

## Place and Date

Sala Ulisse: Accademia delle Scienze  
Bologna, Italy

September 7, 2018  
10:00- 17:00

## Participants

*C-12: All members of Commission 12 were present.*

Claes Fahlander (Chair, Sweden)

Ani Aprahamian (USA), Maria Jose Garcia Borge (EU, Spain), Mahananda Dasgupta (Australia), Iris Dillmann (Canada), Fanny Farget (France), Andrey Fomichev (Russian Federation), Anna Mackova (Czech Rep.), Débora Peres Menezes (Brasil), Eugenio Nappi (Italy), Joachim Stroth (Germany), Hirokazu Tamura (Japan), Eberhard Widmann (Austria), Yanlin Ye (China)

### *Observers/Guests*

#### *WG-9:*

Navin Alahari (GANIL)

Hideto En'yo (RIKEN)

Don Geesaman (ANL- NSAC))

Paolo Giubellino (GSI)

Kazuhiro Tanaka (KEK)

Anthony Thomas (U of Adelaide, past chair of WG-9)

Robert Tribble (BNL)

Nigel Smith (TRIUMF)

Willem Van Oers (TRIUMF)

## Agenda

### *Welcome*

Claes Fahlander: Welcome of introduction of new members of C-12 as well as guests and observers.  
Eugenio Nappi: Welcome to Bologna

*Approval of the agenda and minutes of the meeting from C-12 meeting held in Tokyo in 2017.*

*Report of Chair on the meeting of IUPAP Council and Commission Chairs (C&CC)*

Meeting began with a note from chair acknowledging that C-12 membership is now 50% female. The chair reported on news from the IUPAP C&CC meeting that took place in Singapore in May of 2018. IUPAP now has 55 member states.

### *Gender Issues*

New IUPAP Gender Champion after Alinka Lepine-Szily (former chair of C-12) is Silvina Ponce Dawson. She presented in Singapore an analysis of gender issues to conferences supported by IUPAP C-12 in the past five years and she concluded that there was a direct correlation between the percentage of women on organizing committees of conferences and the number of invited women speakers to the conferences.

#### **Recommendations:**

- There should ideally be at least 20% women on the major committees of the conferences.
- 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.
- Commission Chairs are expected to negotiate with applicants for IUPAP support which don't have at least 10% women on these committees, to raise the fraction of women members.

#### **A global survey by ISC to chart equality in the fields of:**

- mathematics, IT and natural sciences, see <https://gender-gap-in-science.org/>.

The minutes of the meeting can be found on the IUPAP webpage:

[http://iupap.org/wp-content/uploads/2018/06/CnCC-Minutes\\_21052018\\_edited.pdf](http://iupap.org/wp-content/uploads/2018/06/CnCC-Minutes_21052018_edited.pdf)

[http://iupap.org/wp-content/uploads/2018/06/Executive-Council-Minutes\\_v2.pdf](http://iupap.org/wp-content/uploads/2018/06/Executive-Council-Minutes_v2.pdf)

### *IUPAP Centenary Coming up in 2022*

There has been a new working group set up to work on celebrations of the IUPAP centenary (WG-17). The first General Assembly (GA) meeting of the IUPAP was held in Paris in 1923 and plans are to hold General Assembly meeting of 2023 in Paris.

Bids are invited for holding the GA meeting in 2020

Questions were raised about the efforts to publicize IUPAP more broadly. The suggestion to use social media was brought up to engage younger scientists.

### *IUPAP Neutrino Panel*

We heard a report on the neutrino Panel by Nigel Smith, one of the three co-chairs of the neutrino panel. There had been a **resolution at GA in São Paulo in 2017** with the stated mission shown below.

**Mission: "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".**

A combined effort on neutrino physics under the supervision of C-4, C-11 (convener), and C-12 commissions, working groups WG1 (ICFA), WG9 (ICNP), and WG10 (ApPIC). The panel is expected to be composed of about 15 members in total. All engaged commissions have made their suggestions to the council. Appointments of membership are expected after the October 2018 meeting of the council. WG-

9 had suggested Nigel Smith as one of the three co-chairs of the panel. The Council Resolution in Singapore in 2018 was to have the Neutrino Physics Panel in place by June 2018. The final list of members of the Neutrino panel should be approved at the C&CC meeting in October 2018.

***Associate Memberships of C-12 members to other commissions and working groups: C-12 is allowed to participate in four other commissions or groups.***

The engagement of all associate memberships **end in 2018**. The present engagement of C-12 commission members is in the following groups:

- C-11 Particle Physics – Eugenio Nappi
- C-13 development – Claes Fahlander
- C-19 Astrophysics – Weiping Liu
- WG- ApPIC – AstroParticle and Neutrino Astrophysics – Ani Aprahamian

ApPIC and C-13 were not very active groups and a decision was made to dis-engage.

The new suggestions for associate memberships included **C-14 for Education, C-19 for Astrophysics, and WG-14 in accelerator science**. The new **suggested** appointments for associate membership are:

- C-11 Particle Physics – Eugenio Nappi
- C-14 Education – Yanlin Le
- C-19 Astrophysics – Iris Dillmann
- WG-14 Accelerator Science – Ani Aprahamian

Final appointments are to be made by Council in October, 2018.

***Report from Working Group -9: Frontiers of Nuclear Science presented by Bob Tribble (Chair WG-9)***

The report included an introduction of the role of WG-9 for the benefit of the new members of C-12 commission. WG-9 started as a C-12 sub-group and became working group 9 following the IUPAP General Assembly meeting in South Africa. The membership of WG-9 includes the chair, past-chair, secretary, and directors of NP facilities from around the world. The mandate of WG-9 is to keep and update a compendium of NP facilities worldwide (Report Number 41) and to serve as a forum for the discussion of future directions of nuclear science. The next iteration of Report No. 41 is ready and this version will be limited to facilities with user groups and published on-line. New members of WG-9 are suggested by existing members for new and emerging facilities around the world. The report of Bob Tribble is attached to these minutes.

***IUPAP C-12 Commission supported Conferences in 2017***

There were three C-12 supported conferences in 2017. The statistics and reports for all three conferences are included in the table below. QM2017 received category A support, LANSPA2017 and ARIS2017 received category B support.

	QM2017	LASNPA2017	ARIS2017
Attendees	716	261	277
	11%	29%	23%

Women attendees	112	77	63
Invited speakers	38	32	53
	21%	28%	32%
Women invited speakers	8	9	17
Countries participating	32	33	23
Members of IAC	42	46	35
	26%	26%	26%
Women members of IAC	11	12	9
Scientists from developing countries receiving travel assistance	12	10	10

### *IUPAP C-12 Commission supported Conferences in 2018*

Support by C-12 in 2018 went to five conferences. Three of them for category B as listed below, one for Category C, and one endorsement.

**NN 2018**, Omiya Japan, December 2018. **Category B.**

**NIC 2018**, Gran Sasso, Italy, June 2018. **Category B.**

**Few-Body Problems in Physics**, Caen, France, July 2018. **Category B.**

**EMIS 2018**, CERN, Switzerland, September 2018. **Category C.**

**Quark Matter 2018**, Venice, Italy, May 2018. **Endorsement.**

### *New conferences asking for support by IUPAP C-12 Commission in 2019*

Support was requested from C-12 for five conferences listed below in 2019. C-12 heard presentations on all the proposed conferences.

**INPC 2019**, Int. Nuclear Physics Conference. Glasgow, Scotland. Presentation by David Ireland.

**SQM 2019**, Strangeness in Quark Matter. Bari, Italy. Presentation by Domenico Elia. Asking for **Category B** support.

**QM 2019**, Quark Matter. Presentation by Joachim Stroth. Asking for **Category A** support

**TAN19**, 6th International Conference on the Chemistry and Physics of the Transactinide Elements, 2019. Presentation by Claes Fahlander. Asking for **endorsement**.

**LASNPA 2019**, Latin American Symposium on Nuclear Physics and Applications. Presentation by Débora Menezes. Asking for **Category B** support.

## *Report on the IUPAC/IUPAP procedures for Joint Working Party*

A report was presented by Claes Fahlander on the joint IUPAC/IUPAP procedures for Joint Working Party. An initiative started by IUPAP on the New Procedures for Validating Claims for the Discovery of New Elements.

### **Features of the new procedures are:**

The new JWP to have three members appointed by IUPAP and three by IUPAC. IUPAP President to consult C12, IUPAC President to consult Inorganic Chemistry Division.

Emphasize need that the members have appropriate experience and are independent from claimants. Reporting is to be to both Unions, including C12 and Inorganic Chemistry Division.

Before publication: The Presidents of IUPAC and IUPAP in consultation with C12 and the IUPAC Division of Inorganic Chemistry will appoint two co-editors, who will jointly supervise the peer review of the report of the JWP, using at least two referees.

Publication of detailed report in Pure and Applied Chemistry, simultaneous publication of short report in journal like Science or Nature. Publication to be provisional and open for comment for five months.

Comments will be forwarded to the Presidents of IUPAC and IUPAP, who will, with advice from C12 and the Division of Inorganic Chemistry decide whether to make the report final, or on what other actions should be taken.

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 JWP 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.

[http://iupap.org/wp-content/uploads/2013/07/CCC-Minutes\\_2017\\_v6.pdf](http://iupap.org/wp-content/uploads/2013/07/CCC-Minutes_2017_v6.pdf)

Previous criteria were described in report by the Transfermium Working Group 1991.

New working group was set up in 2017, the **Joint Working Group**, to see over the old criteria, formulate new ones and give guidelines on how to apply them.

### **Members of JWG**

Chair: Prof. Sigurd Hoffmann, GSI (Chair), indicated by IUPAC.

Prof. Claes Fahlander, Lund University, indicated by IUPAP.

Dr. Jacklyn Gates, Lawrence Berkeley National Laboratory, indicated by IUPAP.

Prof Hideyuki Sakai, RIKEN (Vice-Chair), indicated by IUPAP.

Professor Sergey Dmitriev, Dubna, indicated by IUPAC.

Dr James Roberto, ORNL, indicated by IUPAC.

### *International Year of the Periodic Table in 2019*

It was resolved in Singapore at the C&CC meeting to “increase the visibility of nuclear physics when it comes to super-heavy elements; to clarify the notion of these very heavy elements and the production and identification of them, which mainly is by means of nuclear physics methods and techniques. Educate the public about the meaning of the elements and their creation, linking it to the processes that naturally occurred in the nucleosynthesis, primary, p-process, s-process, rp-process, r-process etc., and that all elements made by nuclear reactions”.

Any suitable events that we have in 2019 should be linked to the IYPT, e.g., at conferences in nuclear physics or in astrophysics and condensed matter that relate to the elements.

Advertise the IYPT at nuclear physics conference webpages.

Organize public lectures at nuclear physics conferences.

Encourage nuclear physicists to make public lectures on the subject.

Encourage nuclear physicists to write popular science articles on the subject.

Set up joint activities for public lectures or exhibitions.

The past chair of C12, Alinka Lépine-Szily, is a member of the IYPT Advisory Board. She will be IUPAP's and C12's spokesperson at the IYPT organization when it comes to plans of actions, financial questions, etc.

### *Nominations of Young Scientist Prize*

There have been 30 nominations for the Young Scientist Prize (5 female and 25 male) from Asia (6), Europe (18), and North America (6) in all areas of nuclear physics with the largest concentrations in nuclear structure (12), nuclear reactions (8), and hadron physics (5).

The selection will take place in two steps and the winner(s) will be invited to the INPC 2019 for an invited talk, their citation, and monetary prize.

### ***Closed Executive Session:***

#### *Discussion of requests for conference support*

**Category A** support was recommended by C-12 for **INPC 2019** and **Quark Matter 2019**. If Council will not approve both, a preference was indicated by C-12 for INPC for its broader Nuclear Physics scope.

**Category B** support was recommended by C-12 for LASNPA 2019 in Costa Rica, and SQM 2019 in Bari, Italy.

**Endorsement** was not suggested for TAN19 since the advisory committee did not meet IUPAP guidelines on gender balance. C-12 chair will approach the group with a suggestion to modify their lists. If the

organizers adhere to that suggestion C-12 suggest endorsement. A problem of not endorsing TAN19 was discussed at the meeting. TAN19 is a regular conference dealing with the search and discoveries of superheavy elements. It is a conference that over the years has been supported by IUPAC. During TAN19 there will a special focus on the periodic table since 2019 is the Year of the Periodic Table, and both the President of IUPAC and the President of IUPAP will attend the conference to give welcome addresses. From that point of view it would be desirable to have both unions logo on the TAN19 webpage.

### *Discussion of YSP selection criteria*

Last time, there were external reviewers invited to evaluate in addition to the C-12 members. This was not very useful and we have decided to abandon that approach this time. Conflicts of interest were discussed and procedure is determined to take place in two steps. A first step of a short list and a second list to determine the winners. The proposed procedure is as follows:

Members of C-12 will be assigned to assess each nominee. Each C-12 member will have to review 4 or 5 nominees. Each of us should then provide a ranking of those 4 to 5 nominees based on the following criteria:

Quality and impact of the research project: 1-5 points.

Publication record, primary authorship, impact factor of journal, etc.: 1-5 points.

Identifiable individual contribution of the nominee: 1-5 points.

Record of invited talks and visibility of the nominee at nuclear physics conferences: 1-5 points.

Future prospects of the nominee: 1-5 points.

(1 = ok, 2 = good, 3= very good, 4 = excellent, 5 = outstanding)

Maybe also write a short text to motivate the ranking.

This initial process will then converge into a preliminary shortlist of candidates. From the shortlist, each member of C12 will be asked to select three and rank them with 1 for the top candidate, followed by 2 and 3. We will then narrow the number down to 6 top candidates, out of which we shall select three winners.

We should keep in mind, the balance in gender, region, and subfields of nuclear physics.

### *Request for Any Other Business*

### *Date and Place of Next Meeting of C-12*

INPC 2019 meeting in Glasgow Scotland was determined as the best place and time for the next meeting of C-12. The dates of the conference are July 29-August 2, 2019. Invitation to hold meeting at the University of Glasgow just before or after the INPC meeting.

Ani Aprahamian  
And  
Claes Fahlander