Minutes of the C&CC Meeting

Day 1 – 9th October 2017

University Rector Building- Superior Council Room

R. da Reitoria, 374, Cidade Universtária, São Paulo – SP,

CEP: 05508-220 Tel: +55 11 3091-3500

09:00 – 18:30

In Attendance:

1	Bruce McKellar	President	19	Alinka Lepine-Szily	Chair – C12
2	Kennedy Reed	President - Designate	20	Sandro Scandolo	Chair - C13
3	Rudzani Nemutudi	Assoc. Secretary General	21	Hideo Nitta	Chair - C14
4	Kwek Leong Chuan	Deputy Secretary General	22	Toshiyuki Azuma	Chair - C15 & Vice President
5	Monica Pepe-Altarelli	Vice-President at Large	23	Minh Quang Tran	Vice Chair - C16
			24	Deborah Kane	Chair - C17
6	Alex Hansen	Vice-President at Large	25	Manfred Salmhofer	Chair – C18
7	Vitaly Kveder	Vice-President at Large	26	Grazina Tautvaisiene	Chair - C19 & Vice President
8	Wenlong Zhan	Vice-President at Large	27	Hai Qing Lin	Chair – C20
9	Vanderlei Salvador Bagnato	Chair – C2	28	Yasuhiko Arakawa	President - AC1
			29	Beverly Berger	Secretary - AC2
10	William Phillips	Vice Chair – C2	30	Marion Burgess	President - AC3
11	Itamar Procaccia	Chair - C3	31	Simone Kodlulovich	Member - AC4
12	Karl-Heinz Kampert	Chair -C4	32	Igle Gledhill	Chair – WG5
13	John Saunders	Chair - C5 & Vice President	33	Tsuneyuki Ozaki	Treasurer – WG7
14	Aihua Xie	Chair - C6	34	Willem van Oers	Secretary – WG9
15	Belita Koiler	Vice Chair - C8	35	Lia Merminga	Chair – WG14
16	Xiaofeng Jin	Chair – C9	36	Michael Rubinstein	Chair – WG15
17	Raynien Kwo	Chair – C10	37	Sun Han	IUPAP Secretariat
18	Juan Fuster	Chair – C11	38	Maitri Bobba	IUPAP Secretariat

Observers:

1	Barbara Erazmus	Treasurer, ICSU
2	Xing Zhu	Council Member, Asia Pacific Physical Society (APPS)
3	Akintayo Adedoyin	President, African Physical Society (AfPS)
4	Michel Spiro	Nominee for IUPAP President-Designate & President, French Physical Society
5	Laura Greene	President, American Physical Society (APS)
6	Carlos Luis Trallero-Giner	Director of CLAF

Invited Guest Speaker:

1	Rogerio Rosenfeld	Vice President, Brazilian Physical Society

Absent with Apologies:

1	Cecilia Jarlskog	Past President	10	Jens Vigen	Chair, WG2
2	Phua, Kok Khoo	Secretary General	11	Chris Barty	Chair, WG7
3	Francis Allotey	Vice President at Large	12	Robert Tribble	Chair, WG9
4	Wenlong Zhan	Vice President at Large	13	Natalie Roe	Chair, WG10
5	Michael Thewalt	Chair, C8	14	Sheila Rowan	Chair, WG11
6	Lin Ni Hua	Chair, C16	15	Jon Samseth	Chair, WG12
7	Eric Poisson	President, AC2	16	Stephan Schlamminger	Chair, WG13
8	Fridtjof Nusslin	Chair, AC4			
9	Joachim Mnich	Chair, WG1			

1. WELCOME BY PRESIDENT IUPAP

Bruce welcomed all to the Council and Commission Chair (C&CC) meeting. He thanked Vanderlei and Alinka (Co-Chairs, local organising committee) for hosting the C&CC and the General Assembly (GA) at the University of Sao Paulo (USP). It is the first time that IUPAP is holding its GA in Latin America. He then invited Vanderlei to give his opening remarks.

2. WELCOME ADDRESSES

2.1. Welcome by Vanderlei Bagnato, Chair, Local Organising Committee

Vanderlei welcomed all to Sao Paulo, Brazil and to the USP campus, on behalf of the organising committee and Alinka. He thanked USP for offering the newly renovated Superior Council Room for these meetings. He gave a brief view on USP in general and mentioned that the reason they wanted the meetings to be held in Sao Paulo is because they wanted to improve the collaboration between IUPAP and Brazil, now that there are almost 10 delegates from Brazil in the various commissions.

2.2. Welcome by Rogerio Rosenfeld, Vice President of the Brazilian Physical Society (BSF)

Rogerio welcomed all to the NTU campus and began with a brief on the dynamics of Brazil and Sao Paulo, in general. He then described the growth of Physics research in Brazil, since the early 1800's and the setting up of BSF in 1966 and its collaborations since. He highlighted that the Brazilian government had cut the budget for science by about 44% and a further 15.5% cut is proposed for the 2018 budget. He urged IUPAP to stand alongside the Brazilian science society in protesting this cut. He mentioned that a letter signed by 24 Nobel Laureates had already been sent to the President of Brazil requesting no further cuts and highlighting the damage it will do to the development of science in Brazil.

Bruce thanked Rogerio and said that IUPAP will certainly take up his invitation to do something about the cut in funding for science in Brazil.

3. APPROVALS

3.1. Approval of the Agenda

The Agenda was approved by the present C&CC members

3.2. Attendance

Bruce introduced the members, those representing the absent Chairs – C8, C16, AC2 and AC4 and the invited observers. He also listed the apologies sent in.

3.3. Approval of the draft minutes of the previous meeting

The minutes of the previous C&CC meeting held in October 2016 were reviewed and passed without any comment.

3.4. Ratification of items approved by council by email since the last meeting

It was highlighted that there are usually many matters that need approval after the physical Council meeting and such approvals were sought via email and subject to the ratification at the next Council meeting. The list of items was read and ratified by the C&CC:

December 2016

- Terms of reference (ToR) for an IUPAC/IUPAP Joint Working Group to Examine the Criteria used to verify claims for the Discovery of New Elements.

February 2017

- IUPAP makes two statements about the executive order: border security and immigration enforcement improvements.
- India to increase shares from 8 to 15

March 2017

- Singapore to increase shares from 1 to 2
- Ruling on retiring commission members

April 2017

- Setting up WG15 – Working Group on Soft Matter Physics

May 2017

- IUPAP to support the 2022 – International Year of Basic Sciences for Development (IYBSD)

June 2017

- WG15 advises Council on its members

3.5. Matters arising from the previous minutes

There were no matter

4. REPORTS

4.1. President's Report

Prof McKellar highlighted the special events that happened over the year and also requested for preliminary thoughts on redesigning some structures. He spoke briefly on the articles he has written in the past year - *'What does IUPAP do for physicists'* (June 2017 Newsletter), *Reminiscences on being IUPAP President* (September 2017 Newsletter) and '*IUPAP and you'* (Physics Today, October 2017).

He thanked the past president, Cecilia Jarlskog for her devoted service to IUPAP. He highlighted the significant contributions made by her toward the modernization of IUPAP, which included - budget stability, moving the office to Singapore, placing increased emphasis on the improving the number and experience of women physicists, working on the interaction of IUPAP and IUPAC regarding new elements and also in making the GA more interactive and a less passive venue for receiving reports.

4.2. Secretary General Report

K K Phua was unable attend the meeting and hence the Deputy Secretary General, Kwek Leong Chuan presented the report.

He reported on the financial statements briefly and said they would be discussed in more detail under a separate agenda item. He recorded his appreciation to Maitri, Erin, Toh Miang and Sun Han for their work. He updated all that IUPAP now has its own physical premises at the Nanyang Technological University (NTU) and an MoU has been signed between the President of NTU and IUPAP.

IUPAP's facebook (675 likes as of 29 Sept 2017) and twitter account (165 following and 361 followers) have been active and all members are encouraged to use them. The secretariat has successfully published 10 issues of the newsletter. The 11th one is due in December and all commissions are requested to submit interesting articles (not conference reports) about their area of physics.

Significant progress has been made get Vietnam, Thailand, Brunei and Indonesia to be members. Kazakhstan and Uzbekistan have shown interest and they are being followed up. Pakistan has requested for reinstatement of their membership.

A total of 17 Young Scientist Prizes (YSP) have been awarded in 2017 of which 3 are for 2016. An inaugural C13 prize has been awarded to Prof Jorge Flores-Valdes and will be presented at the GA. Kwek proposed that a deadline be instated for the submission and presentation of the YSP for each year.

IUPAP and the Union of Crystallography (IUCr) have successfully won 300,000 Euro ICSU grant for the proposal on "Utilization of Light Source and Crystallographic Sciences to Facilitate the Enhancement of Knowledge and Improve the Economic and Social Conditions in Targeted Regions of the World". Working group 5 also put in significant effort to put up a proposal on "a global approach to the gender gap in physics, chemistry and mathematics' was successfully championed by IMU and IUPAP.

IUPAP is saddened to learn of the death of Yoshio Yamaguchi, who was the past president and the first Japanese physicist to be elected to that post. We are also sorry to hear of the passing of Pierre Binetruy, he served on the C4 commission on Astroparticle Physics since 2014.

5. PREPARATION OF SLATES FOR COMMISSION AND EXECUTIVE COUNCIL

Bruce gave an introduction on the nomination, recommendation and final selection process for the slates for the commissions and executive council. He highlighted that each commission does their selection independently and the overall recommendation done by the executive council needs keep in mind a rule – that the number of representatives from a member country should equal the number of shares the member holds. To do this exactly is impossible as IUPAP has a total of 261 subscribed shares and only 251 positions to be filled. The nominations received made this requirement even harder to achieve. Brazil holds 8 shares but received 15 nominations; Africa has 3 shares but received 7 nominations; Spain holds 8 shares had 14 nominations; Russia has 18 shares but received only 17 nominations; Norway has 3 shares but got only 1 recommendation to commission. This time a new requirement was introduced – each commission is to have at least 4 women members in each commission. The slates for commissions were put up tabulated by member country, its shares, nominations received from liaisons, recommendations made by commission chairs and the recommendation made to council by the nomination subcommittee.

The nomination subcommittee (NSC) is chaired by the President-designate and hence Bruce asked Kennedy to futher explain.

Kennedy said that the NSC had the task of carefully balancing good geographical representation of physicists, and shares held to recommendations made by commission chairs and the number of women on each commission. It

was found that most liaisons realised that if they nominated the good woman they had, then they have would have a much better chance of getting their nominees on the commission. WG5 (Women in Physics) had offered to make connections if liaison organizations or commissions were unaware of which women are in their fields, or how to find women in their fields. Bruce and Kennedy complimented the chairs on their efforts and success on nominating and recommending women to their commissions. For 13 of the 18 commissions the NSC had made changes to the slate recommended by the Commissions.

Slates for the all the commission were displayed.

It was objected that the Commission Chairs were not able to take into account the information on the geographical distribution of the recommendations of other Commissions and may have made different changes had they been able to do so. It was also pointed out the nominations from members continued to be received after the closing date. It was pointed out that the NSC makes recommendations to the Council which in turn makes recommendations to the General Assembly, and that this meeting was the opportunity that Chairs had to make those adjustments.

Considerable discussed followed, after which all slates were accepted except for C5 and C11. Two motions were put forward:

- a proposal from C5, in the slate proposed by the nomination subcommittee that the nominee from Italy be deleted and be replaced the nominee from Spain, a vote by show of hands was requested – 4 in favour; 0 against and the rest abstained **The C5 slate will be amended accordingly**
- a proposal from C11, to delete the people on the slate proposed by the nomination subcommittee from Hungary and Sweden to be replaced those from Portugal and Germany – 2 in favour and 2 against and a large number of abstainers. In the case of a tied vote the President has a casting vote to break the tie, and Bruce voted for the NSC decision. – **There will be no change to the C11 stale proposed by NSC**

The slate for Executive Council

Bruce thanked the two commissions who recommended women commission chairs. The only nomination received for President-designate was for Michel Spiro, the current president of the French Physical Society and inaugural chair of WG10. The past-president (Bruce McKellar) position is automatic, filled by the outgoing President. The nominations for secretary general (Phua Kok Khoo) and associate secretary general (Rudzani Nemutudi) were unopposed.

As a result of the decisions made at the last C&CC meeting, in October 2016, each of the vice-presidents at large will have a responsibility. Nominations were as follows:

- For finance – Enge Wang from China
- For Centenary – Monica Pepe-Altarelli from CERN (2nd term as VPL)
- For Gender Champion – Silvinia Ponce Dawson from Argentina (past chair of WG5)
- For New Members – Nithaya Chetty from South Africa
- For Outreach – Vitaly Kveder from Russia (2nd term as VPL)

The NSC recommends as the VPs from Commission chairs

- Rahul Pandit (C3 – India)
- Rolf Haug (C8 – Germany)
- Laura Greene (C10 – USA)
- Claes Fahlander (C12 – Sweden)
- Roberto Nardi (C14 – Brazil)

The slate put up was approved, to be submitted to the GA.

Slate for Executive Council

President	Kennedy Reed	M	United States	Y
Past-President	Bruce H McKellar	M	Australia	Y
President Designate	Michel Spiro	M	France	Y
Secretary General	Kok Khoo Phua	M	Singapore	Y
Associate Secretary General	Rudzani Nemutudi	M	South Africa	Y
Vice-Presidents Elected at Large (Finance)	Enge Wang	M	China	Y
Vice-Presidents Elected at Large (Centenary)	Monica Pepe-Altarelli	F	Switzerland	Y
Vice-Presidents Elected at Large (Gender Champion)	Silvina Ponce Dawson	F	Argentina	Y
Vice-Presidents Elected at Large (New Members)	Nithaya Chetty	M	South Africa	Y
Vice-Presidents Elected at Large (Outreach)	Vitaly Kveder	M	Russian Federation	Y
Vice-Presidents Elected from the Commission Chairs	Rahul Pandit	M	India	Y
Vice-Presidents Elected from the Commission Chairs	Rolf Haug	M	Germany	Y
Vice-Presidents Elected from the Commission Chairs	Laura H. Greene	F	United States	Y
Vice-Presidents Elected from the Commission Chairs	Claes Fahlander	M	Sweden	Y
Vice-Presidents Elected from the Commission Chairs	Roberto Nardi	M	Brazil	Y

Bruce congratulated the commissions on obtaining more women members and urged them to produce women officers and women chairs in the future. He made the personal suggestion that one of the 3 officers of commissions should be woman, and there should be no longer than a two cycle gap between women commission chairs.

6. FINANCIAL MATTERS

6.1. Financial statements for 2015, 2016 & 2017

- Income for the three years 2015-2017 is now 1,460,666 EUR and is estimated to be at least 1,487,006 EUR, both are above the budgeted amount, 1,392,102 EUR due to the efficient work done by Maitri in collecting the dues
- Expenditure for 2015-2017, to 30 September is 1,112,895 EUR. Some major expenses, like the operation of the office at NTU and expenses for the GA have been incurred but not put in as yet, so the final expenditure is estimated for the triennium as 1,299,132 EUR
- Estimated reserves at end of 2015-2017 triennium is approximately 1.25M EUR, about 2.4 times the annual income. That will let us keep the reserves over twice the annual income and spend some reserves on the centenary.
- For the next triennium we have budgeted increased income, in line with this experience, and also increased expenditure

- Above figures omit the ICSU grant income and expenditure as they are received from ICSU and paid out in full and so have no impact on our accounts.
- The financial position is a consequence of prudent budgeting and financial controls which were recommended by the previous President, Cecilia. Credit is also due to Maitri for implementing these diligently. IUPAP owes big "thank you"s to Cecilia and Maitri for its present healthy financial position.

6.2. Report on financial position in 2017

- The financial transactions of IUPAP are done by the Singaporean Company IUPAP Singapore (IUPAP-SG)
- Its Company accounts are audited. Our Statutes require that we have our accounts audited. The audit of IUPAP-SG is the official audit of the IUPAP accounts.
- We are not incorporated as a charitable company as in the UK as Singapore law requires charitable companies to spend 80% of their income in Singapore where as IUPAP spends our income all over the world. The Singapore law also states that if all or 50% and more of the income comes from members then we are not required to pay any taxes.
- The audited accounts for 2016 contain a lot of standard auditor material which does not apply to our simple company. An important consideration is that we pay no tax.
- Because we work on a triennial basis, an important number is the bank balance at end 2014, which represents our reserves. As well as the 1,077,790 EUR in the bank at the end of 2014, in 2015 we received additional 2014 dues and paid additional 2014 bills. The result is that our reserves are slightly increased
- Reserve funds at 31.12.2014 = 1,083,485 EUR

6.3. Proposal to have 2 C&CC meetings in 2018

The proposal to have 2 C&CC meetings in 2018 was made to familiarize the new team with each other and the working of IUPAP. It was accepted and the council budgeted expenditure in 2018 accordingly.

6.4. Proposed budget for 2018 and forecast for next triennium 2018-2020

We have budgeted about 203,000 EUR in 2018-2020 more than budgeted for in 2015-2017. C1 proposes to use this increase in the following ways:

- Fulfil our promises toward the ICSU grants and SESAME -18,000 EUR
- Spend more on conferences (including ICWIP), developing country workshops - total of 55,500 EUR
- Spend more on GA 2020 – 10,000 EUR
- Proposal to have 2 C&CC meetings in 2018, and spend a little more on each - total extra 39,000 EUR – the proposal was unanimously accepted by the floor
- Increase president's allowance – 4,500 EUR
- New initiatives allowance of 27,000 EUR
- Centenary and IYBSD preparation 45,000 EUR
- Sundry other items off set by savings ~3,500 EUR
- 21,000 EUR is brought in from reserves because that sum (originally 25,000 USD), once donated by IBM to support young writers prizes in semiconductor physics through its income, has been released to be spent for that purpose. It will be spent on the recommendation of C8, and can be carried forward, even after 2020 until it is exhausted. They may be able to raise other income to keep the prizes going.

Note that the allowance for commissions was not increased, it remains at EUR 4,090 per term

The proposed budget was approved and accepted by the C&CC.

7. MEMBER MATTERS

7.1. New members

Possible membership of IUPAP has been discussed with seven countries in South Eastern Asia and Central Asia. None have yet joined

7.2. Assistance to members

Assistance currently offered:

- The 2014 dues were waived for two members
- A 50% discount is presently offered to one member, up to 2017

Assistance proposed for 2018 – 2020

- Four members with unpaid dues who have indicated that they cannot pay at the current level and have been offered a 50% discount on dues to 2020, in some cases including a waiver or a discount for unpaid dues
  - Cuba, has unpaid dues for 2014, 2015, 2016 & 2017 and has submitted resignation of membership – council has accepted the resignation effective from the end of 2020 when they are more than six year unpaid. They will not be sent bills in this period but will be invited to nominate for Commissions
- Four countries with more than 3 but less than 6 years unpaid dues will continue to receive invoices, with a note to say they do not have voting status until unpaid dues are reduced to 3 years or less.

7.3. Transfer to observer status

Countries with more than 6 years unpaid dues cease to be members, according to the statutes. They will to be recorded on the list of members as 'past members with observer status'. It was agreed that the office will write to advise them on this and to inform them that if they wish to reinstate their membership status they should make that request formally. Although the statures say that they should pay the past dues to be reinstated, however that may be negotiated.

The countries who cease to be members and become observers are Cameroon, Colombia, Egypt, Kenya and Mongolia.

A total amount of EUR 51,958 is to be written off. This sum has appeared as income in the accounts of the company IUPAP-SG, but does not appear as income in the summary budgets and actual income and expenditure presented to the C&CC.

Other sources of income were suggested to be considered, like undertaking fund raising events, or having a way of donating to IUPAP and maybe investing our reserves for good returns.

8. COMMISSION, WORKING GROUP & GENDER CHAMPION MATTERS

Reports of Commissions, Working Groups and Gender Champion reports were taken as read. The following were selected for discussion:

8.1. Overlapping interests in neutrino physics

C11, C4 and C12, as well as WG1, WG9, and WG10 are in discussion about the best way to accommodate their overlapping interests in neutrino physics, and will bring proposals to Council in due course.

- After discussions the C&CC requested the group to lay out the mandate, time lines and procedures for the proposed international cooperation and development.
- The proposal was requested to be drafted so that it could be put to the GA as a resolution

8.2. C17 Discussion

The Chair, Deb Kane, highlighted that

a. C17 will propose changes to the mandate to the GA
b. Code of conduct for conferences
   - IUPAP's code of conduct for conferences is not easily accessible and it was suggested that we put it in every approval letter to the organisers of conferences and also on the conference website
c. Number of years post PhD for IUPAP YSP eligibility
   - C17 proposed to reduce the post doctoral years from 8 to 6, so that the YSP prizes are indeed given to younger scientists or to those who are in their earlier stage of career. A pattern of about 50% of the YSP prizes going to scientists who are leading groups and appear as the last author on publications has emerged over recent times. The EPS specifies up to 6 years as a postdoctoral fellow for most of their ECR prizes.
   - This proposal was not accepted
d. Contents of IUPAP Newsletter
   - congratulations and thanks to K K Phua for initiating the newsletter and having it for the last 3 years.
   - The contents of the Newsletter and thus the contributions to it from Commissions needs to be discussed. One suggestion is to include pieces from national/regional physical societies to give more visibility to the organisations that underpin IUPAP. It is suggested that highlighting specific research papers is probably not something that should be in the Newsletter.
   - it is suggested that calendar be put in place for commissions to contribute toward the newsletter on a monthly basis
   - It was noted that one of the Vice-Presidents at Large will be given the responsibility of outreach which will also include overseeing the newsletter
e. Supporting early career scientists
   - It was found that may early career physicists feel they are being exploited and sometimes the work that they put in all their effort to do is credited to their seniors. The uncertain career paths for ECRs globally are well documented.
   - It was suggested that IUPAP take leadership in this in terms of adding to the IUPAP agenda a campaign to help and support people at this career stage.

8.3. WG5 Report

The Chair, Igle Gledhill, explained the main points of the report to the meeting, including

A brief introduction to the mandate of WG5 on surveying, analysing and reporting data on women participation and inclusion. She described the latest workings of the WG5 including the International Conference on Women in Physics which is conducted every 3 years:

8.3.1. A survey done by the group in 2011 of 14,934 men and women is always used as a reference point, however this has now been outdated. From this we learn that some of the problems which must be addressed are
   - The quality of relationships with doctoral advisors
   - Participation in conferences and research locally or overseas; on committees or as speakers

- Access to enough funding, office space, lab space, equipment, travel money, clerical support and employees or students to conduct or present research findings
- Comfort level to raise concerns with supervisors or management

8.3.2. Currently WG5 is managing the IUPAP participation in the ICSU grant supported project '***A global approach to the gender gap in Mathematical and Natural Sciences: How to measure it, How to reduce it?***' The tasks involved here are:

- Bibliometric survey of publication patterns with comprehensive web-based metadata analysis. This is a global survey (already started in 2017) of men and women targeted to 45,000 respondents in 8 languages
- Bibliometric survey of publication patterns with comprehensive web-based metadata analysis
- Construct a database of Good Practices
- Final written material to be provided for:
    - Girls and young women
    - Parents
    - Organisations

8.3.3. Other WG5 tasks include developing the Waterloo charter for women in physics, which is essentially a document that makes recommendations on what has been tried and tested from the levels of policy to individual change, and departmental environment, with community advise which will at the end, provide a good practise guide for organisations

The guiding principles include:

- Women and men are equally good in doing excellent science and deserve equal opportunity.
- Diversity contributes to excellence in science so that the full participation of women and men will maximize excellence in the field of physics.
- Current recruitment, training, evaluation and award systems often prevent the equal participation of women.
- Formal and informal mechanisms that are effectively discriminatory are unlikely to change without intervention. Both thought and action are necessary to ensure equal participation for all.
- The measure of equal opportunity is outcome, namely gender equity is attained when the percentage of women in the next level of advancement equals the percentage in the pool.
- Long-term change requires periodic evaluation of progress and consequent action to address areas where improvement is necessary.
- Physicists and IUPAP can create profound changes in physics

8.3.4. What is the remedy? Though IUPAP has limited resources it can effect great influence in the physics community. By making evidence-based choices we can create maximum impact

8.3.5. A whole landscape of interventions are possible from Girls physics and astronomy camps to role models and charters to policies

8.3.6. All can be successful in different ways since all have the possibility of changing a life decision, in different environments, even though the impact is difficult to define and evaluate, since quantification of impact can be misleading.

8.3.7. We can help elevate this by:

- Creating a safe environment in which to raise concerns and address them
- Support needed in working life in terms of personal safety and fairness
- Access to research and study funding
- A cordial relationship with colleagues

- Recognition of achievements
- Provide flexible hours
- Empathetic superiors
    - Affirmative actions, which involves the establishment of serious goals, not rigid quotas, for achieving diversity in all aspects of the profession, including hiring, invited talks, committees, and awards.
    - Hiring, Career Advancement and Recognition
    - The criteria used in hiring, assignment, promotion and awards should be broadened to include different pacing of careers, care of older and younger family members, career breaks, and demands of dual-career households.
    - Provision for day care facilities, family leave, time off and re-entry will instantly improve women's access to a career in physics and is of equal benefit to men.
    - Institutional policies, and cultural issues are among the strongest reasons that individuals from underrepresented groups can feel disadvantaged, particularly when there is a mismatch with the implicit norms and expectations of behaviour of the majority
    - "Women and minorities should not do all the adapting. It is time for society to move toward women, not women toward society".

Finally all of the above can be summed up to:

Create an environment in which women thrive and men thrive with shared interests and success and codes of Practice, an environment that is excellent, stimulating and fun to work in, where one can "Keep an open mind, but don't let your brains fall out"

8.4. WG13 Report

The Chair, Stephan Schlamminger, provided a written report, but was not able to attend the meeting.. He recommended the continuation of the working group which was accepted by the C&CC. On his recommendation, a brief summary on what the WG has been doing was given by Bill Phillips.

WG13 was formed at the last GA, to help us with the scandalous situation with the Newtonian constant of gravitation (big G) constants. It is the worst known of all the fundamental constants, and various measurements of it often disagree by many times their combined state standard deviations. The best measurements claimed to do about 2 parts in 10 to the 5th, but they often disagree by 10 or 20 times that or actually 10 or 20 times larger uncertainties, and so the question is why, and we do not know, and WG13 was formed to try to answer the question why? and try to figure out how to do it better.

This is important, as if we do not understand how to measure small forces there are all kinds of things that could have implications about that, so we better make sure that we understand what is going on in this kind of gravitational measurement. In the last 3 years an apparatus that had been used to measure big G, at the BIPM, was shipped and a whole new team was formed to put it back together again. This team has been using it to measure big G, and are on the verge of producing a number for that, they have been doing everything blind, they have no idea what they are measuring at the moment, though unblind the data, perhaps in a few weeks, and let us know how that measurement compare to the previous measurement done with the exactly the same apparatus, along these same lines, they have gotten an apparatus from, although it was used in a different way to measure big G. They are going to put that back together and use it to measure big G, so the idea is what happens when a whole different team uses the same apparatus to measure big G, and we will find out soon.

The recommendations are essentially to study everything, so certainly part of it is new ideas, and that has gone to the point that the national science foundation held a workshop to try illicit some new ideas, and that is one of the things that has been encouraged by WG13's existence. There are other thing to find out with the present methods, why are they discrepant, i.e, there is only a few different ways, it is not a whole lot different from what Cavendish did, so that is part of the thing that is so frustrating is that we are still measuring big G the way Cavendish did, and different people measuring using effectively Cavendish's technique are getting different answers, why? that is an intolerable situation in the measurement business, and we are going to get to the bottom of it.

8.5. WG14 Report

Lia Merminga began with a brief introduction on the mandate, mission and membership of the WG. She also highlighted that there was contemplation whether this should be a WG or a full commission. The consensus is to continue as a Working Group, and later evaluate becoming a Commission. The flexibility of having more than one member from any IUPAP member serves the mission well at this early stage of the group. They decided not to submit a resolution to become a Commission to the 2017 GA and may revisit the subject at the 2019 timeframe, and at that time decide if they want to propose a resolution for consideration at the GA in 2020.

She detailed the connections of WG14 with ICFA, ICUIL, C12 AND C16. They also work closely with IPAC and have now concluded that it should be an IUPAP-sponsored conference. A sub-committee of WG14 has been tasked with leading the implementation of the connection between IPACs and WG14. The subcommittee comprises Gianluigi Arduini, Caterina Biscari, Lenny Rivkin, Lia Merminga, Bob Bingham and Qing Qin. A prerequisite is that IPAC conferences are organized consistently in the three regions (Americas; Europe & Africa; Asia & Australia). However, the existing MOU for the coordination of IPACs held in Asia, Europe and the Americas contains discrepancies in the way IPAC conferences are organized in the 3 regions, which need to be resolved. Some of the discrepancies are related to membership of organizing committees; the fact that American IPACs are IEEE conferences; asymmetry in the number of student grants; and profit/loss being handled differently. Moreover, in the case of the Americas, there is a PAC-OC committee which is responsible for both IPAC and NA-PAC, and as a result financials, venues and other aspects of the conference organization are entangled. We believe these need to be separated.

In addition to the IPAC conferences in connection to WG14, and following up on Chris Barty's ideas, the following topics will be covered:

- strengthening visibility of accelerator research through revision of publication policies & habits, and hear a report of discussions by EPS-AG and IPAC Coordination Committee
- Education and training as one of the primary initiatives of WG14, and how to engage representatives of the main international accelerator schools: CAS, USPAS, JUAS.

8.6. WG 15 Report – Working Group on Soft Matter Physics

Michael Rubinstein presented, the proposed membership of WG15:

a. Seth Fraden (Physics, Bradeis)
b. Andrea Liu (Physics University of Pennsylvania)
c. Michael Rubinstein (Chair) (Chemistry, North Carolina at Chapel Hill)
d. David Weitz Mallinckrodt (Physics and Applied Physics, Harvard)
e. Eugenia Kumacheva (Chemistry,Toronto)
f. Peter Harrowell (Theoretical Chemistry, Sydney)
g. Ouyang Zhongcan (Theoretical Physics Chinese Academy of Sciences)
h. Guruswamy Kumaraswamy (National Chemical Laboratory, Pune)
i. Hajime Tanaka (Institute of Industrial Science University of Tokyo)
j. Wonho Jhe (Physics, Seoul National University)

k. Jean Francois Joanny (École Supérieure De Physique Et De Chimie Industrielles, Paris)
l. Gerhard Gompper (Theroretical Soft Matter and Biophysics Forschungszentrum Jülich)
m. Emanuela Zaccarelli (Institute of Complex Systems, Physics, Universita di Roma La Sapienza)
n. Daan Frenkel (Chemistry, University of Cambridge)

8.7. New Working Group on Industrial Physics

A new resolution was put forth since it is believed that it is important the IUPAP connect with physicists working in industry, much better than it has in the past. A look into the history of IUPAP, you will see that every so often a president decides that it would be a good idea to have more applied physics or pay more attention to the "applied" in their name. It would be a good idea to have connections with industry, and they think of something that might do that, we just went through the process of determining slates for commissions, and there is a bylaw that says every commission should have somebody working in applied physics on it. However, it is not sure how many commissions have such a person, and in fact it was not even looked at by the nomination subcommittee whether it was upheld. So there were a number of things to do that could be done, and what we have done is to suggest that there should be a new working group on industrial physics to connect with physicists working in industry.

This will be discussed more in detail when the resolutions are discussed.

8.8. Other matters regarding Commissions and Working Groups

At the last C&CC meeting in October 2016 it was thought to be a good idea to set up a working group on the Centenary of IUPAP. A resolution on the same will be drawn up to add to the discussion under resolutions. In this regard, one interesting question is to be considered, ie., the question as to which centenary is to be celebrated? IUPAP was actually created in 1922, but the first general assembly of IUPAP was in 1923. Although we could celebrate 2 centenaries. In fact 2023 on our normal cycle will have a general assembly whereas in 2022 there is no general assembly. So if we have a celebratory meeting of some type it has to be a special meeting.

9. CONFERENCE MATTERS

9.1. Conferences Proposed for Sponsorship, Reports submitted and Approvals – Rudzani Nemutudi

Rudzani highlighted that the historic mission of the IUPAP has always been to enhance physics through organization and sponsorship of most appropriate conferences, and ensuring that all physicists have free access to these meetings. He restated the rules and policies of IUPAP in supporting conferences financially and endorsing them. He also reminded all of the 2 deadlines - one for the submission of conference applications is the 1st of June of the previous year, and the other – 31st August when he sends emails to commission chairs to assist in prioritising conferences for their commissions.

There are four categories of Conferences:

- Type A: Biggest conferences, that normally are attended by any number between 750 - 1500 people; and basically provide a broader view of the entire field of the commission

- Type B: Specific category conferences, that draw anything between 300 and 600 attendees, and they usually concentrate on a broad subfield of physics.

- Type C: Small conferences with 50 and 200 attendees, and they concentrate on specialized topics

- Type D: This was introduced specifically to meet the needs of developing regions, facilitated by C13. Any member wanting to submit type D conferences, will need to be referred to C13.

The applications received were classified as follows:

Conference Type	Conference Applications Received
Type A	12
Type B	22
Type C	13
Type D	4
TOTAL SUBMITTED	**51**

It was agreed that all conferences of each type will receive the same level of support, adjusted to fit within the 2018 budget.

It was noted that an expected application for the International Conference on Magnetism, the flagship conference for C9, had not been received. Bruce remarked that he had received correspondence from the organisers and was surprised that the application had not been received. It was agreed to investigate this application overnight and return to the approval of conferences the following day.

9.2. Report from Gender Champion and Gender representation in conferences, including Minimum level of Women members of Conference Committees

The Gender Champion presented her report on the distribution of women invited speakers at conferences and found that there was a strong correlation with the number of women in the organising committee of the conference. She therefore recommended that

- There should be ideally be at least 20% women on each of the three major committees, International Advisory Committee, Program Committee and Local Organising Committee.
- IUPAP should not support Conferences with less than 10% women on these committees.
- These provisions should be added to the Conference Policies on the website, and they will apply to applications received for support of so it is in the call for 2019 Conferences and apply from then

IUPAP encourages conference organisers to ensure that conference committees of these kinds: International Advisory Committees, Program Advisory Committees, and Local Organising Committees include more than the target percentage of women. The target percentage for conferences in 2019 to 2021 is 20%.

Commission Chairs are expected to negotiate with the applicants for IUPAP support of conferences which do not have at least 10% women on these committees, to raise the fraction of women members of the committees.

10. JOINT WORKING PARTY (JWP) ON NEW ELEMENTS WITH IUPAC

The President reviewed the history of the evaluation of the claims for 113, 115, 117 and 118. There has been as much conflict as cooperation. Cecilia experienced great difficulty in putting the JWP together. This has come out in her recent publication, and public presentation, in which she said the IUPAC should have nothing to do with new elements. IUPAP had no records of all agreements she had made with the IUPAC about publication and announcements, but there was an agreement that there would be a joint announcement when the JWP report was published on 20 Jan 2016. Nevertheless, the JWP results were unilaterally announced by IUPAC on New Year's Eve 2015, breaking that agreement. Although there was a one month period for comment on the report, no challenges were received until the Nobel Symposium on Superheavy elements, June 2016. There was a call by Cecilia at that Symposium that there should be a new JWP to re-do the evaluation. After much homework done by Bruce, he was able to advise IUPAC that the report was flawed, but that a re-evaluation would lead to the same

conclusion, so the report should stand. An announcement of the new names was made by simultaneous announcements by both Unions. The only press reports we are aware of which mention the IUPAP announcement were in Singapore and in São Paulo. The names are 113 Nihonium, 115 Moscovium, 117 Tennessine and 118 Oganesson. The most frequest complaint received during the five month comment period about the names centred on *"Why do none of these names celebrate Chemists?"*

Immediately on the announcement, IUPAC and IUPAP presidents began work setting out an agreed procedure for assessing future claims, publishing and announcing those claims and the subsequent naming of the elements. During these negotiations the Unions proposed the setting up of a joint working group to review the criteria used to determine if a new element has been found, and this was approved by the IUPAP C&CC. A group comprising of 3 members appointed by IUPAP (including 1 Chemist), 3 members appointed by IUPAC (including 2 physicists), was formed. The group had its first meeting in May, and it was asked to provide its report within 12 months.

C12, the Commission on Nuclear Physics was consulted in the construction of the agreed procedures recorded in the document *IUPAC and IUPAP procedures for validating claims for the discovery of new elements and naming of those elements.* Cecilia's position was drawn to the attention of C12, and the Commission agreed to recommend the new procedures to the Council.

Features of the new agreement are:

- The new JWP to have three appointed by IUPAP and three by IUPAC. IUPAP President to consult C12, IUPAC President to consult Inorganic Chemistry Division
- Emphasise need that the members have appropriate experience and are independent from claimants
- Reporting is to to be to both Unions, including above consultants
- Publication of detailed report in Pure and Applied Chemistry, simultaneous publication of short report in journal like Science or Nature (To be provisional)
- Joint announcement of provisional results by both Unions. The announcement shall clearly state that the determination of claims for new elements is the work of a joint working party of both Unions.
- Work on naming to then be done by IUPAC, they invite discoverers to propose the names and negotiate to get the names to conform with standard chemical practice
- Joint announcement of the names by both Unions. The announcement will clearly state that the provisional names and symbols have been approved by IUPAC, following the determination of claims for the discovery by a joint working party of both Unions.

History is repeating itself. In 1996 the retiring IUPAP President, Yushio Yamaguchi, stated that IUPAP should take over the verification and naming process, and the new President, Jan Nilsson, published a paper informing physicists about IUPAP and praising the continuing cooperation with IUPAC in the process. Bruce expressed gratitude to the IUPAC President, Natalia Tarasova, for her cooperation in this construction of the agreement. Cooperation between the Unions on this has formed the basis for other areas of cooperation between the Unions, including the ICSU supposed project on Gender Balance, and the IYBSD proposal.

The motion that the meeting **adopts the agreement with the IUPAC set out in the document 'IUPAC and IUPAP procedures for validating claims for the discovery of new elements and naming of those elements' was carried without dissent.** There were 12 in favour and 3 abstaining and no against.

The agreement is provided in appendix I of these minutes

Minutes of the C&CC Meeting

Day 2 — 10th October 2017

University Rector Building- Superior Council Room

R. da Reitoria, 374, Cidade Universtária, São Paulo – SP,

CEP: 05508-220 Tel: +55 11 3091-3500

09:00 – 16:00

11. REVIEW OF DAY 1 BUSINESS, INCLUDING REVIEW OF CONFERENCE DECISIONS

11.1. The President reminded the meeting that they had agreed that

- The only slate to change from those presented by the NSC is that for C5: The Commission on Low Temperature Physics , noting that the slates shown at the GA list only those 14 members proposed for election and not of those who are not proposed. On day 2, the liaisons can re-nominate their members who didn't make it to the list but these re-nominations need to be supported by another country. On day 3 election of the 14 members of each Commission will be done either by individual ballots on those slates changed on day 2, and by a block vote on the unchanged slates
- The new budget was adopted for 2018
- The IUPAC and IUPAP Procedures for Validating Claims for the Discovery of New Elements and Naming those Elements were **approved**

There had been developments on two of the matters discussed on the previous day

11.2. The Neutrino Physics Panel:

The Chairs of C4, C11, C12, WG1 and WG10 met and reported that

- The initiative to create an inter-commission Neutrino Panel is seen very positively because neutrino physics involves broader experimental and theoretical techniques than those being performed at accelerator-based experiments. The Neutrino Physics Panel should be combined effort under the supervision of the C4, C11 and C12 Commissions together with the WG1 and WG10 Working Groups, and possibly also the WG9, who are to be consulted when a representative is available. C11 will take the role as the coordinating Commission of the panel.
- The mission of the Neutrino Panel, as provisionally defined, is *to promote international cooperation in the development of an experimental program to study the properties of neutrinos and to promote international collaboration in the development of future neutrino experiments to establish the properties of neutrinos.* The provisional definition may be modified by subsequent discussions.
- Initially the Panel will have about 15 members. Nominations will be made by the involved Commissions and Working Groups considering usual IUPAP prescriptions covering expertise, regional balance and gender.
- The mandate will extend for 3 years when the panel should deliver its final report – it will be reviewed by the council annually.
- Presentations and status of the ongoing work will be presented at least every year during the annual meetings of the Commissions and Working Groups.
- A Memorandum of Understanding will be produced and signed by the Commissions and Working Groups recognizing the Neutrino Panel activity. It should include the agreed actions and structure.

- A resolution should be put to the GA, drafted on the lines of 'this panel is being constructed with a aim to a mission to promote international cooperation etc. and the precise mandate for the panel besides the mission of the panel if you prefer, and the composition will be determined by the relevant commissions and working groups, and approved by the council'.

11.3. Conferences to be supported

The application for the International Conference on Magnetism (C9) was received overnight with the claim that it was submitted previously. Although there was no record of an earlier submission, **Council agreed to accept this late application**. The conference was in the end added to the list of Type A conferences after the chair of C9 pleaded that technical difficulties on the part of organizers led to the late submission of the ICM 2018 conference application, which is the premier conference of C9.

With ICM 2018 was then added to the list of recommended A type conferences, and it was agreed that funding for A type conference be reduced to 9,500 EUR and funding for B type conferences be retained at 5000 EUR.. With these changes the allocation for conference is:

- 10 Type A with 9,500 EUR each = 95,000 EUR (5,000 EUR conference grant; 4,500 EUR travel grant)
- 20 Type B with 5,000 EUR each = 100,000 EUR
- Total expenditure 195,000 EUR in agreement with the budget for conferences and
- 4 Type D with 7,000 EUR each = 28,000 EUR
- Total allocation is 223,000 EUR, equal to the provision in the 2018 budget.

The list of conferences approved by the C&CC is provided in appendix II.

11.4. Limits on Conference fees charged by supported conferences

- IUPAP sets an upper limit to the fee that can be charged by IUPAP supported conferences to ensure that the conference expense does not deter physicists from attending the conference. For 2018 the maximum conference fee was set at EUR 680. It is proposed to increase the fee by the same inflation rate as proposed for the dues– 3.1% per year rounded to the nearest $10. The maximum fee should not depend on the length of the conference, although the maximum fee limit does not apply to cost recovery of refreshments and. This maximum fee are set out to 2021 since the C&CC/GA meeting in 2020 will need receive the applications for conferences in 2021.

- **The agreed limits to the conference fees are**

IUPAP Conference Fee Limits							
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Registration Fee limits apply regardless of size or length of conference	€ 550	€ 600	€ 640	€ 680	€ 700	€ 720	€ 740
				3.1% adjustment rounded to the nearest €10. Meals and refreshments are not considered in setting the fee limits			

- **Conferences endorsed for 2018**

Rudzani reported it had been agreed by the usual out of meeting procedure that the following conferences be endorsed for 2018 and later:

C4	**A**	**COSPAR Scientific Assembly**	**COSPAR 42**
C8	**A**	**35th International Conference on the Physics of Semiconductors**	**ICPS 2020**
C9	**B**	**European School on Magnetism**	**ESM 2018**
C12	**A**	**Quark Matter**	**Quark Matter**
C13	**D**	**XIV Hadron Physics**	**XIV Hadron Phys**
C17	**C**	**International Quantum Cascade Lasers School and Workshop**	**IQCLSW 2018**

12. THE ICSU-ISSC MERGER

On 26 October 2017, ICSU and ISSC members will be asked to vote in favour or against a merger of the two Councils. Should the vote be in favour of a merger, ISSC and ICSU members will be asked at the joint meeting to take 4 further decisions on the proposed merger. These are:

- Members will be asked to mandate the ICSU and ISSC Presidents to finalise a formal Merger Treaty and initiate the legal process of implementing the agreed merger via a merger-absorption mechanism.
- Members will be asked to agree on the date on which the merger should take effect (to be included in the Merger Treaty).
- Following consideration of proposals (document JM12), members will be asked to vote on the date and place of the founding General Assembly to be held in 2018.
- Members will be asked to agree that the process of electing the new Council's Governing Board during its founding General Assembly in 2018 should be conducted in accordance with the new Statutes and Rules of Procedure that will be discussed and agreed during the October 2017 Joint Meeting.

It should be understood that the union members of ICSU bring the science and the national members the money. The union votes are weighted so that the total number of votes cast by Unions equal the total number of votes cast by national members. A main concern for this merger is whether the financial resources available are sufficient to accomplish the aims of the merged organisation. An additional concern is whether the enlarged organisation can be efficiently run. These concerns were expressed at the joint General Assembly of ICSU and ISSC in Oslo in October 2016 by our Past President, Cecilia Jarlskog. The ICSU Treasurer, Barbara Erazmus, who is also a physicist, is attending our C&CC and General Assembly meetings and will present to reasons why the ICSU Board is supporting the merger and the decisions made by various joint ICSU-ISSC committees which have been set up to guide the merger.

Barbara started with a brief on the organisation and membership of ICSU, and the history of the move towards the merger. The was an external review of ICSU in 2014, chaired by Peter Knight, which recommended that ICSU cooperate more closely with many related organisations, including the ISSC. A joint working group was setup in 2015 to access the future of the relationship between the International Social Sciences Council (ISSC) and ICSU. The co-chairs for the Working Group were Khotso Mokhele (previous ICSU vice president, who is familiar with ICSU and members of ISSC committee) and Pierre Ritchie (previous secretary general of International Union of Psychological Science and member of ICSU Committee for Scientific Planning and Review). ISSC Members were, Alberto Martinelli (President), Saths Cooper (Vice-President) and Renee van Kessel (Executive member). The ICSU Members were Gordon McBean (President), Jinghai Li (Vice-President) and David Black (Secretary General). Mathieu Denis (Executive Director- ISSC) and Heide Hackmann (Executive Director-ICSU) provided administrative support.

This recommended that the organisation considered a merger, and in April 2016 the two organisations agreed to pursue this option and in October 2016 the joint GA in Oslo voted in principle to merge.

In December 2016, a Transition Task Force and Strategy Working Group were appointed to develop more particulars, new statutes, policy and a project for the strategy of the merged organization which will be presented to a joint General Assembly in October 2017. There a vote will be taken on the merger, by both ISSC and ICSU members separately. The strategy working group was co-chaired by ICSU and ISSC Vice-Presidents (Jinghai Li and Saths Cooper) and included 9 representatives of ICSU and ISSC Members. The Transition Task Force (TTF) was co-chaired ICSU and ISSC Presidents (Gordon McBean and Alberto Martinelli), facilitated by Khotso Mokhele, and included 9 representatives of ISSC and ICSU members.

Most of the present projects of ICSU concern climate change, urban health, natural and man-made disasters, and sustainable development goals. Progress in these requires input from the physical sciences, but it also requires changes in society, which is one of the reasons supporting the merger with the International Social Science Council. It is possible that future projects will require more input from physics itself.

As an example, ICSU is considering a project to discuss nuclear clean up. Though it is a project related to nuclear physics, but encompasses almost everything, from geography, biology to chemistry, physics and migration.

New statutes for the merged organisation have been drafted by the transition task force, together with the proposed legal structure and the proposed organisational structure.

The suggested mission is **Advancing science as a global public good.** The new body will be a global voice of science that speaks for and stands for the value and authority of science, and its continued advancement, throughout the world and for the benefit of all. The main goals will be:

- To champion scientific research as the most effective means of acquiring robust and reliable knowledge;
- To promote the need for evidence-informed understanding and decision-making and support international scientific research and scholarship that is relevant to major issues of global concern;
- To support the continued and equal development of scientific creativity and relevance in all parts of the world;
- To safeguard the freedom of scientific enquiry, movement, association

The time line for the next steps is:

23 - 26 October 2017	Joint General Assembly in Taipei – separate vote of the two Councils on a decision to merge, and if that is approved, a joint vote to approve strategy and transition plans
First half of 2018	Members asked to endorse the Merger Treaty by electronic vote (TBC)
Before October 2018	Founding General Assembly of the new organisation (TBC)

If the merger is agreed, the founding general assembly will take place no later than in October 2018, and we have 2 candidates, one is Paris, and the other is Japan.

The upcoming Taipei General Assembly of ICSU will make the important decisions about the merger

The current ICSU office building in Paris and is available rent free until 2024, and it can house the present ISSC staff. This represents an in-kind contribution from the French Government of 260,000 Euros. However, the previous grant from the French government of 500,000 Euros was reduced to 100,000 Euros by the previous government. Negotiations with the new ministry are still underway .

Income sources for the new council are:
The new Council's income will initially come primarily from two sources:

a) membership fees, and
b) earmarked funds from external sources.

At present the total annual income of the two Councils is 7.1 million EUR. About 42% comes from member fees, 1.5% from the French contribution, and 56.5% from grants and external funding. Some of this needs to be renegotiated for 2018 and beyond. The future of the merged body will depend heavily on its ability to source new funds, and it will need to work hard on this. It is proposed to establish a Forum of Patrons as an important part of its fund raising.

It is agreed that ***The IUPAP Executive Council recommends to the General Assembly of IUPAP that IUPAP cast its vote at the ICSU General Assembly in favour of the proposal to merge ICSU and ISSC.***

13. PROPOSED RESOLUTIONS

The following draft resolutions have been proposed, and the Council is asked to approve that they be placed before the General Assembly

13.1. Ratification of the Decisions of Council regarding Members

13.1.1. Increase in the Shares of Members

Council accepted two requests from members to increase their shares:

19 February 2017 - India to increase shares

Council approves the request from India to increase its shares from 8 to 15, subject to ratification by the 29th General Assembly. This increase takes effect in 2017. On ratification, it gives India 5 votes at the General Assembly.

17 March 2017 - Singapore to increase shares

The request from Singapore to increase its shares from 1 to 2, received on 23 July 2015 was inadvertently not referred to the October 2015 C&CC meeting. It has now been approved by Council effective from 1/1/2016, subject to ratification by the 29th General Assembly. The number of votes for Singapore will increase from 1 to 2.

The 29th General Assembly RESOLVES to ratify these decisions of Council with immediate effect, so that these members may exercise the votes appropriate for their increased shares at the reminder of this General Assembly

13.1.2. Readmission of Pakistan as a member

Council received a request from the Pakistan National Centre for Physics for Pakistan to be readmitted as a member with reduced fees in an initial period. Pakistan was a member of IUPAP from 1951 to 1955 and it would be very helpful for IUPAP for them to again be a member.

The 29th General Assembly RESOLVES that Pakistan be admitted as a member of IUPAP, with the Pakistan National Centre for Physics as the adhering body, and that Pakistan be grated all the rights and responsibilities of membership and that its membership dues for the period 2018-2020 be set at 50% of one share.

The Pakistan National Centre for Physics is requested to establish a Liaison Committee to maintain relations between its physics community and the Union.

13.2 Ratification of Decisions made by Council

The 29th General Assembly notes the decisions made by Council, as set out in the minutes of Council available on the IUPAP website, and ***RESOLVES to ratify the decision of 31 March 2017***.

Ruling on retiring commission members

Council approves the ruling that, when a member retires from a Commission during a term and is replaced, if the replacement member serves more than half of the term, they are counted as a member for that term in determining terms of service. If the replacement member serves less than half of the normal term, that service shall be disregarded in determining terms of service.

13.3 Resolution regarding the IUPAP Dues for 2018 to 2020

As advised to members in a memo distributed on 13 March 2017, on the recommendation of Commission C1: Commission on Finance, and in agreement with the Resolutions of the 27th General Assembly of IUPAP.

The 29th General Assembly of IUPAP RESOLVES that dues for 2018 to 2020 be based on the World Bank annual inflation rate for 2016 of 3.1%, and will be

- ***for 2018: 2276 EUR***
- ***for 2019: 2347 EUR***
- ***for 2020: 2420 EUR***

13.4 Special Resolution regarding the Chair of C2: SUNAMCO.

For a number of reasons the usual succession arrangements for Commissions did not work to ensure that existing members of C2 have built up the experience necessary to be effective Chairs of the Commission for 2018-2010. It is desirable to appoint a previous Chair of the Commission as the Chair of C2 in this period to bridge this experience problem.

By-Law II.2.2 states that:
"Chairs may not be re-elected to any position on the Commission beyond their term as Chair, and Vice-Chairs and Secretaries may not be re-elected to the same positions nor be re-elected as an ordinary member – except in extraordinary circumstances, and, in such circumstances, special approval by the General Assembly is required."

Council therefore requests that the 29th General Assembly RESOLVES that special approval is given to appoint Peter Mohr, who was Chair of C2 from 2009-2011, as the Chair of C2 from 2018-2022

13.5 Resolution for Continuation of Working Groups

After consideration of the reports of the Working Groups the 29th General Assembly RESOLVES that all working groups except WG5 and Interim WG15 be continued until the 30th General Assembly in 2020, and DELEGATES to the Executive Council the Authority to approve those changes to the membership of Working Groups which it sees as appropriate.

***13.6* Working Group matters**

13.6.1 Continuation of Working Group 5

Noting that:

- The problem which this Working Group addresses is unlikely to be solved within 3 years. An element of continuity would be very helpful in sustaining and growing the influence that the WG is exerting.
- The difficulty that the Working Group faces is in managing the next ICWP conference when it will happen outside its agreed term of existence
- In addition, the ICSU Collaborative Gender Gap project runs 2016-2019. It is likely that the WG will wish to undertake implementation of the findings. The IUPAP Working Group in fact wrote the first draft of this project, and 4 WG members are on the project executive. Guaranteeing its existence to 2023 will give the working group the confidence to plan that implementation.

The 29th General Assembly RESOLVES that WG5 be continued for 6 years until the 31st General Assembly of 2023

13.6.2 Charge WG5 to organise the 7th ICWIP

The Conference every 3 years has become an implement of change and of inspiration. Countries were expressing interest in bidding for the 7th WCIP well before the 6th ICWIP.

The 29th General Assembly RESOLVES to charge the working group to organise the 7th ICWIP

13.6.3 Diversity and inclusion in physics

It has been demonstrated that discussions on gender issues can be one of the most important actions in bringing about positive change in a community. IUPAP supported conferences are an important venue to facilitate these discussions among physicists, not just women physicists.

The 29th General Assembly RESOLVES to encourage IUPAP-sponsored conferences to have a session for all participants on diversity and inclusion in physics, together with IUPAP values.

13.6.4 Female plenary speakers

The reports of the IUPAP Gender Champion refer specifically to low numbers of women as invited or plenary speakers. This provides a negative impact in terms of career role models, professional development of leading women, and leadership in physics.

The 29th General Assembly RESOLVES to encourage IUPAP-sponsored conferences to include more female plenary speakers, and asks that the number of male and female plenary and invited speakers at the conference be reported in the conference report to IUPAP

13.7 Neutrino Physics Panel

Council was pleased to endorse the initiative to create a Neutrino Panel as a combined effort under the supervision of the C4, C11 and C12 Commissions together with the WG1, WG9 and WG10 Working Groups. The C11 Commission will take the role as the coordinating Commission of the action. The suggested mission of the Neutrino Panel is to promote international cooperation in the development of an experimental program to study the properties of neutrinos and to promote international collaboration in the development of future neutrino experiments to establish the properties of neutrinos.

The 29th General Assembly RESOLVES to establish the Neutrino Panel, composed of nominees of C4, C11, C12, WG1, WG9 and WG10, under the supervision of those Commissions and Working Groups and coordinated by C11

The 29th General Assembly DELEGATES to the Executive Council the authority to approve the mission of the Neutrino Panel and the membership of the Panel

13.8 Resolution regarding WG15

Having received the report of the Interim Working Group on Soft Matter Physics (Interim WG15) ***the 29th General Assembly RESOLVES to establish the Working Group on Soft Matter Physics, WG15***, with the mandate:

1. To organize or assist in the organization of an International Conference “Soft Matter Around the World” which rotates every 3 years to each geographic region (Europe- Africa, the Americas, and Asia-Pacific).
2. To coordinate soft-matter-related regional, national & local conferences, meetings & workshops
3. To coordinate soft matter education, such as summer and winter schools and short courses and help organize them if a need appears
4. To promote soft matter research through information exchange, publicity, prizes, publications, etc.
5. To strengthen the connections between academic and industrial soft matter research and development through outreach events, short courses, etc.
6. To advise the 30th General Assembly in 2022 on the best way to ensure that IUPAP continues to nurture soft matter physics.

The 29th General Assembly delegates to the Executive Council the authority to approve the membership of the Working Group on Soft Matter Physics.
The term of the Working group in the first instance shall be until the 30th General Assembly

13.9 Resolution regarding terms of New Commissions

Statute IV. C states that:
'C. The term of office of Councillors normally begins and ends at the end of each General Assembly. In exceptional circumstances the General Assembly may extend the term of office.'
However, nothing in the statures or By-Laws states the starting and ending dates for members of Commissions. Looking at the recorded dates for previous commission demonstrates a confusion on this. By-Law II. 2 now states:

Terms of Office

1. All elections are for a term of three years.
2. Chairs may not be re-elected to any position on the Commission beyond their term as Chair, and Vice-Chairs and Secretaries may not be re-elected to the same positions nor be re-elected as an ordinary member – except in extraordinary circumstances, and, in such circumstances, special approval by the General Assembly is required. Ordinary members may be elected twice.
3. Normally the Secretary, Vice-Chair and Chair are to be chosen from among those who have served at least one term on the Commission.
4. Service in all capacities shall not exceed three terms.

The 29th General Assembly RESOLVES that By-Law II.2 be amended:

1. **by the insertion of a new clause 2 that states**
   The term of office of members of Commissions normally begins 1 January of the year after each General Assembly, and ends on 31 December of the year of the next General Assembly. In exceptional circumstances, the General Assembly may extend the term of office.
2. **by the appropriate renumbering of the following clauses**

13.10 Resolution to confirm new mandate for C17

C17 has indicated that they wish to propose a revised mandate.

The 29th General Assembly DELEGATES to the Executive Council the authority to receive a proposed new mandate from C17 and to approve it if it sees fit to do so.

13.11 Resolution regarding the International Year of Basic Science for Development

Having received the document 16.2 IYBSD describing the proposed International Year of Basic Science for Development

The 29th General Assembly RESOLVES to pursue and strongly support the plan to establish 2022 as the International Year of Basic Sciences for Development, along the guidelines outlined in the document 16.2 IYBSD

13.12 Resolution regarding the ICSU-NSSC merger

The 29th General Assembly of IUPAP RESOLVES that IUPAP casts its vote at the ICSU General Assembly in favour of the proposal to merge ICSU and ISSC.

13.13 Resolution to establish a Working Group on Physics and Industry

The 29th General Assembly RESOLVES

1. ***To establish a Working Group on Physics in Industry to serve until the close of the 30th General Assembly***
2. ***To charge the Working Group on Physics in Industry to report to the 30th General Assembly with recommendations on how IUPAP can strengthen its connections with physicists working in industry, and with industries which make strong use of physics to develop and deliver their products.***
3. ***To delegate to the Executive Council the responsibility of appointing the Chair and the members of the Working Group on Physics in Industry.***

13.14 Resolution to establish a Working Group on the Centenary of IUPAP

The 29th General Assembly RESOLVES

1. ***To establish a Working Group on the Centenary of IUPAP to serve until the close of the 31st General Assembly***
2. ***To charge the Working Group on the Centenary of IUPAP to advise Council and the 30th General Assembly on how to commemorate and celebrate the centenary of the creation of IUPAP in 2022 and the centenary of the fist General Assembly in 2023***
3. ***To delegate to the Executive Council the responsibility of appointing the Chair and the members of the Working***

Group on the Centenary of IUPAP.

13.15 Resolution regarding SESAME

The 29th General Assembly congratulates the Council, Director and management on the successful opening of SESAME, RESOLVES that IUPAP will continue its support of the SESAME travel program at the existing level until the 30th General Assembly, and DELEGATES to the Executive Council the Authority to conclude any agreement necessary to formalise this resolution

13.16 Resolution regarding redefinition of SI

The SI came into being in 1960 with IUPAP providing important impetus for that international adoption of a complete and coherent system of units. It is fitting that IUPAP continue its role in support of internationally agreed-upon units by supporting the current plans for redefinition.

The most immediate need for redefinition arises from the problem of the kilogram. Today, the kilogram is defined as the mass of the International Prototype Kilogram (IPK), a platinum- iridium cylinder kept in a vault at the International Bureau of Weights and Measures (the BIPM). For some time, and most especially in recent years, it has become clear that the mass of IPK has been drifting and changing with respect to other mass standards manufactured at the same time as IPK, and subsequent to that time. The circumstance of having the standard of mass itself subject to changes in, for example, the surface contamination of an artifact, is unacceptable in the modern era. It is akin to the situation when the unit of time, the second, was defined as a fraction of the mean solar day, a time interval known to be changing due to the variability of the rotation rate of the earth. That problem was solved by defining the hyperfine interval in atomic cesium to be a fixed and exact frequency.

The electric unit, the ampere, is now defined in terms of the forces between current-carrying wires. Because the realization of that definition is so difficult, a parallel system of electrical units based on conventional (but not Si) values for the Josephson ratio 2e/h and the quantum Hall resistance, h/e2, is commonly used instead of the SI. The redefinition will join the SI and this parallel system of practical units, removing ambiguity and allowing the highest possible accuracy realization of SI electrical units.

The redefinition of the kelvin, the unit of temperature, will resolve issues with the difficulty of realizing the current definition, which is based on defining the triple point of water. The redefinition of the mole represents a major simplification and a democratization relative to the element chosen to define it.

The SI redefinition will modernize the SI, eliminate drifts and uncertainties in the definitions of four base units, and reduce the uncertainties in the values of the fundamental constants.

Further information about the introduction of the new definitions of the units is available from the website of the Bureau International de Poids et Mesures:

www.bipm.org/utils/common/pdf/24_CGPM_Resolutions.pdf
and
http://www.bipm.org/cc/CCU/Allowed/23/CCU_Final_Recommendation_U1__2017.pdf

or for the definitive recommendation in French
http://www.bipm.org/cc/CCU/Allowed/23/CCU_Final_Recommendation_U1_2017_FR.pdf

The 29th General Assembly RESOLVES that the International Union of Pure and Applied Physics strongly supports the proposed revision of the International System of Units (Système International d'Unités, the SI) in which the current definitions of four of the base units of the SI will be replaced with definitions involving the specification of fixed and exact values of four of the fundamental constants of nature. Specifically, the current definitions of the kilogram, the ampere, the kelvin, and the mole will be replaced with definitions that fix the values of the Planck constant, the elementary electric charge, the Boltzmann constant, and the Avogadro constant. IUPAP supports the institution of the redefined SI on the timescale recommended by the Consultative Committee on Units (CCU) so that it takes official effect on World Metrology Day, 20 May 2019.

13.17 Resolution regarding funding of Science, especially in Brazil

The funding of science research and education is under significant threat in many countries. Budget cuts of 5-10% have been common and are to be deplored. Higher cuts, particularly in developing countries, are of even more concern. The disruptive effects of such cuts can delay and diminish education, research and development for many years after an improved economic situation allows their restoration. When IUPAP can make a positive contribution that should be brought to the attention of Council for action.

In Brazil, the budget for research of the Ministry of Science, Technology, Innovations, and Communications had a cut of 44% in 2017, and a new cut of 15.5% is expected for 2018. This will damage the country for many years, with the dismantling of internationally renowned research groups and a brain drain involving its best scientists.

The 29th General Assembly RESOLVES to write to the President of Brazil and the Minister of Science Technology, Innovations, and Communications to explain that the effects that this large cut will have, and that they will seriously jeopardize the economic future of the country, and to publish that letter on its website.

13.18

14. GENDER CHAMPION REPORT

The Gender Champion report, based on the conference reports of IUPAP sponsored conferences, in 2015, 2016 and 2017 gives the number of female participants, female invited speakers and female members in organizing advisory committees of IUPAP sponsored conferences. In summary:

Year 2015 (until October 2015):
In 2015, the number of conferences that received IUPAP sponsorship was 31. From these conferences, we received reports from **21**.

- Number of women attendees in percentage: mean value is 18(2)%, and varies between 8% and 50%,
- Number of female invited speakers in percentage: mean value is 14.5 (2)%, and varies between 4% and 27%,
- Number of female members of international advisory/organizing committee in percentage: mean value is 16(2)%, and varies between 0% and 39%

Year 2016 (from October 2015-October 2016)
In the period October 2015 - 2016 the number of conferences that received IUPAP sponsorship, is 41. From these 41 conferences, we received reports from **35.**

- Number of women attendees in percentage: mean value is 19 (1,5) % (was 17(2)% in 2015), and varies between 5 % and 52%
- Number of female invited speakers in percentage: mean value is 19 (2,7) % (this number was 14,5 (2) % in 2015). It varies between 2 % and 64% (a conference on physics education in Brazil).
- Number of female members of international organizing/advisory committee in percentage : mean value is 16(2)% (it was 16(2)% in 2015), and varies between 0% and 50%

Year 2017 (from October 2016-October 2017)
Unfortunately, only 9 conferences have sent their report in time. Nevertheless, we analyzed the data. More data has arrived and will be added to.

Number of women attendees in percentage: mean value is 13 (2) %.
Number of female invited in percentage : mean value is 17 (3) % .
Number of female members of international organizing/advisory committee in percentage: mean value is 21(4)%.

Time evolution in female participation in IUPAP sponsored conferences 2015-2017

Year	Number of conferences analyzed	percentage of female participants	percentage of female invited speakers	percentage of female members of organizing committee/ IAC
2015	21	18 (2) %	14,5 (2) %	16 (2) %
2016	35	19 (1.5) %	19 (3) %	16 (2) %
2017	9	13,3 (1,7) %	17 (3) %	21 (4) %
Average	65	17 (1) %	17 (2) %	18 (2) %

Table 1. *Percentage of female participation, in number of attendees, in invited speakers and in members of organizing /advisory committees. Irrespective of field or geographic region, the time evolution is under focus.*

Geographical distribution in female participation in IUPAP sponsored conferences 2015-2017

Continent	Percentage female participants	Percentage of female invited speakers	Percentage of female members of organising committee/IAC	Number of conferences	Year
Europe	17.5 (1)%	15 (2) %	13 (2) %	31	2015 - 2017
Asia Pacific	16 (2) %	16 (3) %	18 (4) %	12	2015 - 2017
Africa	17 (4) %	17 (5) %	17 (6) %	71	2015 - 2017
North America	15 (2) %	23 (3) %	22 (3) %	8	2015 - 2017
Latin America	25 (6) %	32 (11) %	23 (7) %	4	2015 - 2017

- **Europe** has far more IUPAP supported conferences than any other continent (we included in Europe conferences in Russia, and in Israel).
- **North America** has better numbers for female participation than Europe, even taking into account the error bars, which are quite large. The numbers of Europe were surprisingly low, where many small conferences with very low female participation and no females in the organization influenced the final values.
- The numbers of **Asia – Pacific** region and **Africa** are similar to those of Europe within the error bars.
- **Latin America** has the best values, but very low statistics, only four conferences in 3 years.
- A clear correlation between average number of female members in organizing committees and average number of female invited speakers can be observed in all continents. This is an interesting but not surprising result of the statistics on many conferences.

It can be concluded that the average value of the three percentages about female participation in 65 conferences is very similar. We do not observe significant improvement with time, taking into account the standard deviation of the average values.

Final conclusions: The final averages of female participation in physics conferences supported by IUPAP in all fields and in all regions of the world in the triennium 2015-2017 are between 17 and 18 %, which are not very good values. Even with all effort IUPAP has been putting in, we are still very far from the gender equality. More effort

should be made by the Commission chairs. There should be an IUPAP exigence for a minimum number of commission female members to the conference to get IUPAP support.

After much discussion it was emphasised that it is important to focus on the things that IUPAP can control:

- the fraction of women on various committees of the conference
- Reporting after the conference

Looking at the disastrous 2017 numbers, where 35 conferences were supported or sponsored, and only 10 reports were received. Suggestions given were:

- Funding to be provided in instalments.
- Inter-nation comparisons to be made and listed and monitored
- It is recommend that targets be given as requirements for conference support, i.e, 20% women in each of the committees, and that we do not support conferences that have less than 10% women on those committees – this should be added to the policies
- Different communities have different gender balances within them as it were, obviously across all fields we want to increase women participation but you could have something which recognize the fact that there is field to field differences and the number of women are active in those fields, and so the task is higher, harder, in one field and it would be in another.

Wordings that should go to all conference organisers and on the website"

> **"IUPAP requires conference organizers to ensure that conference committees of these kinds, international advisory committees, program advisory committees, and local organizing committees include more than the target percentage of women."**

Target percentage for 2019 to 2021 is 20%, that is, IUPAP support for these conference applications with less than 20% women on these committees will be renegotiated at the earliest possible stage before acceptances are considered, and I assume that if the negotiations do not come to above 10% then there is no good reason why they cannot come before above 10%, then still want to be supported.

These wording were discussed by the council at the first meeting and was asked to refine it as suitable.

15. ICSU GRANTS, PROGRESS REPORTS

*The **ICSU Grants Programme** is a competitive, peer-reviewed programme that supports innovative collaborative scientific initiatives of relevance to science and society.*

*The programme seeks to facilitate **active collaboration between Scientific Unions** and other members of the ICSU community (for example ICSU Regional Offices, Interdisciplinary Bodies, Joint Initiatives, Networks etc.) by addressing long-standing priorities for ICSU members in **developing science education, outreach and public engagement activities**, and to mobilise resources for international scientific collaboration.*

IUPAP plays an important role in two of these grants.

15.1. LAAMP

Sandro reported on the LAAMP project. For more details see https://laamp.iucr.org/

IUPAP and IUCr are co-lead applicants for the project *Utilisation of Light Source and Crystallographic Sciences to Facilitate the Enhancement of Knowledge and Improve the Economic and Social Conditions in Targeted Regions of the World,* which received an ICSU Grant of 300000 EUR over the three years 2017, 2018 and 2019. It is now referred to as the **L**ightsources for **A**frica, the **A**mericas and **M**iddle-East **P**roject — LAAMP. The two Unions have recruited 17 international organisations as collaborative partners and 11 participating light sources.
The project has five major tasks

1. Establish Regional Committees to develop **Strategic Plans** for each Region
    1. Africa — Simon Connell (Chair), Univ. of Johannesburg, South Africa
    2. Middle East **Özgül Öztürk** (Chair), Universität Siegen, Germany
    3. Caribbean **Carlos Cabrera** (Chair), University of Puerto Rico at Río Piedras
    4. Mexico **Matías Moreno** (Chair), Universidad Nacional Autónoma de México
    5. Middle East **Özgül Öztürk** (Chair), Universität Siegen, Germany

2. Establish an AdLS/Crystallography **Colloquium Programme** in each Region
   The Programme will dispatch experienced advanced light-source users and crystallographers to universities and other institutions and private enterprises in the targeted regions for 3-day visits to give presentations, to engage in discussions, and to visit government officials and schools.
3. Publish and Disseminate an AdLS/Crystallography **Information Brochure**
   A professional quality color brochure (hard copy and online) containing information on the various AdLS components, disciplines impacted by AdLSs and crystallography, and experimental beamline techniques will be produced. The brochure is managed by:
   Editor: Ernie Malamud, Fermilab (Retired)
   Communications Director: Andrea Lausi, ELETTRA and Lightsources.org
   Budget Manager: Brian Masara, South African Institute of Physics

4. Promote and Facilitate Researcher and Student **Short- & Long-Term Visits/Study** at International AdLS and Crystallography Facilities and Schools (*including IUCr-UNESCO OpenLabs*)
   For faculty members at universities in Africa, the Caribbean, Mexico or the Middle East, accompanied by a full time PhD student. Interested in using AdLSs to further one's research and training endeavors. Previous experience with using AdLSs is limited to a year or less. Ability to spend 2 months as a full-time visitor in residence at an AdLS that is a LAAMP collaborative partner.
   LAAMP provides 2,000 Euros per person to cover transportation and (partially) accommodation costs. The remainder of accommodation and subsistence should be negotiated with the host AdLS and other sources of support.
   In the first call in 2017 16 Awards were provided .

5. Convene a **Meeting at UNESCO** Headquarters in Paris to Present the *Strategic Plans* for the Regions and Launch the *Business Plans*

15.2. Gender Gap

Igle Gleadhil, the Chair of Working Group 5 reported on the ICSU Project *A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It*, co-lead by the IMU and IUPAC, which also received a grant of 300000 EUR over the three years 2017, 2018 and 2018. Although IUPAP was not able to be a leading applicant on this grant because of the IUPAP rules, it played a major role in developing the proposal

and has a leading role in its implementation. The project, which will be referred to as the Gender Gap Project, is led by Prof Marie-Francoise Roy of the IMU. Other partners include There were 10 partners altogether, including IAU, the astronomers, IUBS, the biological sciences, and ICIAM, the industrial and applied mathematicians, IUHPST, history and philosophy of science and technology, UNESCO, Gender InSITE, and the Organisation for Women in Science for the Developing world.
A major principle of the program is that future actions to reduce the gender gap must be evidence based, and that the program involves collecting the evidence. Because the situation in different cultures is different it is important to collect information about difference cultures and that means that any survey must have input from those cultures in its design and that it must be conducted in the relevant languages. Unfortunately translation cost money and the number of languages which can be used will be limited by the financial resources available to the project.

The project proposal defined the three tasks of the project
Task 1: The joint global survey involving 10 partners and 8 unions, aiming for 45,000 respondents, both men and women, in 8 languages at least. We want it to be compatible with physics survey, so that we can detect trends. It needs to look at recent changes, and the recent limitations on the education of women and young women, and it needs to evaluate the obstacles and I particularly want to evaluate the actions that have been taken, to uncover what works and what does not work.

Task 2: Is a study of publication patterns in the sciences, to determine the numbers of women in the field and the part they play in research. It arises from an IMU study, which used metadata analysis of what is available on the web to look at publication patterns in mathematics. This study showed women are authors of about 5% of the papers in two major journals. The number of women authors has tripled since 1970. Women definitely publish than men and their earlier career stages, they leave academia at a higher rate than men (as we know in physics), but higher ranked journals publish fewer papers by women. And it is very rare for women to have single authored papers, and single authored papers are important in mathematics. We want to extend this to the other disciplines, and it is quite an interesting project, and it will look at arXiv and zMAT and other databases.

Task 3: A database of good practices and dissemination and resources like the little pamphlets aimed at parents in developing countries by region. Material for girls and young women, which many people produce, for parents, and for organizations. There has to be rigorous translation and distribution of these materials. It is important to get the message to parents to avoid a common bias against higher education for girls, If a kid says, I want to be a physicist, then it appears to happen, more than often, that the parents will say to a boy, “so great, what is the best university we can get you to, and how do we do it”; if a girl says that, there are a lot of responses, are you really sure dear? Girls cannot do physics, and who is going to look after us when we get old?”
The initial project workshop took place at UNESCO, There is an Asian workshop coming up in Taipei, one in Latin America in November, and one in Africa in Capetown, in early December. The draft test questionnaire will be tested on these people, particularly in questions about publishing, marriage, harassment, discrimination and work life balance. We are aiming for maximum distribution and return. We request your help and support, please. This survey is a snowball sample, a social science term for to sending it to everyone that you can possibly get it to, and calming them down when they have got multiple copies. If you can organize your physical society, or national liaison to work with us on this, then we can get better samples of a different kind from the snowball sample, we do need the publicity in our communities, please encourage physicists to contribute. If we start this project, and we do not come up triumphant, then we will look silly to the chemists. So, participate, submit and please encourage people to submit on time, especially from developing countries.

16. UNESCO – MOU & IYBSD

Currently there is a MOU with UNESCO, with the international basic sciences program in UNESCO, that MOU is due to finish at the end of 2017, and we are in the process of negotiation to renew it. A draft has been sent to them but no response has been received. The delay may be due to some concerns about the situation of the international basic sciences program in the UNESCO, that was reviewed earlier this year, as is now requirement for all UNESCO programs. That review was quite critical of the international basic sciences program, IBSP. It claims that the IBSP did not have a strategic plan and it was not focused, and not well managed. And the review offered a number of possibilities, including restructuring it, restricting its activities to working on policy and program matters, and transferring activities like the support we got from them for international year of light to other partner organizations such as ICTP or CERN or SESAME. There was a great deal of concern about this. Michel approached the French ambassador UNESCO from whom we actually got support earlier and on our proposal for international year of basic sciences for development. He then suggested that we write to the Australian ambassador. As it was suggested to us that the situation was such that it would be useful if a significant number of member countries indicated that they wish the IBSP to continue its existence, and that happened. I believe we will get, if the IBSP does continue in existence, a MOU in place. The recent appointment of a new director general for UNESCO, could cause further interruptions in the organization, so it may not happen quickly but I think it will happen.

The words of the MOU are in the package that you can access on the web. It is essentially a continuation of the previous MOU, pointing out the various items where UNESCO and IUPAP collaborated in the past, and mentions such items that is the IYBSD on which we may be collaborating in the future. Every year we get an invitation to the board meeting of the International Program of Basic Sciences, and I do not know when was the last time that someone from IUPAP actually attended that meeting. This year Michel represented IUPAP in that meeting. During the course of the discussions realized that it would be a good idea to have an international year associated with our centenary year, and raised that possibility in the discussions around the table, then got support from IUPAC, ICSU, and others. Kennedy, Cecilia and Bruce were in discussion with him, decided that it was indeed a good idea, and took the ideas to council earlier this year, described it to them and ask them whether they approved continuing this discussion, which we did, and so the discussion goes on. At our general assembly, we should get formal approval of our members to pursue this, and we then approach the UNESCO, IBSP, for their approval. Given their approval, we can move into working on general preparation of how we are going to do this, deciding on, some of the items about what is going to be done, and we look for approval by the UNESCO executive committee, and formal approval by the UNESCO general conference in 2019, and our own general assembly in 2020. That give us the approval to go ahead and we have two years to get it in place. We have had good relationships with UNESCO, in spite of the fact that we were not present at the meeting for quite a number of years.

17. INTERNATIONAL YEAR OF THE PERIODIC TABLE (IYPT)

2019 is the sesquicentenary (150th anniversary) of Mendeleev's paper on the periodic table, and it also happens to be the centenary year for IUPAC. A proposal that 2019 be the International Year of the Periodic Table (IYPT) came forward from IUPAC with the strong support of the Russian Academy. It has been supported by UNESCO Executive and is likely to be supported by UNESCO at its meeting about now. I remind you that, back in 2016, IUPAP agreed to be one of the cosponsors of this. In my letter to UNESCO in support of the IYPT, I pointed out that ALL elements are made by nuclear reactions, regarding the fusion of quarks into the protons is a nuclear reaction, so the elements are a major interest to physicists

In the IYPT I suggest that

- IUPAP needs to educate the public that all elements are made by nuclear reactions, and should take every opportunity to do this
- Any suitable events that we have in 2019 should be linked to the IYPT.
- If there are events in, perhaps the nuclear physics conferences in 2019 or in astrophysics and condensed matter conferences that relate to the elements, we should tie them to the IYPT.

18. ANY OTHER BUSINESS

- Kennedy gave a formal address as the new President of IUPAP for the term 2018-2020
- It was agreed to ask the next Council to consider rewriting statutes and the by-laws, if that proceeds we will seek approval of the new Statutes at the 30th General Assembly.
- Gifts were presented to retiring members

CLOSE OF THE C&CC

APPENDIX I

IUPAC and IUPAP Procedures for Validating Claims for the Discovery of New Elements and Naming those Elements

IUPAP/IUPAC as of Sept 18, 2017

Introduction

The procedures recently followed for validating claims for the discovery of new elements 113, 115, 117 and 118 and naming those elements had their origin in the IUPAC-IUPAP appointment of the Transfermium Working Group of IUPAC and IUPAP in 1986. It is now timely to re-establish these co-operative arrangements, both for the validation of the claims and for the naming of the elements. This process was initiated by IUPAP, also recognizing that the process of synthesizing or discovering a new element relies heavily on nuclear physics facilities and techniques, and is a complex process where chemists and physicists are often involved.

The validation of claims has been made by an IUPAC-IUPAP joint working party. This document sets out the agreed procedures for the appointment of the Joint Working Party, for its operation, and for the reporting of its results.

The naming of the elements has been under the oversight of the IUPAC Division of Inorganic Chemistry, and this document also sets out the agreed procedures for determining and reporting the new names.

IUPAC-IUPAP Joint Working Party for the validation of claims of new elements.

1. Guidelines for the Appointment of Members

1.1. In the event of a claim for the discovery of new elements requiring investigation, or of the publication of results which call into question the results analysed by previous Joint Working Parties, the Presidents of IUPAC and IUPAP will appoint by mutual agreement a Joint IUPAC-IUPAP Working Party of six members with relevant expertise to validate claims and resolve disputes for the Discovery of New Elements,

- three to be nominated by the President of IUPAC, with advice from the Division of Inorganic Chemistry
- three to be nominated by the President of IUPAP, with advice from the Commission for Nuclear Physics,

such that:

- all six members come from different countries, preferably and if possible not from those who are claiming new discoveries, or raised a dispute
- appointments are made respecting the importance of both continuity and expertise in the process of evaluating discoveries of new elements.

1.2 The members must not come from a claimant institution, or from an institution whose earlier claims are questioned, or from an institution questioning those claims.

1.3 The Joint Working Party will elect a Chair and a Vice Chair, subject to the approval of the Presidents of IUPAC and IUPAP.

1.4 After the appointment of the Joint Working Party one of the Unions will provide the secretariat which invites and collects information from claimants and others, relevant to the claims made and passes that information to the Joint Working Party and to the other Union.

1.5 The Joint Working Party will be appointed until it reports on the claims it was set up to validate, or resolve a dispute. It will be released from its responsibility and disbanded after the naming of elements is announced and ratified.

1.6 Should the Joint Working Party not resolve the claims within two years, the Presidents of IUPAC and IUPAP will consult to decide whether, and in what form, it should continue to work.

1.7 Should additional claims of the discovery of new elements or rebuttals of such claims be received while the Joint Working Party is in operation, the Presidents of IUPAC and IUPAP will consult on whether these claims should be referred to the existing Joint Working Party, whether the Joint Working Party be reconstituted to consider them, or whether a second Joint Working Party should be appointed to consider them.

2. Procedure for approval of claims by the Joint Working Party

2.2 The Joint Working Party shall evaluate claims against the criteria set out by the Transfermium Joint Working Group in 1991 [Wapstra *et al* "Discovery of the Transfermium Elements" (Pure and Appl. Chem, Vol.63,No. 6, p.p.879-886 (1991)], and in updates agreed to by both Unions.

2.3 The Joint Working Party shall report annually on the progress of its work to the Presidents of IUPAC and IUPAP.

2.4 **The Joint Working Party shall also report to the Presidents of IUPAC and IUPAP**

- when there are new developments which it feels should be reported,
- when a report is requested by the President of one of the Unions.

2.5 A copy of the draft report as sent for technical review will be provided to the Presidents of IUPAC and IUPAP.

2.6 A copy of the report of the Joint Working Party to be submitted for publication will be provided to the Presidents of IUPAC and IUPAP.

2.7 It is intended that the full detailed report will be published in *Pure and Applied Chemistry,* and that, to publicise the verification of a new element, a short report be published in a widely read general scientific journal, such as *Science* or *Nature.*

2.8 The Presidents of IUPAC and IUPAP in consultation with the Chair of the IUPAP Commission on Nuclear Physics and the President of the IUPAC Division of Inorganic Chemistry will appoint two co-editors, one from each Union, who will jointly supervise the peer review of the report of the Joint Working Group, using at least two and up to four referees, and provide the reviewed and revised copy for publication to the editor of the journal *Pure and Applied Chemistry,* including the referees' reports and all related correspondence. It is expected that the editor of *Pure and Applied Chemistry* will incorporate this material into the normal review process of the publication.

2.9 The report, as it is to be published shall be approved by the Presidents of IUPAC and IUPAP, on the advice of the Division of Inorganic Chemistry and the Commission for Nuclear Physics, respectively, and published as a provisional report in the journal *Pure and Applied Chemistry.*

2.10 Provisional announcements in the name of both Unions of the findings of the Joint Working Party shall be made on publication of the approved final report, by joint press release and by any other means. The announcement shall clearly state that the determination of claims for new elements is the work of a joint working party of both Unions.

2.11 After publication and announcement of the findings of the Joint Working Group, the provisional report is open for comment for five months. Comments will be forwarded to the Presidents of IUPAC and IUPAP, who will, with advice from the Division of Inorganic Chemistry and the Commission for Nuclear Physics, respectively, decide whether to make the report final, or on what other actions should be taken.

3. Naming of New Elements

3.1 Once the report has been made final the President of the Inorganic Chemistry Division of IUPAC invites the laboratory or laboratories to which priority for discovery has been assigned to propose a name and symbol for the element in line with the established guidelines. After names and symbols have been proposed and the procedures of IUPAC set out in the paper "How to name new chemical elements (IUPAC Recommendations 2016)", DOI 10.1515/pac-2015-0802 for the approval of those names have been concluded, the provisional recommendation will be approved by the Presidents of both Unions before publication. The announcements of the provisional recommendation and the names and symbols of the new elements shall be made by both Unions, by joint press release and by any other means. The announcement will clearly state that the provisional names and symbols have been approved by IUPAC, following the determination of claims for the discovery by a joint working party of both Unions.

3.2 The provisional recommendations are open for public review for a period of five months. At the conclusion of this period the President of the Inorganic Chemistry Division forwards the Division's final recommendation for the name and atomic symbol of a new element to the Council of the IUPAC for formal approval by the Union and publication in *Pure and Applied Chemistry.* At the time the final recommendation is provided to the Council of IUPAC it will be notified to the President of IUPAP.

APPENDIX II

Approved Conferences for 2018

Cm	Typ	Title of 2018 IUPAP Conference Applications	Acronym
C2	B	Conference on Precision Electromagnetic Measurements	CPEM 2018
C2	B	International Conference on Precision Physics of Simple Atomic Systems	PSAS 2018
C3	B	Unifying Concepts in Glass Physics	UCGP 2018
C3	C	Active Matter and Non-equilibrium Statistical Physics	AMNSP 2018
C3	C	Dynamics and thermodynamics of interacting systems from classical to quantum	DTISCQ 2018
C3	C	Workshop on Complex Biological Oscillations	WCBO 2018
C3	C	New Trends in nonequilibrium statistical mechanics: classical and quantum systems	NTNSMCQ 2018
C3	C	Conference of Middle-European Cooperation in Statistical Physics (the 43th edition)	MECO-43
C4	B	20th International Conference on Very High Cosmic Ray Interactions	ISVHECRI 2018
C4	B	12th International Conference on Identification of Dark Matter	IDM 2018
C4	B	8th International Conference on Very Large Volume Neutrino Telescopes	VLVNT 2018
C5	B	International Symposium for Quantum Fluids and Solids	QFS 2018
C8	A	34th International Conference on Physics of Semiconductors	ICPS 2018
C8	B	International Conference on Superlattice, Nanostructures and Nanodevices	ICSNN 2018
C9	A	International Conference on Magnetism	ICM 2018
C9	B	International Colloquium on Magnetic Films and Surfaces	ICMFS 2018
C10	A	12th International Conference on Materials and Mechanisms of Superconductivity	M2S 2018
C10	B	23rd Latin American Symposium on Solid State Physics	SLAFES 2018
C10	B	34th European Conference on Surface Science	ECSS 2018
C11	A	International Conference on High Energy Physics	ICHEP 2018
C11	B	28th International Conference on Neutrino Physics and Astrophysics	NEUTRINO 2018
C11	B	Large Hadron Collider Physics (LHCP) Conference	LHCP 2018
C11	C	History of Neutrino	Ho-Neutrino
C11	C	24th International Baldin Seminar on High Energy Physics Problems "Relativistic Nuclear Physics and Quantum Chromodynamics	BALDIN-24
C11	C	10th International Workshop on Ring Imaging Cherenkov Counters	IWRICC 2018
C12	B	13th International Conference on Nucleus-Nucleaus Collissions	NN-2018
C12	B	22nd International Conference on few Body Problems in Physics	FB-22
C12	B	15th International Symposium on Nuclei in Cosmos	NIC 2018
C12	C	28th International Conference on Electromagnetic Isotope Separators and related Topics	EMIS 2018
C13	D	African School of Fundamental Physics and Applications	ASFPA 2018
C13	D	African School on Electronic Structure: Methods and Applications	ASESMA 2018
C13	D	Entrepreneurship Workshop for Scientists and Engineers	EWSE 2018

C13	**D**	**Science for Development**	**SFD 2018**
C14	**B**	**International Conference on Physics Education**	**ICPE 2018**
C15	**A**	**International Conference on Atomic Physics**	**ICAP 2018**
C15	**B**	**19th International Workshop on the Physics of Highly Charged Ions**	**HCI 2018**
C16	**A**	**International Congress on Plasma Physics**	**ICPP 2018**
C17	**C**	**International Quantum Cascade Lasers School and Workshop**	**IQCLSW 2018**
C18	**A**	**29th International Congress on Mathematical Physics**	**ICMP 2018**
C20	**A**	**Conference on Computational Physics**	**CCP 2018**
AC1	**B**	**International Conference on X-Ray Microscopy**	**ICXRM 2018**
AC2	**A**	**15th Marcel Grossman Meeting on General Relativity**	**MG-15**
AC4	**A**	**World Congress on Medical Physics and Biomedical Engineering**	**WCMP-BE 2018**