE is aware of changes in various fields of physics, changes in the goal of physics education, interest of students in physics, etc. and is developing long-term priorities. The Commission has identified a number of changes to which physics educators need to respond and hopes to develop activities to address these needs.

Sahm said that the Commission met in Seoul in conjunction with the ICPE meeting. The conference attracted 300 participants. ICPE decided to replace one of the associate members to C14 due to the retirement of Dr. Raither. Sahm asked for Council approval for the appointment of Minella C. Allarcon from UNESCO as a new associate member of C14.

C15 Martinson said that the ICPEAC conference in Santa Fe this year was very successful. He said that there is a meeting every two years and the next one has been scheduled for 2003. He reported that the Commission has started a discussion about developing closer contacts with other atomic/molecular societies such as DAMOP in North America and the Atomic and Molecular Physics Division of the EPS. He said the Commission is in the process of finding new members for C15. He then discussed some recent findings in the field.

C16 was not represented at the meeting. A report will be available on the website.

C17 - Van Driel reported that quantum electronics is a very healthy field. There are many new inroads in the biological and industrial fields. Since the field is very broad it is difficult to get members of the commission together at a conference. Therefore, most of their work is done by email.

He said that two conferences were held this year that were very successful and well attended. He pointed out that the influence of IUPAP on their conferences is waning. Societies such as SPIE and OSA are making a significant impact by holding meetings and serving their membership with publications. He said that the registration fees for these conferences exceed IUPAP guidelines, so IUPAP can't participate.

C18 Rowe said that this commission did not meet this year but did most of its business by email. They will meet next year. He identified the need to broaden the mandate of Commission 18. He pointed out that there are currently two groups that have separate conferences - mathematicians and physicists. The objective is to get the mathematicians and the physicists to interact. Richter informed Rowe that a change in the Commission's mandate must be approved by GA and asked him to submit a written proposal of changes if they want to proceed.

Rowe said that the commission is waiting to hear from the Liaison Committees before they select nominations for their new commission members.

C19 had no representative at the meeting. Turlay pointed out that lack of communication is a real problem with this Commission. He stated that only one email had been received in the Secretary General's office during the past three years. It was pointed out that this important commission should have more participation in IUPAP affairs. Richter will write to the Chair on this subject.

C20 was not represented at the meeting but Binder commented on two conferences held during the

last two years. Last year's conferences attracted 200 participants and this year's 400. He pointed out that 100 participants this year were from the former Soviet Block and said that scientifically it was a very nice conference.

AC1 Sincerbox explained that the International Commission for Optics is unique. Their major focus is to promote development of optics in the less developed areas of the world. He said that the ICO membership includes forty-five territories and professional societies that pay dues. It has an annual budget of \$32,000 derived totally from dues. From this it sponsored 16 international conferences last year with average funding between \$1,000 and \$3,000. The funding is to be specifically used to provide travel support to participants from developing countries.

In addition to the 2001 ICO Galileo/Galilei award that was presented to Kehar Singh, and the 2001 ICO prize given to Nabeel Riza, the ICO provided support for various other prizes.

AC2 was not represented at the meeting. Their report will be available on the IUPAP website.

AC3 Daigle reported on the 17th Triennial Congress in Acoustics that was held in Rome. 1400 papers were presented. He said the ICA has 45 dues paying member societies and a budget of about \$12,000 per year. It is anticipated that a number of new members will be added this year.

In response to requests from member societies, a grants program has been established for early career scientists that acknowledges the outstanding research contributions of acousticians for young and early-career scientists. ICA has also established and maintains an acoustics website and supports conferences not sponsored by IUPAP. Plans to establish Acoustics award are in the works.

Reports from Working Groups

ICFA: Kalmus reported that ICFA held two meetings this year -- One at DESY in Hamburg and a second one in Rome. The group will meet again in February and July of 2002.

He said that ICFA has been considering the idea of a "Global Accelerator Network" (GAN). The thought is to build, maintain, and control large machine as a joint project. Two task forces were set up; one to look at the technical considerations and the other at the socio-political aspects. The conclusions of the second subgroup pointed to

- a) the need for an existing host or nearby laboratory,
- b) not too many funding agencies (small group of partners),
- c) host state makes large contribution; others make both cash and in kind contributions,
- d) labs not hosting should diversify to remain scientifically healthy.

The Global Science Forum (OECD) has formed a Working Group on Facilities for High Energy Physics. This group met July 2001 at CERN with fifty people representing 20 countries. The discussion focused on:

- a) What type of facility should be built next?
- b) Should it be sited at an existing lab?
- c) Should it pursue the GAN concept?
- d) Should European contributions be through CERN?

Kalmus said that visa and customs issues must also be considered.

Other activities of ICFA included the problems encountered in inter-region electronic connectivity, the consideration of technical items such as beam dynamics, and workshops and instrumentation schools which would help physicists in developing countries.

PANAGIC: Gaisser explained that the Particle and Nuclear Astrophysics and Gravitation International Committee is an inter-commission group of 15 members established by IUPAP in 1998.

The group has met four times since its inception and has two subcommittees: the Gravitational Wave International Committee and HENAP (the High Energy Neutrino Astrophysics Panel). He reported that HENAP is currently working on a report that will be completed next year. One conclusion is that two neutrino detectors are necessary - one in the northern and one in the southern hemisphere.

Gaisser felt that the PANAGIC membership is well balanced and adequately represents the sub-fields. PANAGIC feels that it has accomplished a large fraction of the work program set up at its inception. It regularly holds meetings that are well attended. However, much more work is needed

and PANAGIC seeks the approval of the IUPAP Council of a renewed mandate for a period of six years.

Communication in Physics: A written report by M. Blume was available for the group and will be posted on the web. Franz commented that in the first report of the Working Group, which is now on line at <http://www.iupap.org/finalrep.html>, a major recommendation was to convene a conference on Long Term Archiving of Digital Documents in Physics. This conference is now scheduled for November in Lyon, France. (see website for focus of conference) .

Facilities for Condensed Matter Physics: Parak reported that the Working Group has concentrated on the problem of future neutron sources. Their first meeting was held in November 2000 in Japan. Parak reported that the Working Group at first was not accepted favorably by the meeting participants. Discussion focused on how IUPAP could help neutron scattering sources. However their attitude changed after Parak presented his report. He encountered an entirely different attitude at the second meeting now that IUPAP is involved -provided it is not at the expense of the other physics fields. It was suggested that other groups should be represented. Richter offered to write to other Unions to elicit their help or participation.

Yasuoka gave a report on the OECD workshop on large facilities where he represented the Working Group. The members of the workshop are to produce a report which he will submit to IUPAP.

Working Group on Women in Physics: A written report by M. Barbosa was available for the Council and will be placed on the web. Franz mentioned that the International Conference on Women in Physics is the first large, international conference ever put on by IUPAP itself. She reported on funding for the conference. Most of the participating teams will need help with their funding. To date, approximately \$300,000 has been raised in addition to funding from countries supporting their personal teams. Since there is a financial uncertainty until a response is received on the remainder of the funding requests, Franz asked IUPAP to underwrite \$25,000 in addition to the \$25,000 contribution it has previously approved. Franz said that over 60 countries will be represented and distributed a list of team leaders and plenary speakers. When asked about expected results, Franz pointed out that there has already been a major effect in Japan that has generated great excitement - Japan has set up working group on women in physics. Much more is expected after the conference.

Business Matters

Commission C10 - Vice Chair, Ken Ando, has resigned from this commission. This has created a vacancy. The Commission asked that P. Monceau be appointed to serve as Vice Chair as well as Secretary until the next General Assembly.

Inter Union Delegates - Turley reported on Inter-Union committees and joint initiatives. Some are considered very active (i.e. COSTED) but others do not respond to IUPAP inquiries. The question was raised whether or not the representatives know what constitutes their role as IUPAP delegates. For instance, do they know that they are to submit a report to IUPAP. Richter is to send an inquiry to each group to find out what is going on and if it is worthwhile to continue to send an IUPAP representative.

Financial Report - Franz presented the final budget report from 2000 and gave an update on the 2001 budget. She then presented a proposal for the 2002 budget. She noted that the estimated income from dues is optimistic because some countries are continually in arrears. Discussion centered around the feasibility of an increase in membership dues. Richter said that IUPAP had not requested a raise in nine years and that perhaps the level of IUPAP activities has been stepped up so that an increase is justified. Binder pointed out that conference sponsorship is one of the most visible activities of IUPAP and suggested raising the conference and travel awards. There was general agreement that this would be desirable.

Gaisser then asked how to get funding for Summer Schools in Mexico. He was told that this could come out of working group or commission funds depending on which IUPAP group was the sponsor.

Conferences

Barber presented the pros and cons of each conference submission which were then discussed by the group. He said that there are nine Type A Conference submissions (one without a funding request), and ten Type B conferences. Barber made a motion to increase the grants for Type A conferences to \$10,000, grants for Type B conferences to \$5,000, and travel grants to \$4,000. The motion was seconded by Franz and approved.

Barber discussed the problems with conference fees in regard to currency fluctuations. It was suggested that for 2003 and beyond increases in the conference fees be determined with $\frac{1}{2}$ of the registration fee calculated on the basis of US\$ and $\frac{1}{2}$ on the Euro. Franz proposed that for 2002 the conference fee be raised to \$350. This was unanimously approved.

Zingu pointed out the value of media coverage at conferences and suggested that IUPAP urge organizers to arrange press coverage at large IUPAP sponsored meetings. It was decided that Ridgway would include a sentence in the conference award notifications urging organizers to publicize the exciting physics at their meetings as broadly as possible.

Barber asked the commissions to give him any available information about conferences scheduled for 2003 and 2004.

Saturday, September 29, 2001

Statutes and By-Laws

Richter discussed the proposed revisions to the IUPAP Statutes and By-Laws.

Changes in the By-Laws:

II (A) 2. First line - there shall be no more than one Commission member from any IUPAP Member.
3 & 4. Change - Member (of IUPAP) shall be in upper case and member (of Commission) in lower case

There was a discussion of whether requirement of industrial members in II (A) 4 are unrealistic. Most people wanted to weaken the wording to stress that industrial memberships are encouraged, but no formal exception should be required.

II (B) 4. Changed to "shall not exceed three consecutive terms ."

III (A) 1. a. shall read "nominations to Commissions and Council shall...."

b. change one month to "six weeks"

d. add "at the GA of the persons not on the Council slate" after nominations is first line. 4th line should read - "The Council will then prepare...."

Discussion centered on statements made on behalf of IUPAP. Consensus was that three years is too long to wait for approval from the General Assembly on many statements and a new mechanism was needed. Section V was added as follows:

It was suggested that a Section V be added on statements. Presently statements can only be made every three years when the GA meets. A change was agreed upon that IUPAP statements can be made by the General Assembly, and between General Assemblies statements can be made by the Council in the name of the IUPAP Council. Statements must have majority vote of the Council. (Commission chairs may be consulted but do not vote on this).

Statements can now be made by commissions on narrower topics. "Commissions may make statements in their area of expertise with the approval of the President"

Changes in the Statutes:

IV (e) typo III (A) on second line of same paragraph.

Section VI (D) should read "Vice-Chair or Secretary is an official delegate....."

Rowe then pointed out that the role of Commissions in III. (B) 2. is not adequately defined. He proposed adding an extra section that defines commissions and their tasks. Council agreed that it should be added. Rowe will send Canadian proposal to Richter.

General Assembly (GA)

Richter announced that the Council and Commission Chairs are to meet before the General Assembly on Monday, October 7-8, 2002. He proposed the general program for the General Assembly to be as follows:

- I. President's report,
- II. First round of elections,
- III. Financial report and dues,
- IV. Commission reports - written submissions,
- V. Working Groups - oral presentations,
 - Women in Physics,
 - Communications,
 - Condensed matter physics,
 - ICFA
 - PANAGIC
- VI. Statutes and Bylaws,
- VII. IUPAP Statements,
- VIII. ICSU report.

Sahm gave a briefing on the plans for the GA in Berlin. He said that the C&CC meeting will be held in the Magnus Haus and the GA at Humboldt University. He said that an excursion by boat through Berlin has been scheduled.

Petroff said he would like to meet with the outgoing and incoming officers after the GA, but it was pointed out that many of the new people would not be present. Richter proposed having a meeting of the new C&CC in January 2003 to avoid the expense of two C&CC meetings in the GA year, but he thought it would be better not to wait a year after the election for a meeting of the new Council. Franz then outlined the proposed nomination schedule. For the first time, IUPAP will make the nomination forms available on the web. Forms for the Liaison Committees and Commissions will be available on the IUPAP Home Page on January 1, 2002. Liaison Committees will be able to submit nominations until June 1, 2002. In early June the nominations will be available for viewing by the Commissions. Commission nominations may be submitted until September 1, 2002. At that time the nomination books will be prepared for the General Assembly. Liaison Committees may renominate candidates at the General Assembly but Commissions may not.

Other Business Matters

Gruber Foundation Prize: IUPAP has been asked to name one member of the Selection Committee. IUPAP selected Virginia Trimble to serve. The 2001 Prize was awarded to Martin Rees.

The Zadar Manifesto: Franz reported that she had received a document that was created in the wake of a meeting of the International Conference for Physics Students. This voiced student concern about uncertainty in the future of young researchers and lack of long-term security. She asked for a response from IUPAP. Although the Council was sympathetic to the students' concerns, it made no recommendations and asked Franz to draft a positive response stating that the physics degree is considered a serious degree worldwide and is looked upon as such. Petroff, Richter and Turlay are to review the letter.

Cardona asked whether IUPAP should recommend that sponsored conference papers be refereed. Gaisser voiced his objections that C4 conferences have those requirements. No consensus was reached, so no recommendations will be made.

Petroff thanked everyone for coming, UNAM allowing IUPAP to use their conference facility, Dr. H. Contreras, President of the Mexican Physical Society, and Dr. Carmen Cisneros, President of FELASOFI, for their hosting the meeting. The meeting was adjourned.