

International Union of Pure and Applied Chemistry

101st MEETING OF BUREAU

Bratislava 7-8 April 2018

MINUTES

Attendees: Prof. Qi-Feng Zhou (Chair), Prof. Natalia Tarasova, Prof. Christopher Brett, Prof. Richard Hartshorn, Mr. Colin Humphris, Dr. Lynn Soby (Executive Director), Prof. Russell J. Boyd, Prof. Mei-Hung Chiu, Prof. Javier Garcia Martinez, Prof. Mary Garson, Prof. Hemda Garelick, Prof. Ehud Keinan, Prof. Kew-Ho Lee, Prof. Christopher K. Ober, Prof. Pietro Tundo, Prof. Ken Sakai, Prof. Ron Weir, Prof. Lars Ohrström, Prof. Francesco Nicotra, Prof. Greg Russell, Prof. Zoltán Mester, Dr. Rai Kookana, Prof. Rita Cornelis, Prof. Alan Hutton, Prof. Jan Apotheker, Dr. Carolyn Ribes, Dr. Carlos Tollinche, Ms. Bonnie Lawlor, Prof. Jurgen Stohner

Guest: Prof. Doug Templeton, Prof. Jean-Pierre Vairon, Prof. Jan Reedijk

Secretary: Dr. Fabienne Meyers

SATURDAY 7 APRIL 2018

1. INTRODUCTORY REMARKS AND WELCOME FROM HOSTING SOCIETY

Professor Qi-Feng Zhou thanked all the participants and the host for their hospitality. In particular he thanked Carolyn Ribes for her engaging presentation on IUPAC and Industry during the preceding session. Professor Zhou announced that he will share the duties of presiding the Bureau with the Secretary General, Professor Richard Hartshorn. He invited everyone to introduce themselves with a short presentation.

2. FINALIZATION OF AGENDA

2.1 Additional Agenda items

1. IUPAC-Zhejiang NHU Award Program with ICGCSD will be discussed under 10.14.1

The Secretary General referred to the Agenda and asked if there were any additional items. There were none. The agenda was approved as proposed.

3. MINUTES OF 100TH MEETING OF THE BUREAU (SAO PAULO, JULY 2017)

The Secretary General referred to the minutes of the 100th meeting of the Bureau included in the Agenda book and asked if there were any comments. As there were no comments, the minutes of the 100th meeting of the Bureau were approved by show of hands (unanimous).

DECISION:

The Bureau approved the Minutes of the 100th (Sao Paulo) meeting.

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3.1 MATTERS ARISING FROM MINUTES (NOT COVERED BY ITEMS ON AGENDA)

No matters arising from the minutes were raised.

4. MINUTES OF 156TH EC MEETING (RSC, LONDON, NOVEMBER 2017)

4.1 RECEIPT OF DRAFT EXECUTIVE COMMITTEE MINUTES BY BUREAU

The Secretary General noted that the draft of the 156th Executive Committee meeting minutes was in the Agenda Book and asked if there were any comments. There were no comments and the minutes were received by the Bureau.

4.2 HIGHLIGHTS AND QUESTIONS ABOUT EXECUTIVE COMMITTEE ITEMS NOT ON BUREAU AGENDA

There were no questions about items for the minutes of the Executive Committee.

5. MINUTES OF 49TH MEETING OF COUNCIL

Decisions and Actions from the Council Meeting have been posted on the website and are included in the Agenda book for reference. The draft minutes of the 49th Council meeting are not yet available.

The Secretary General asked if there were any questions. There were no questions about this draft.

6. ACTION ITEMS FROM PREVIOUS MEETINGS NOT COVERED ON AGENDA

A complete list of outstanding, in progress, and completed action items is in the Agenda book.

Bureau members were asked to review their relevant open items and determine if they are completed. [Agenda p.77]

[156EC05] [FM] Prepare an outline of the GA2019 schedule based on and similar to 2017, preferably with time available to allow members to attend the plenary of the Congress (from Monday on) and to schedule ICTNS a day ahead (Friday) prior the first Division meetings. The PC and EvC should also not be in parallel. *In Progress.*

[156EC09] [LMS/FM/RH] Elections guidelines to clarify task and responsibility of the Nominating committee. *In Progress.*

[156EC10] [LMS/RH/CH] Review options for the name of the AMP and consider implication of changing the name. Report in advance in the next council (Secretariat). *In Progress.*

[156EC12] [CB] EvC to consider a set of criteria that will allow for an evaluation of the Divisions; a draft shall be shared and reviewed with the DPs. *In Progress.*

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[156EC13] [CB/RH] EvC with the support of the SG to complete a review of CHEMRAWN by November 2018. *In Progress.*

[156EC14] [RH] Draft a project proposal to support IUPAC delegation (Richard Hartshorn) to OPCW; confirm with IUPAC and Divisions representative. *In Progress.*

[156EC15] [RH] Review eligibility <<https://awards.opcw.org/>> for 2019 submission for the Hague Award. *In Progress.*

99BU03 [CH/LS] Develop formal documentation regarding Endowment. Status Update: First meeting with advisors was held on 17 May 2017 to discuss future Auditors and possible Endowment options. Outline proposal to go to Council for implementation by the Executive Committee [Proposal for Council Complete. Approved by Council. *[Additional Work is in progress]*

99BU07[RH/ChemRAWN] Carlos Tollinche will provide the Secretary General a detailed report of future actions, strategies for the committee. [*Status: Was discussed during GA in São Paulo, replaced by 156EC13*]

99BU15 [RH] Request to Divisions to provide all Divisional rules currently being followed to be sent to LMS for inclusion in the Agenda Book to enable Council approval. [*Status: no relevant Division operating rules were identified, with the exception of Division VIII, In Progress.*]
[Update post meeting, August 2018: a compilation of the files received was arranged and shared with Division Presidents; see <https://iupac.org/who-we-are/divisions/rules/> (password to access is 'rules')]

155EC10: Lynn Soby to clarify the current privacy policy on the web. [*Delayed until after GA-for 2018 workload*]

155EC13: Natalia Tarasova will consult again with IUPAP and share the amended version of the ToR. Natalia Tarasova will keep the EC informed on the status and final resolution. [*Update at 156EC*]

7. REPORT OF THE PRESIDENT

The President thanked all the volunteers and staff for their diligent work, highlighted important activities of Union bodies and then commented on important issues for the coming biennium. Here are his comments as presented in the detailed agenda:

In preparation for the Centenary and IYPT, IUPAC100 Organizing Committee and IYPT Management Committee are collaborating and will need to collaborate further on projects and fund-raising to make best use of these two related activities to enhance public awareness of the Union as well as of Chemistry in general. Guidelines or recommendations are needed for NAOs or AOs to organize local celebrations.

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Division & Committee members, who have connections with relevant NAOs, are also encouraged to pass on the message of invitation for local celebrations.

For membership relations, as more NAOs carry out the new Company Associate & Affiliate Member Programs, and the Union tries to strengthen relations with members of different categories, we expect to have more individual chemists as well as delegates of organizations to participate. To help new comers become familiar with the Union and to stay active, Union bodies may need to review some routine procedures of our activities (e.g. nomination/election, project application, conference participation) to check whether associated documents are clear enough for new members. For example, for nomination/election process, Divisions & Committees may clarify skills or backgrounds they expect before nomination; and the on-line nomination system may show the number of candidates a certain position have received before election. (Then nominating bodies will have a better idea who they should nominate and how likely their nominees will get elected.)

A new program of fund-raising/endowment will be implemented for the Union's financial security in the long run. Apart from activities in 2019, future of IUPAC and Green chemistry & big data are also themes for fund-raising/endowment.

According to the enhanced role of the Evaluation Committee, besides continued analysis of the project portfolio, the Evaluation Committee will evaluate the general role and contributions of Divisions and Committees with respect to their aims and terms of reference as well as to alignment of the mission and strategic initiatives of IUPAC.

Qi-Feng Zhou invited comments and urged all members to share with him ideas and concerns. Responding to question of fund-raising/endowment, Colin Humphris stressed that the issue of National Subscription shall be resolved carefully and correctly.

8. VICE PRESIDENT'S CRITICAL ASSESSMENT

Professor Brett reported to the Bureau the preliminary conception of the Critical Assessment and plan to examine all current activities to objectively assess what goes well and not so well, and to better position the Union for future actions. He reminded the Bureau that IUPAC is a large and complex organization, but questioned how well it is prepared if a small part/piece was to breakdown. Are there alternative processes clearly set in place? Is the Union equipped with mechanisms that allow its volunteers to undertake meaningful activities in line with its mission and goals? Is the project system adequate? Are the activities carried under the project system carried out efficiently? Are our communications relevant and impactful? Are our internal and external communication and dissemination effective? Is IUPAC serving its members? Shall we need new funding source? Are our links with external organizations sufficiently strong?

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There are plenty of opportunities to improve, and among the priorities to address, Professor Brett cited increasing our role in parts of the world where the Union is less engaged, such as in Africa. IUPAC membership is just about 60; how can that be increased, and how can we make the best use of allowing Company Associates and Affiliate Members to be involved in Divisions and Committees as Associate Members?

A second priority must be to ensure that all our efforts in IUPAC100 and IYPT contribute to IUPAC's long-term legacy.

Chris Brett welcomed comments and suggestions and referred to the document he provided in the Agenda Book.

Colin Humphris stated that in general, IUPAC has an infinite capacity to add activities but no practice to retire any, and yet this group, the Bureau, has the responsibility to run and guide the Union on a sustainable path. He asked simply how do we actively manage all these activities?

9. REPORT OF THE SECRETARY GENERAL

The Secretary General briefly reported on current issues and activities and commented on the following points, as outlined in the detailed agenda:

- *Outstanding work of Secretariat staff*
The Secretary General reminded the Bureau that a staff of 5 is handling the business of about 2000 active volunteers (ratio 400:1 !) He also announced that in fact the staff will soon not be 5 but just 4 as Jay announced his departure. Jay's work in supporting Lynn handling of the Union accounts has been extremely valuable, and the Bureau offers their congratulations and best wishes on his new position.
- *The critical need for succession planning in securing the future of IUPAC activities*
This need for succession planning, the SG stressed must apply to all bodies; current officers must find the next leader for their committee and to secure the succession, and always have in mind the person who might follow-up. The SG suggested that projects are a good way to bring new people into IUPAC and that being on a project is a good way to start involvement in the work of the committee. In this way, projects shall be considered also as an opportunity.
- *Being aware that while it is important (and easy) to add new activities and bodies, a healthy organization must be willing and able to prune things that may not be as fit for purpose as they once were.*
This ability is one of leadership and that also heavily depends on a continuously leadership and engagement.
- *The need for IUPAC leadership in Cheminformatics – the start of our second century will be as much about communication and providing a language of Chemistry as our first one was, but this time in the world of Big Data.*

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Additionally, the SG stressed the importance to be on the look-out for initiatives which might provide opportunities for activities and collaborations for which IUPAC might be less ‘normally’ known. IUPAC collaboration with OPCW while not new, is one such example. The SG outlined the opportunity for all Divisions to contribute and participate in the next OPCW Conference of States Parties (in November 2018) and announced that he will be filing a proposal jointly with Jonathan Foreman. With Jonathan Foreman, OPCW will also consider participating in the IUPAC Congress next July in Paris, and the precise exchange and program will depend on IUPAC Divisions engagement and participation.

Natalia Tarasova reminded the Bureau that IUPAC is the only Union to ever have presented in the OPCW Conference of States Parties. Various Division Presidents commented that this is an important collaboration and that great care shall be made in how it is portrayed. Colin Humphris cautioned again that the Union does not “stretch itself too thin”.

The SG concluded by recalling that all members, and this Bureau in particular, shall keep IUPAC core values in mind; for that reason, they are recalled at the beginning of the Agenda Book.

ACTION:

All Division Presidents and Standing Committee Chairs are to consider succession planning especially within the context of the next election. They should consider recruiting new people into IUPAC via the Project system and look at their Division and committees with regard to diversity (gender, geography, etc.). It is also essential that they look at their activities and prune those things that are no longer working or that are no longer in alignment with the IUPAC vision/mission.

ACTION:

Bureau Members interested in participating in a meeting being held by the Organisation for the Prohibition of Chemical Weapons (OPCW) and scheduled for November 2018 in The Hague should contact the Secretary General.

10. REPORTS FROM DIVISIONS AND STANDING COMMITTEES

Every Division President and Standing Committee Chair has provided a full reported that is included in the Agenda Book for reference. Below are short echoes of their presentations.

10.1 DIVISION I – RON WEIR

Among the key points reported by Professor Ron Weir, he indicated that Division I has prepared a set of rules which was approved last year by the Executive Committee and that it had been shared as a model or reference with all Division Presidents. The Division I off-year meeting will take place in Milano. The Division membership has been carefully revised and the current Vice President is set and comes from industry.

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One project worth noting is the recent completion of the redefinition of the mole which will be part of the new SI targeted by BIPM.

10.2 DIVISION II – LARS OHRSTRÖM

Professor Ohrstrom indicated that the work of the Inorganic Chemistry Division is steady and included the tedious work of the Commission II.1 on Isotopic Abundances and Atomic Weights, which regularly reexamines the standard atomic weights. The revision for 14 chemical elements is being finalized. He stressed that with the work related to the new elements, IUPAC communication with IUPAP needs to be nurtured while he indicated that a lot of physicists do not always see why chemists are part of the consultation and the process of authentication and naming new elements. Division II off-year meeting is being planned to take place Botswana, where a joint workshop will be organized back-to-back with the regular committee meeting.

Professor Natalia Tarasova thanked the Division for its work and connection with the physics community. She indicated that the Joint Working Group task to review the criteria is going well (with 3 chemists and 3 physicists on the group) and that the new procedure shall be available in *PAC* by the end of the year. (project 2017-014-2-200)

Professor Ron Weir recalled that when he was ICTNS chair, IUPAP input and collaboration were always productive.

10.3 DIVISION III – FRANCESCO NICOTRA

Professor Nicotra indicated that the Organic and Biomolecular Chemistry Division benefits from good governance and continuity, with five Subcommittees devoted to specific topics. The interaction with the scientific community at large is through the endorsed-conference series which the Division and its SC oversee. Eight series of internationally recognized conferences are currently endorsed. Endorsements are based on applications made one year prior the events, but for most, planning for such conferences starts three years prior. One year in advance is a good timeline to check progress.

Division III is seeking to extend and explore the use of social media.

Professor Nicotra welcomed interactions with other Divisions, particularly through establishing joint projects.

Colin Humphris commented that in the UK, the general public view of chemistry was generally positive. Providing a clear outline of IUPAC's contribution is a more difficult message to articulate. Mary Garson commented that IUPAC should encourage conferences to have more diversity in their speakers program, and one way to do that is to share names of potential participants from one event to the next in the series.

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Responding to the comments made about social media, it was stated that ‘tools’ such as Twitter or Facebook are of limited use, and not accessible in some countries, including China.

10.4 DIVISION IV – GREG RUSSELL

Commenting on the Polymer Division, Professor Russell proudly recalled the 50th birthday *CI* issue (Oct 2017) and pointed to @IUPACPolymer which has become a popular channel to follow what the Polymer Division is up to.

Division IV is gearing up to meet at Macro2018 in Cairns in July where several awards presentations are being scheduled.

Professor Russell mentioned a few output highlights, including a recent publication in the *Journal of Chemical Education* (<http://doi.org/10.1021/acs.jchemed.6b00800>), “Critically Evaluated Rate Coefficients in Radical Polymerization – 8. Propagation Rate Coefficients for Vinyl Acetate in Bulk” (<https://doi.org/10.1002/macp.201600357>), and “Preferred names of constitutional units for use in structure-based names of polymers” (<https://doi.org/10.1515/pac-2016-0502>)

10.5 DIVISION V – ZOLTAN MESTER

For the Analytical Chemistry Division, Dr. Zoltan Mester reported that diversity, both in gender and age was a priority. The output of the Solubility Data subcommittee is steady. Division V will also be exploring more use of social media, including Twitter and LinkedIn. The off-year meeting is set to be held in Nara, Japan, in May 2018 and will also have a side workshop at the Nara Women’s University.

Triggered by mention of the work around the solubility data series, Colin Humphris indicated that IUPAC intellectual property rights to the series were lost to NIST, and that included the lost of derivative use. He stressed the importance to have all book contracts and others deals centrally and carefully examined by the Executive Director. A Division member or President cannot sign any contract with an outside party.

10.6 DIVISION VI – RAI KOOKANA

For the Chemistry and the Environment Division the diversity is such that indeed 60 % of the Division Committee members are female. The Division is supported by two SubCommittees and participates in several interdivisional project/activities, including with Divisions III, V, and VII, and CCE, COCI.

Notable activities include those involving nanomaterials and nanopesticides, RNAi, e-waste and trace elements, and risk assessment.

Rai Kookana outlined that when the Division assessed proposals, they carefully ask “Why IUPAC?”, and “Why now?”. He mentioned that external collaborators and partners have been key to successful outcomes such as their recently accepted paper in *Nature Nanotech* (<https://www.nature.com/articles/s41565-018-0131-1>).

Looking forward, Dr. Kookana stressed that the Division’s goals are to enhance collaborations, both internal and external, including for example with ACS Agro,

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CropLife Int, SETAC. He mentioned that at the coming SETAC meeting in Rome in May, the Division will host a special session. Next year in 2019, the major Pesticide Chemistry Congress will be held in Belgium.

10.7 DIVISION VII – RITA CORNELIS

For the Chemistry and Human Health Division, Professor Cornelis recalled that the focus of the Division is to cover all aspect of chemical sciences that impact human health, and therefore to promote the use of chemical tools for preventing and treating disease. The Division is coordinated around the work of three SubCommittees: Drug Discovery and Development (DDD), Toxicology and Risk Assessment (TRA), and Nomenclature for Properties and Units (NPU).

The DDD has had successful book series, Analogue-based Drug Discovery (I, II, and III), and Successful Drug Discovery (I, II, and III). The TRA is running a project on the emerging problem of Novel Psychoactive Substances and has recently completed a book “Glossary of Terms used in Toxicology”. Projects around the safety of nanomaterials are also on-going, and an outreach project to bring chemistry into the classroom has recently been undertaken. The promotion of NPU Terminology in Clinical Chemistry is still actively been looked after by a joint steering committee with IFCC. The mapping of the IFCC-IUPAC Laboratory Coding System to SNOMED CT is a second activity. The Silver Book has been recently revised and published by RSC (Compendium of Terminology & Nomenclature of Properties in Clinical Laboratory Sciences)

Dr. Cornelis commented on the website and in particular on the membership directory and questioned if/how it can be best used to bring ‘IUPAC into the limelight’. She suggested that a clear guideline of how to become a member be made available, recognizing that it shall provide clearer incentives for chemists worldwide to join IUPAC. She pointed out that IUPAC membership is a useful tool for local Chemical Societies that have a link to NAOs.

Lynn Soby indicated that adding the Affiliates is next on the development of iupac.org and concurred that the membership shall be made more attractive.

10.8 DIVISION VIII – ALAN HUTTON

For the Chemical Nomenclature and Structure Representation Division, Professor Alan Hutton reported that since the Assembly in Brazil, the Division has initiated 4 new projects, while it has addressed some shortfall of existing projects that failed or were late to deliver their planned outcome, and there are now five projects near completion, including a brief guide of organic nomenclature (project 2010-055-1-800). He indicated that a plan for a new Red Book (last revised in 2005) is being outlined, as well as further revision for the Blue Book for which not only corrections but also new content is now needed. It is however not certain that such book will actually be printed; this is still to be confirmed.

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Professor Hutton indicated that the Division is pursuing its collaborative work with ISO on metal clusters and nanoparticles. The off-year meeting will take place in Basel in August.

10.9 CHEMRAWN – CARLOS TOLLINCHE

For ChemRAWN, the Committee on Chemical Research Applied to World Needs, Dr. Tollinche indicated that Committee is currently focusing on two conferences: one on neglected disease, this coming June 2018, and which includes a session on low cost diagnostics, and a second conference on waste disposal, to be held in Nigeria in 2020, jointly planned with Division VI.

In addition to conferences, the Committee is exploring the option of hosting an on-demand webinar and working with ACS to make available more resources on its activities. For example, following the Solid Urban Waste Management conference (Apr 2016), some infographics and guidelines for labelling waste are being explored.

Dr. Tollinche indicated that ChemRAWN recognized the need to be more effective in communicating, and they have initiated a social media project with a pilot in progress that is being led by a former Young Observer. This activity will be featured in Boston at an ACS social media workshop, in August 2018.

Workshops on entrepreneurship are being planned for Paris (July 2019).

10.10 COCI – CAROLYN RIBES

In relation with the Committee on Chemistry and Industry, Dr. Ribes stressed the need for more work to develop the Company Associate program. The Committee has a steady operation and continued project management.

She indicated that one activity that the Committee supports is the Distinguished Women in Chemistry or Chemical Engineering Awards. That Award has been in place since 2011 and in celebration of IUPAC100, a special issue of IUPAC journal *PAC* is planned with invitations to contribute sent to all awardees since 2011. The *PAC* issue shall be released in February 2019 to coincide with the International Day for Women and Girls in Science (<http://www.un.org/en/events/women-and-girls-in-science-day/>)

10.11 CCE – JAN APOTHEKER

For the Committee on Chemistry Education, Prof. Apotheker highlighted three major activities: Systems Thinking in Chemistry Education, the IUPAC100/IYPT Periodic Table Challenge, and the recently launched online journal *The Chemistry Teacher International*.

In addition, he recalled two on-going activities: the Flying Chemists Education Program and for which a new flyer is available online, and the Young Ambassadors for Chemistry, for which a proposal to hold an event in Mongolia is under consideration.

The International Conference on Chemical Education is slated to take place this year in Australia and that, for CCE, is their major outreach activity. In addition, several members will also attend ECRICE in Warsaw.

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Talking about the Periodic Table Challenge, Jan Apotheker outlined that the game will be for school students and undergraduate students, that each participant will be invited to take 20 or 100 questions, that upon completion a certificate will be generated as reward, and, finally, that the task group is considering a secondary contest for which awards could be presented in Paris.

10.12 ICTNS – JÜRGEN STOHNER

In his new capacity as chair of ICTNS, Prof. Stohner is considering carefully the role of the Committee, and its commitment to “guard” the Union publication outcomes. Since he took his role, he observed that authors are not always taking the necessary care to prepare their manuscript following the IUPAC recommendations. Correcting this is not the role of ICTNS and he will “push back” to Divisions and authors to ensure that the proper standards are applied without ICTNS having to do most of the work.

These remarks came as a follow-up to the recognition outlined in the full report that ICTNS did during a period of 6 years, from Jan 2013 to Dec 2017, review, edit, and approve 62 recommendations for a total of 1725 journal pages. This is a heavy workload and it is essential that in advance of the ICTNS review, Divisions do all they can to ensure proper preparation of the manuscript.

10.13 CPCDS – BONNIE LAWLOR

For the Committee on Publications and Cheminformatics Data Standards, Bonnie Lawlor reported that among the new initiatives the Committee is overseeing, the new (beta) Goldbook is progressing well and that a webinar had been organized in January 2018 to share an overview <https://iupac.org/repurposing-iupac-gold-book-free-webinar/>. The review/development of a *Chemistry International* digital has been postponed with the idea that first, the IUPAC website shall be ‘stabilized’ and that the multiple developments involving the same designer and the setting of IUPAC100 shall be completed.

The Subcommittee on Cheminformatic Data Standards has developed and is engaged in several collaborations, including with RDA, CODATA. A workshop will take place in July, “Supporting FAIR exchange of chemical data”. A complete list of future activities is presented in the Agenda Book.

10.14 ICGCSD – PIETRO TUNDO

For the newest Interdivisional Committee on Green Chemistry for Sustainable Development (ICGCSD), the chair, Prof. Tundo, first thanked the officers and the Bureau for their support. He referred to a recent article published in *CI* Jan 2018 and reiterated the responsibilities of the Committee. He referred to the conference series ICGC and pointed to the recent coverage in *PAC*. He mentioned that the next event will be held in Thailand in September 2018. He reviewed ICGCSD participation in the PhosAgro grant awards and also in the ChemRAWN prize for Green Chemistry.

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Pietro Tundo stressed that the Committee is working closely with several international organizations and that it gained recognition through its participation in multiple international forums. He indicated the Committee has participated in a OPCW Workshop on Green Chemistry (16-17 November 2017, Le Hague) and that it will participate in a OECD Workshop on Approaches to Alternatives Assessment and Substitution to be held in Paris on 2-3 May 2018, and for which a draft document “Cross Country Analysis on Approaches to Alternatives Assessment and Substitution of Chemicals of Concern” had been prepared in March 2018.

Pietro Tundo talked about the coming summer school to be held this July in Venice, and one the next year in Tanzania in the context of IUPAC100. He also referred to specific projects, one on metrics for green chemistry (current project 2017-030-2-041), and one to be submitted on an “Industrial Green Chemistry Panel”. He concluded by stating that he believes the Committee needs a specific budget for projects and not only an “operational” budget.

Natalia Tarasova concurred with the idea that ICGCSD needs its own funding. The Treasurer suggested that first the Committee needs to articulate what makes it unique; he argued that the global enterprise in green chemistry is both large and diverse, and that to be impactful this Committee activity will need to be very carefully articulated.

10.14.1 IUPAC-Zhejiang NHU International Award for Advancements in Green Chemistry

Professor Tundo presented a proposal outlining a new Award program. A document describing this award is in the Agenda book. The total amount of USD 20k will be split as 10k for an ‘experienced’ awardee, 3*2k for 3 young scientists, and the remaining 4k to support with the expenses of the participation of the winners and the NHU representative to the awards presentation.

The question of where the presentation shall be made was raised.

The Bureau was asked for recommendation on timing of the award (i.e. odd or even year in the biennium).

DECISION:

By a vote of 14 to 12 the Bureau voted to accept the recommendation that the IUPAC-Zhejiang NHU International Award for Advancements in Green Chemistry be offered in odd years at the IUPAC General Assembly.

The new prize will be announced in 2019.

11. INTERDIVISIONAL SUB-COMMITTEE ON CRITICAL EVALUATION

Zoltan Mester referred to the presentation in the detailed Agenda Book and recalled that this proposal was initiated during the General Assembly in Sao Paulo. The resolution that

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is presented and the Terms of Reference that are proposed have been prepared in consultation with all the Divisions involved in the earlier meeting, namely, Div I, IV, V.

Recalling the detailed agenda:

RESOLUTION CONCERNING AN INTERDIVISIONAL SUBCOMMITTEE ON CRITICAL EVALUATION OF DATA

Since its founding IUPAC has supported, as an important activity, the compilation of chemical data, its critical evaluation by international teams of qualified experts, and the dissemination of the evaluated data to the world chemical community as well as to other scientists and technologists. IUPAC Divisions I, II, IV and V have ongoing projects of critical evaluation of data covering a range of both equilibrium and kinetic data types and disseminating evaluated data in both paper and electronic formats. While there is a long history of information exchange among these IUPAC efforts in critical evaluation of data, that exchange has been ad hoc and informal.

One recent ad hoc meeting, “An Interdivisional Discussion of the Critical Evaluation of Chemical Data” was held during the 2017 General Assembly and was attended by 14 individuals from five divisions and committees. The consensus of those individuals was that a need exists for continuing information exchange and activity among individuals and groups performing critical evaluation. Currently there is particular need for coordinated activity in three areas:

- First to share experience and develop guidance for critical evaluation of data based on best practices developed by established projects. A project proposal on this task has been submitted and is under review and discussion.
- Second to harmonize formats for the archiving of both compiled and evaluated data. In some longer running projects a publicly accessible database, a Technical Report or a monograph volume was considered the archival product of critical evaluation. This has led to wasted effort when it became necessary to update evaluations or modernize databases.
- Third to continue efforts to involve other Divisions and Committees within IUPAC that has interest in critical evaluation of data.

Therefore Division V, with the support of Divisions I and IV, requests Bureau approval (as required under Union Bylaws at 3.1.11) for establishment of an Interdivisional Subcommittee on Critical Evaluation of Data (ISCED). The ISCED will foster communication and cooperation related to critical evaluation of data in accordance with the attached Terms of Reference.

TERMS OF REFERENCE INTERDIVISIONAL SUBCOMMITTEE ON CRITICAL EVALUATION OF DATA

The ISCED

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- 1) is open to all IUPAC participants expressing interest in critical evaluation of data;
- 2) holds a meeting during each General Assembly to discuss matters of mutual interest;
- 3) explores approaches to harmonization of evaluation techniques, data archiving formats and channels for dissemination of evaluated data;
- 4) organizes and encourages projects and other appropriate activities related to interdivisional communication and collaboration in critical evaluation of data including the compilation of experimental data for evaluation, evaluation techniques, archiving of compiled and evaluated data, and dissemination of evaluated data to users and;
- 5) at the request of the Bureau provides liaison in the area of its competence with other international organizations such as CODATA.

The Secretary General restated that there is no separate budget associated with such subcommittees and asked the Bureau to approve the establishment of the ISCED.

DECISION:

By unanimous vote the Bureau approved the establishment of an Interdivisional Subcommittee on Critical Evaluation of Data.

ACTION:

Include a meeting time in the General Assembly schedule for the subcommittee to meet in Paris.

12. ITEMS FROM MEETING OF DIVISION PRESIDENTS

Professor Russell chaired the Division Presidents meeting that was held in advance of the Bureau. He confirmed that all attended.

While reviewing the current membership and standing of all members, it was noticed that among the current group, only Rita Cornelis might be present in 2020. The suggestion was therefore made that to ensure continuity and when meeting during the GA, this group consultation should involve DVPs and Division Secretaries.

The following points outlined in the detailed agenda were all discussed:

12.1 WEBSITE CONTENT MANAGEMENT

12.2 VIRTUAL MEETING CAPABILITY

12.3 CORE VALUES AND INCORPORATION INTO MEETINGS

12.4 ELECTION PROCESS, ELIGIBILITY AND ROSTERS

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12.4.1 Expertise and requirements are becoming more important

12.4.2 NR Considerations from NAOs and timing, policies

Professor Russell reported that the group talked about the website and that some Divisions still have to identify someone to become their own web manager. The virtual meeting capability via ‘Gotomeeting’ was recognized and all were encouraged to acquire use and access as IUPAC has a subscription with several ‘initiator’ seats and for calls allowing up to 50 attendees. This capability of calling a Division ‘online meeting’ may help ensure more effective communication and better productivity.

Referring to the “core values” of the Union, the DPs suggested that the strategic plan should be made more visible on the iupac.org website.

Referring to the Election process, the DPs noted that IUPAC wants the nomination process to be more transparent and for NAOs to be more involved; that NAOs don’t understand why their nominations often don’t get elected; that position descriptions are a priority: will alleviate this problem and will help all sides to understand the sort of person being sought; and NAOs need to be better informed of constraints, e.g. geographic.

ACTION

All Division Presidents and Standing Committee Chairs are to send Lynn Soby the criteria for membership on their specific IUPAC units (skill sets, experience, expertise, etc.) in preparation for the next election.

Retaining expertise was a topic the DPs reviewed. They noted that the current eligibility rules can result in people with invaluable expertise developed over a long time – e.g. nomenclature, Green Book – being forced out. It was mentioned that the introduction of “emeritus membership” could be made more widely, recognizing explicitly expertise and longevity. It was asked if with the President approval, “special extensions” can be allowed beyond prescribed eligibility.

Referring to the GA schedule, the following notes were made:

- ICTNS requested a dedicated session (approx. 2 hours) with all DPs and SCCs
- DVPs and SC Secretaries shall attend the DPs meeting (see earlier)
- Cross-division meetings to be scheduled for 9.00 am Sunday (rather than 10.30 am and avoid interruption of the regular Division meetings)
- The “speed networking” event involving all 8 divisions and 6 standing committees shall be set again
- For the days the Congress is in session, start the GA meetings at 10 am rather than 9 am so that GA delegates can attend the plenary lectures at 9 am
- Consider extending the GA by one day so that delegates can participate more in the Congress

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12.5 OTHER MATTERS ARISING

The funding of crossdivisional projects was discussed. It was stated that while being developed, these proposals shall have a clear description of what will be expected of each Divisions. Recent examples with IYPT, OPCW, WCLM, IYCN, ICGCSD initiatives have shown various practices but ultimately, a commitment from a Division shall not be a request after the idea has been approved; in other words the DPs and STCCs should be more involved in the strategic decisions from the start. Alternatively, a “strategic projects fund” could be started and would give greater clarity on who is paying what.

13. 2017 GA/CONGRESS, SAO PAULO, BRAZIL

13.1 LESSONS LEARNED

Lynn Soby reported that overall the GA 2017 received positive feedback. One new event that shall be repeated in 2019 is WCLM-YO-RYO-IYCN-IUPAC Poster session and reception; this was very well received and 50 % of the cost for the reception was covered by the ACS sponsor. Repeating this in Paris is being considered as part of the YO/IYCN activities and will again involve Divisions. That activity can be ‘stand alone’ and does not need to be associated with the WCLM as it was in Sao Paulo.

Lynn Soby concurred that clarification of the IUPAC Claim form process for the GA attendees will be needed. Reasonable early booking of flights should be encouraged. As Paris is likely to be more expensive, this awareness and communication should be done early. An attendance sheet for the Division and Standing Committee meetings and Project task group meeting will be implemented to assist the Secretariat track claims and solicit outstanding claims prior to end of the year.

Issues related to GA/Congress registration and to visa will be reviewed with the local organizers in France.

Better coordination and planning with the Congress Organizers will be needed to ensure that the Solvay awardees do have a spot to present their poster (or have a lecture), even though the 2019 awardees will likely be known only after the abstract submission deadline (exact dates to be confirmed).

13.2 FEEDBACK ON ELECTION PROCESS AND GA SCHEDULE

Lynn Soby indicated that positive feedback from the NAOs on the election process was provided during the GA. The major commentary was regarding the transparency and inclusiveness of this biennium’s election process.

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Lynn Soby stated that this coming year, a significant variance for the election is that Affiliates can be nominated as Associate Member (AM), and that also Company Associates will be invited to make nominations.

Hemda Garelick asked how are the Affiliates vetted? It was confirmed that there is no vetting system and the very same requirements will apply to all candidates.

In reference to the General Assembly schedule, feedback was that Division and Committee meetings be started after the first Plenary talk (~10:00am). The ICTNS meeting may need to be shifted to an evening time to allow full attendance. We continue to have issues with late requests for early meeting rooms, changes and additions to the schedule and accommodating the interdivisional meeting schedule. The organizers were able to accommodate the requests for meeting rooms for Friday morning meetings and most were set up mid-day Friday.

13.3 YOUNG OBSERVERS PROGRAM/ENGAGEMENT

There were no additional comments/questions regarding the young observers involvement.

14. 2019 GENERAL ASSEMBLY & CONGRESS, PARIS

14.1 UPDATE ON ARRANGEMENTS

Jean-Pierre Vairon provided an update to the Bureau on the status of the IUPAC2019 Congress, Scientific program, IUPAC100 Celebrations and the plans for young observers.

The General Assembly schedule will largely follow the São Paulo, Brazil schedule. (See below the *provisional agenda* as presented during the session, JPV-13/11/2017, subject to changes.) The Opening Ceremony will include a time slot for the IUPAC President's Address, the presentation of the IUPAC-Solvay Award (with a Solvay representative) and the Distinguished Women's Awards. The overall duration of the Opening is estimated to run from 17:00 to 19:00 followed by a plenary lecture from 19:00-20:00. A welcome reception is planned from 20:00 to perhaps 22:00. The closing ceremony is also expected to be similar to Brazil 2017.

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	Sun 7	Mon 8	Tue 9	Wed 10	Thu 11	Fri 12	
		8h30 Welcome					8h30
		8h45 PL2	Symp	PL4	Symp	PL7	9h15
		9h30 PL3	1 KN, 2 IL	PL5	1 KN, 2 IL	PL8	10h
		10h15					10h20
		10h35		PL6		Rep. Chem.Edu - Ch. & S. - Gender	11h05
REGISTRATION		11h35 IUPAC 100	6 CL /session	Sp L	6 CL /session	IUPAC Awards & Closing	12h30
		12h05 Celebration on site (all participants)		Sp L			
		12h30		IUPAC			
		14h	Symp 1 KN, 2 IL	Symp 1 KN, 2 IL	Symp 1 KN, 2 IL	Symp 1 KN, 2 IL	Plenaries PL1-9 : 45 mn (no quest.)
							Spec. Lect. Sp L: 30 min (no quest.)
			6 CL /session	6 CL /session	6 CL /session	6 CL /session	Key-notes KN: 35 min + 5
	17h30	17h30 Welcome & Opening					Inv. Lect. IL: 25 min + 5
	18h30	18h30 Musical interlude					Contrib. Lect. CL: 15 min + 5
	19h	19h					
	20h	20h PL1	Free Evening	100 Ceremony/Recept. Sorbonne or City Hall (invited only)	100 - YS YS Celebration Maison de la Chimie	100 Centenary Gala Dinner (all participants)	
22h	22h Welcome Reception						

JPV-13/11/2017

PROVISIONAL AGENDA

Jean-Pierre Vairon confirmed that there are 8 slots for plenary lectures, across 8 themes and 29 symposia with 2 to 6 sessions each. That equates to 75-80 half day sessions over 3 full days and a maximum of 15 parallel sessions. The overall target is to allow 720 oral presentations (80 keynotes, 160 invited, and 480 'regular'), out of 3000 paying registrants (& to reach a budget of about Euro 2.5M)

Adjacent to the congress center is the Hyatt Regency and that is where the Council meeting and reception will take place Wednesday afternoon and Thursday. (The Hyatt is also where a block of rooms will be reserved for Bureau member accommodation).

Jean-Pierre Vairon presented the outline of the Celebratory Ceremony that is planned for Tuesday evening at La Sorbonne. Following an historical perspective of IUPAC in the late 19th – early 20th century, a review of the roles and achievements of IUPAC and also the International Science Council (ISC, formerly ICSU) will be presented. Before the concluding remarks, a representative of IUPAC will be invited to give a future vision for the Union.

14.2 WCLM AND IDENTIFICATION OF TOPIC/LEADER FOR NEXT WCLM

Chris Ober reported on the status of the Paris WCLM 2019 Scoping Committee. The report prepared by the members of the Committee, Hemda

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Garellick, Javier Martinez, Fabienne Meyers, Chris Ober, was included in the detailed agenda and reproduced in full:

Planning for the Paris meeting is well underway. Celebrating the IUPAC Centenary, the meeting will also be looking forward. It is the goal of this document to provide a guide to the organization of the WCLM; however, we do not want to overly constrain the final vision of the organizers.

The Organizing Committee of IUPAC2019 has devoted a significant part of the program to the younger chemists through activities organized by the International Young Chemists Network (IYCN) which will involve Young Observers (YO) supported by the NAOs. This vision for the Paris2019 GA creates an opportunity to change the focus of WCLM in the 1/2 day session available on Wednesday morning of the GA.

We recommend the 2019 WCLM develop a program for the NAOs aimed at a two-way exchange with them on future sustainable directions and a vision for IUPAC.

Such a program will engage the NAOs in thinking about the future of IUPAC and their involvement with the organization. Using a model in part derived from the Torino GA (IUPAC Round Table Discussions: <https://www.iupac.org/publications/ci/2007/2903/ud.html>) we propose the next WCLM should include:

1) Plenary talks (3 or 4) thinking about the future of chemistry and the role that IUPAC can play in it. Speakers can be from IUPAC, ICSU, major chemical industry, a representative of a small country NAO, a developing country.

2) Round table discussions led by 2 members of IUPAC leadership (division presidents, bureau members, one of them serving as a rapporteur) 3 or 4 main topics, possibly mirroring the plenary talks. NAOs will be invited to take part in these meetings. These round tables will have planned questions publicized in advance in CI and possibly the IUPAC100 website inviting participant involvement early in the process.

3) Feedback and panel discussion. Each round table group will provide feedback to the larger group on their conclusions. At the end of this feedback process, the panel composed of the plenary speakers or specifically invited participants will comment on these recommendations and summarize the findings.

4) As a follow up to the GA, a report will be produced, which will summarize the main ideas of the WCLM. This document will be shared with the Bureau and the Divisions, the NAOs and the council and will serve as the basis for an article in CI.

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As both the next GA and WCLM will take place during IUPAC's 100th anniversary, this will be an appropriate opportunity to invite NAOs and other stakeholders to engage in a conversation with the IUPAC leadership to think together about our future.

We also recommend that this effort (planning the WCLM, the WCLM itself, and the reporting) will be one of the activities of IUPAC100. Therefore, IUPAC100 is not only about activities for 2019 but also an effort to rethink our Union and take some lessons into the future.

Chris Ober restated that there is no need to repeat the same format that was experienced in Sao Paulo. Yet the speed networking will be repeated separately. The time allocated in the GA for the main session of the WCLM is ½ day, on Wednesday am and directly prior the 1st session of the Council.

The Secretary General invited Bureau members to volunteer and share ideas.

ACTION

Bureau Members are asked to consider volunteering to lead and/or help with the 2019 World Congress Leadership Meeting.

15. IUPAC 100 - CENTENARY PLANNING STEERING GROUP

15.1 PREPARATIONS AND ACTIVITIES FOR IUPAC 100

Mary Garson updated the Bureau on arrangements for the centenary of IUPAC in 2019. A report was included in the Agenda Book for reference.

Progress on website preparation, individual project development, and support materials (publicity and marketing) was presented. Fundraising initiatives are to be undertaken jointly with IYPT Management Committee.

Two Global Celebrations in 2019



Celebrates 100 years of Creating a Common Language for Chemistry

Interactive website platform to encourage participation in global activities and organize local events

Complementary to IYPT

www.iupac.org/100

Use the hashtag #iupac100

Co-chairs: Prof. Mary Garson & Dr. Laura McConnell



IUPAC in partnership with UNESCO and 5 other Organizations*

Celebrating 150th Anniversary of the Periodic Table

www.iypt2019.org

Co-chairs: Prof. Natalia Tarasova & Prof. Jan Reedijk

* IUPAP, EuCheMS, ICSU, IAU, IUHPS

IUPAC₁₀₀ Global Activities

www.iupac.org/100



Activity	Target Audience	Description	Timing
Periodic Table Challenge	High School & General Public	On-line competition for Periodic Table Trivia	Throughout 2019
Global Networking Breakfast	Women scientists and students	On-line global handshake event linking women around the world	February 12, 2019
Periodic Table of Younger Chemists	Undergraduate and early career scientists	118 outstanding young scientists recognized by awarding "elements"	Monthly announcements from July 2018 to July 2019
IUPAC "Essential Tools" Stories	Chemistry community and General Public	Monthly stories of essential tools developed by IUPAC	April 2018 to December 2019
Postgraduate Summer School on Green Chemistry in Africa (Tanzania)	Early career chemists in Africa	Increase knowledge in the field of Green Chemistry in Africa, contributing to sustainable development	Summer 2019

While referring to the activities that are being planned for Paris, Mary Garson indicated that the formal ceremony was set for Monday morning and integral part of the Congress. It will include several presentations, including a historical outline of IUPAC genesis,

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chemistry heritage, relations with industry (by J.M. Solvay), the current IUPAC, and IUPAC role in the next 100years.

The scripts of ‘current IUPAC’ and of ‘role in the next 100 years’ are in preparation. The latter could be presented by a young chemist.

Mary Garson recalled the immediate timeline (Apr-June 2018):

- ✓ Launch the IUPAC100 webpage (April 2018);
- ✓ Deliver an effective strategy for fundraising in support of IUPAC100 projects;
- ✓ Update existing brochures and other publicity/sponsorship materials;
- ✓ Finalise financial arrangements for Paris 2019;
- ✓ Consolidate some of the current IUPAC100 project proposals into a single project application (Running title: “Support for and documentation of IUPAC100”);
- ✓ Find sponsor(s) for global breakfast video preparation and other IUPAC100 support materials;
- ✓ Find sponsor(s) for Green Chemistry Summer School;
- ✓ Update ppt file/brochures for use at conference presentations between now and 2019;
- ✓ Develop existing linkages between IUPAC100 and IYPT;
- ✓ Prepare text for additional “IUPAC global stories”;
- ✓ Launch Periodic Table of Chemists;
- ✓ Provide nominations for Periodic Table of Chemists

Focusing on the sponsorship question, Colin Humphris reviewed the brochure (later posted as https://iupac.org/100/wp-content/uploads/sites/2/2018/06/IUPAC100-and-IYPT-Marketing-Brochure_17Apr2018.pdf). The Secretary General asked Bureau for endorsement of the funds raising strategy approach presented.

DECISION:

By unanimous vote the Bureau endorsed the financial approach being taken for obtaining sponsorships for IUPAC100 together with the IUPAC100 Sponsorship Brochure as presented by Colin Humphris.

Natalia Tarasova reminded the audience that July 28, 2019 will be a Sunday and ask how shall the actual birthday be celebrated? It was noted that ICHO, the International Chemistry Olympiad, will be meeting in Paris on that day. Perhaps something can be done there to help the young participants appreciate IUPAC and its role?

Mary Garson reviewed with Bureau to the following series of call for action:

15.2 CALL TO ACTION FOR DIVISIONS AND COMMITTEES

15.2.1 ACTION: We ask Division Presidents and Standing Committee Chairs to share this report with their members, and further to ask them

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to participate directly in the IUPAC100 celebrations, either through one of the project activities below, or through a Division/Standing Committee event or activity.

15.2.2 ACTION: Members of the Bureau are asked to follow up on planned stories or to recruit stories for the Essential Tools project from their divisions/committees.

15.2.3 ACTION: Members of the Bureau are encouraged to nominate outstanding young chemists for the Periodic Table of Young Chemists project, and to recruit nominations from their NAOs.

15.2.4 ACTION: Members of the Bureau are encouraged to provide questions for the Global Periodic Table Challenge.

15.2.5 ACTION: Members of the Bureau, especially if representing IUPAC, are asked to advertise IUPAC100 at symposia and conferences during 2018-2019.

15.2.6 ACTION: Members of the Bureau are requested to advise on suitable funding opportunities in their region or chemistry sub-discipline, and to provide introductions if required.

ACTION:

The Secretariat will reach out to the National Adhering Organizations regarding IUPAC100 activities once the IUPAC100 website is live.

16. INTERNATIONAL YEAR OF THE PERIODIC TABLE

Natalia Tarasova reported on the general concept of the IYPT management and on the planning of the IYPT activities. She referred to the Agenda Book which includes her recent editorial published in *CI* April 2018; the project proposal that was just recently approved, project 2018-005-2-020 (with support of USD 37000 allocated for the project over its lifetime of two years, including USD 24000 shared between all Divisions and Standing Committees (Div I, III, IV, V, VI, VII, VIII and COCI: each USD 2000 and Div II and CCE: each USD 4000) and USD 13000 from the Project Committee); the 20 Dec 2017 press release announcing UN proclamation of IYPT; and the prospectus developed to support the UN application.

The initiative of the International Year of the Periodic Table of Chemical Elements has been submitted and supported by the following co-applicants:

1. International Union of Pure and Applied Chemistry (IUPAC),
2. International Union of Pure and Applied Physics (IUPAP),
3. International Astronomical Union (IAU),
4. International Union of History and Philosophy of Science and Technology (IUHPST),

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5. European Association of Chemical and Molecular Sciences (EuChemS).
Supported by the International Council of Scientific Unions (ICSU)

The formation of a Management Committee (MC) core group has been completed. Proposed IUPAC members include: Natalia Tarasova and Jan Reedijk (co-chairs), Chris Ober, Chris Brett, Lars Öhrström, and Mei-Hung Chiu. The support secured through the IUPAC project will ensure the minimal set-up for running and coordinating several IYPT activities, applying for only the costs of website/publicity, travel costs, administrative cost (MC assistant 1 day/week for 22 months).

It was also noted that Chris Ober was appointed as the link between IYPT and the fund-raising committee for IUPAC100 activities.

It was stressed that all extra activities will require money from sponsors (be it for IYPT only, or for IUPAC100/IYPT) and from the co-applicant international unions. It has been decided that while a 'secretariat' will be hosted at the Dutch NAO (KNCV), the funds will flow through IUPAC accounts, and only some specific money income will go through a KNCV account. A financial agreement between IUPAC/KNCV is being prepared for that purpose.

After reviewing a list of tentative events related to IYPT, Jan Reedijk asked Bureau for endorsement of the following:

- the 6 members from IUPAC in the MC
- permission for extension of the MC as needed
- dual financial management, as detailed in a contract of IUPAC (as lead organisation) with KNCV
- a website being compatible with IUPAC100, aimed also for archiving possibility

DECISIONS:

By unanimous vote, the Bureau approved the following items with regard to the International Year of the Periodic Table (IYPT) as requested by Jan Reedijk:

- *Formation of a Management Committee (MC) core group from IUPAC: Natalia Tarasova and Jan Reedijk (co-chairs), Chris Ober, Chris Brett, Lars Öhrström, Mei-Hung Chiu.*
- *Expanding the MC team with members from the co-applicant organisation, and (expected) main sponsors for the several activities.*
- *Dual financial management of IYPT with arrangements in a contract between IUPAC (as the lead organization) and the Royal Netherlands Chemical Society (KNCV).*
- *Creation of an IYPT website that will be compatible with the IUPAC100 website and aimed also for archiving possibilities.*

17. BREAK OUT SESSION: IDEAS FOR IUPAC 100 AND/OR IYPT

This item was abandoned due to pressure of time.

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18. FINANCE AND BUDGETS

Colin Humphris reviewed the materials included in the detailed agenda and reproduced here below:

18.1 MINUTES OF THE 2018 MEETING OF THE FINANCE COMMITTEE

The draft of the minutes from the recent 2018 Finance Committee (FC) are in the Agenda book. Bureau members are strongly recommended to review these as they provide a comprehensive review of the financial health and outlook for IUPAC.

Key points of note are:

- The FC noted the formative and uncertain status of work on the International Year of the Periodic Table. As IYPT was not anticipated in the 2018/19 budget it is therefore extra budgetary and a potential draw on IUPAC resources at a time when the Union is operating with a deficit and subject to serious cash flow constraints (see below). The FC therefore had a deep interest in the potential financial exposure; the liabilities that IUPAC might be left with, especially given the very short time available to secure sponsorship. The FC was however unwilling to make any recommendation without more information. It would normally give guidance over what IUPAC can afford to commit to such special activities.
- FC noted the excellent progress made with the preparation of full accounting information that has enabled the 2017 audit to be completed in time to be available to Bureau.
- The Finance Committee approved the recommendation to put forward the firm of McMillan, Pate & Company, LLP as the Audit firm for 2019-2020 to Bureau and 2019 Council.
- The FC was pleased to see that the Profit and Loss statement showed small surpluses in 2016 and 2017. This was however only possible due to the very good performance of the investment portfolio which showed significant but unrealised gains in capital value. **Given the size of the unrealised gains FC felt that is very important that Bureau recognises that IUPAC is therefore running an overall operating deficit.**
- The FC discussed improving the management of cash flow going forward based on the 2016/17 experience. A major issue arose in December 2017 with NS non-payments at the time when the line of credit was fully utilized, so no further credit was available. The Finance Committee agreed to the use of the investment portfolio to provide a “safety net” for short-term cash flow problems and to review options with our financial advisors BB&T so that IUPAC can avoid excessive borrowing and interest payments. FC remains keen to protect

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the size of the portfolio as it is a major source of interest and dividend income for IUPAC.

- FC agreed that we should have the line of credit paid off before 2019 to ensure maximum flexibility in a potentially very expensive year.
- FC agreed that the performance of our financial advisors was satisfactory.
- FC supported the proposals from the National Subscription Taskforce (NSTF) for a new National Subscription formula and recommended these were finalised by the taskforce and brought forward to Bureau.
- FC supported proposals for an Endowment Fund and encouraged the development of an Endowment Policy and Operating Principles as the critically important first step and supported the creation of a management structure including a figure head/lead director together with independent directors.
- FC recognized the challenges in the 2018/19 budget including the ambitions to grow income from the CA and AMP activities and an Endowment fund. Given the uncertainties over these new income streams, the Treasurer was asked to form a small working group tasked with identifying options for FC to consider for a more sustainable (and lower cost) structure for the future.

18.2 2017 AUDIT

The 2017 Audit is included in the Agenda book and gave IUPAC a clean bill of health.

18.3 AUDIT FIRM FOR 2019 COUNCIL APPROVAL.

Bureau was asked to support the FC recommendation to propose the firm of McMillan, Pate & Company, LLP as the Audit firm for 2019-2020 to 2019 Council.

DECISION:

By unanimous vote, the Bureau accepted the Finance Committee recommendation that a new Audit Firm (McMillan, Pate and Company) be appointed as the audit firm for 2019–2020 and to put this proposal before Council for approval.

ACTION:

The Secretariat will appoint a new Audit Firm (McMillan, Pate and Company) to start with the 2019 financials. This will be put before Council for approval.

A discussion around funds raising initiatives and possibilities of setting an endowment pointed to specific initiatives into which IUPAC is involved but that might need to be made more explicit and to appear more relevant; these include big data and green chemistry.

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18.4 FINANCIAL PERFORMANCE FOR 2016-2017 BIENNIUM

The detailed financial reports were included in the Agenda book for reference. Colin Humphris reiterated that the new accounting system has allowed far more effective management of finances for the first time over this complete biennium.

The summary Income Statement for the Union in the biennium 2016/17 is shown below:

IUPAC Income Statement - Summary							
	Dec 2016 Actual	2016 Annual Budget	2016 Actual vs Budget Variance	Dec 2017 Actual	2017 Annual Budget	2017 Actual vs Budget Variance	Actual 2016 vs 2017 Variance
Income							
Program Income	\$ 1,134,277	\$ 1,095,472	\$ 38,805	\$ 1,109,453	\$ 1,226,002	(116,549)	(24,824)
Direct Public Support	29,000	0	29,000	15,541	0	15,541	(13,459)
Investments	205,138	139,992	65,146	445,541	140,000	305,541	240,403
Miscellaneous Income	0	0	0	0	0	0	0
Total Income	1,368,415	1,235,464	132,951	1,570,536	1,366,002	204,534	202,121
Cost of Good Sold	34,045	0	(34,045)	0	0	0	34,045
Gross Profit	\$ 1,334,370	\$ 1,235,464	\$ 98,906	\$ 1,570,536	\$ 1,366,002	204,534	236,165
Expense							
Awards, Grants & Contribution	29,000	0	(29,000)	28,749	0	(28,749)	251
Fixed Costs - Salaries & Benefits	557,443	547,649	(9,794)	545,297	582,463	37,166	12,146
Lease, Insurance & Bank Fees	79,531	53,769	(25,762)	89,768	68,276	(21,492)	(10,237)
General & Administrative Expenses	106,679	40,055	(66,624)	89,264	41,711	(47,553)	17,415
Contracted Services	89,114	19,000	(70,114)	81,963	59,300	(22,663)	7,151
Depreciation Expense	9,850	20,475	10,625	38,684	10,000	(28,684)	(28,833)
Other Expenses	28,548	26,592	(1,956)	27,392	25,850	(1,542)	1,156
Travel & Meetings	385,109	589,776	204,667	637,851	654,399	16,549	(252,742)
Miscellaneous Expense	0	0	0	0	0	0	0
Total Expenses	\$ 1,285,275	\$ 1,297,315	\$ 12,040	\$ 1,538,967	\$ 1,441,999	(96,968)	(253,692)
Net Ordinary Income / (Loss)	\$ 49,095	\$ (61,851)	\$ 110,947	\$ 31,569	\$ (75,997)	107,566	(17,527)
Other Income & Expenses							
Other (Income)	(1,013)	0	1,013	(587)	0	587	(426)
Other Expense	17,598	25,000	7,402	(9,583)	30,000	39,583	27,181
Net Other Income / Expense	\$ 16,585	\$ 25,000	\$ 8,415	\$ (10,170)	\$ 30,000	40,170	26,755
Nominal Income / (Loss) for the period	\$ 32,510	\$ (86,851)	\$ 119,362	\$ 41,738	\$ (105,997)	147,736	9,228

Bureau members should note the following. Overall the performance exceeded budget.

On Income:

- Increased income from the investment portfolio more than made up for the lower program income (largely National Subscriptions) received. Company Associate program was significantly below budget and less than 2016 while the AMP was over budget by \$15k in 2017 and over budget by ~\$13K in 2016.

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- The final estimate of the 2017 income for the year end PAC payment in April 2018 from De Gruyter is included.
- NAO income was lower than budgeted as discussed in 18.6 below.
- The unrealised gain of over \$500k in the value of the investment portfolio over the biennium - earnings that were not available for use. **If you exclude this, the Union was in deficit throughout the biennium.** It is why the Union is so sensitive to cash flow peaks and troughs. Money is inherently tight.

On Fixed Costs:

- Awards Grants and Contributions have matching donations.
- Salaries and Benefits are under budget chiefly due to a planned 3% increase that was not implemented during 2017. Health benefit increased ~11% in 2017 over 2016 amount.
- Lease Insurance and Bank Fees includes interest we are paying on lines of credit we have taken to manage cash flow.
- General & Administrative Expenses appear over budget but only as we are now showing the *Chemistry International* costs separately. We showed net income previously. The 2018/19 Budget in shows this correctly.
- Contracted services includes expenditure on the approved database project, in works in relation to IUPAC100 and consultancy fees in relation to the National Subscription Task Force.
- Depreciation expense is higher as we start to depreciate the new website.
- Travel costs were kept within budget. These are the single largest item of cost arising from project expenses.

The Balance sheet for 2016/17 shows net increases in Cash and Cash Equivalents, Accounts receivable and an increase in the investment portfolio market value. Accounts receivable worsened in 2017, owing to unpaid National Subscriptions (NS) and the write-off of doubtful NS debts. The Accounts payable also worsened owing to the serious cash flow situation September-December 2017.

There is a net increase in Cash and Cash Equivalents of \$305k but Bureau members should note that \$204k of this is held as cash within the investment portfolio awaiting reinvestment (cash sweeps) and is not available for operational use.

Total Fixed assets at \$192k are net of depreciation and include the furniture and fittings, computers and equipment, including the new Website (\$120k after depreciation) and the new databases.

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IUPAC Balance Sheet As of 31 December 2017					
		Dec-15	Dec-16	Dec-17	2017-2016 Variance
ASSETS					
Current Assets					
	Checking/Savings				
	Total Checking/Savings	154,577	180,833	305,094	124,261
Accounts Receivable					
	Total Accounts Receivable	152,916	92,017	278,660	186,643
Other Current Assets					
	Sales Tax Receivable	4,797	1,336	907	(429)
	Inventory	34,045	0	0	0
	Total Prepaid Expenses	5,278	2,382	4,822	2,440
	Total Other Current Assets	44,119	3,718	5,729	2,011
	Total Current Assets	351,613	276,568	589,483	312,915
Fixed Assets					
	Total Fixed Assets	123,906	187,992	192,078	4,086
	Security Deposits	3,565	3,565	3,565	0
	Total Marketable Securities	3,818,558	3,889,081	4,097,527	208,445
	Total Other Assets	3,822,123	3,892,646	4,101,092	208,445
	TOTAL ASSETS	\$ 4,297,642	\$ 4,357,206	\$ 4,882,652	\$ 525,447
LIABILITIES & EQUITY					
Liabilities					
Current Liabilities					
	Accounts Payable				
	Total Accounts Payable	132,689	82,232	174,970	92,739
	Total Credit Cards	22,648	172	1,053	881
Other Current Liabilities					
	Total Payroll Liabilities	34,570	44,701	52,235	7,535
	Total Unearned Membership Income	34,838	21,823	50,702	28,879
	Unearned Publication Inc	0	0	125	125
	Deferred Rent	18,635	21,506	19,351	(2,155)
	Total Short-term Notes Payable	0	100,000	350,000	250,000
	Total Other Current Liabilities	88,043	188,030	472,413	284,383
	Total Current Liabilities	243,380	270,433	648,436	378,003
	Total Liabilities	243,380	270,433	648,436	378,003
Equity					
	Net Asset w/ Donor Restriction	204,357	204,357	204,357	0
	Net Asset w/o Donor Restriction	105,422	100,110	111,809	11,699
	Unrestricted Net Assets	3,876,837	3,749,795	3,770,606	20,811
	Nominal income / (loss) for the period	(132,354)	32,510	147,444	114,934
	Total Equity	4,054,263	4,086,772	4,234,216	147,444
	TOTAL LIABILITIES & EQUITY	\$ 4,297,642	\$ 4,357,206	\$ 4,882,652	\$ 525,447

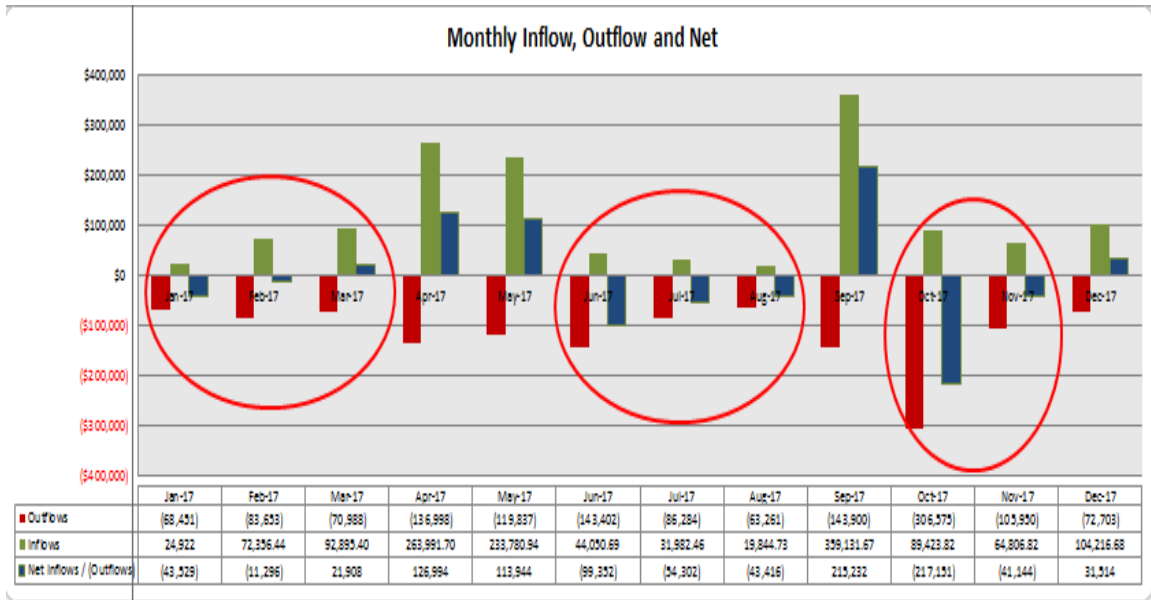
(note: numbers reported are pre-Audit for 2017)

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18.5 CASH FLOW REVIEW 2016-2017

The cash flow issue is encapsulated by the 2017 picture below:



The line of credit was extended in September to \$350k. Earlier credit of \$100k was paid off leaving \$250k to help meet the expected claims for the Sao Paulo General Assembly in October. Cash flow issues were exacerbated in December owing late non-payment of National Subscriptions. A “hold” on all payments was made during December as the Union only held \$100k in available cash versus regular running costs, and outstanding bills and claim forms of \$174k. The line of credit was already fully utilized. Expenses and invoices have been settled in Q1 2018.

18.6 2016/17 NAO STATUS

As Argentina, Kazakhstan and Pakistan were 24 months in arrears at the end of 2017, they were notified of their loss of NAO status and invited to apply for readmission after making all payments in arrears. The total loss for biennium 2016-2017 against budgets for these three countries amounts to \$24,298. Argentina submitted payments for 2015 and 2016 but was unable to pay the 2017 NS. Pakistan submitted payments for 2015, 2016 and 2017 and is in process of reapplying for admission.

Other than the countries above, all 2017 National Subscriptions were paid by 31st December except for Belgium, China/Beijing and Jordan. The below table is an estimate amount due in equivalent USD, as the 2017 NS was invoiced in currency of choice at exchange rate of 1Q 2015.

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NAO Country	2017 Subscription (equivalent USD)
Belgium (Euro)	\$19,223
China/Beijing (CNY)	\$153,689
Jordan (JOD)	\$1,106
Total	\$174,018 (19% of Adjusted Budget)

China completed their payment of the 2017 National Subscription during Q1 2018.

The following countries were included in the original annual budgets for 2016/17 but have currently ceased membership:

NAO Country	2017 Subscription (equivalent USD)
Argentina	\$5,123
<i>Costa Rica</i>	\$1,000 <i>*Readmitted as provisional by EC Nov. 2017</i>
Cuba	\$1,103
Ethiopia	\$1,103
Kazakhstan	\$1,103
Luxembourg	\$939
<i>Pakistan</i>	\$4,600 <i>*Readmitted as provisional by EC Nov. 2017</i>
Tunisia	\$2,360
Total	\$17,331

NAO PAYMENT STATUS FOR 2018:

A current list of NAOs along with the 2018 payment status is in the Agenda book (p. 297). As of 23 March 2018, IUPAC received \$280,264 from 22 NAOs, of the expected (NS Adjusted) \$890,492. This is over the 2017 amount received due to the early payment of the US (@ \$122,668).

18.7 FINANCIAL PORTFOLIO

The Financial Portfolio performed well through 2016/17 rising to \$4.3m. Annual income net of fees was \$85k (2016) and \$108k (2017) underlining the importance of the portfolio as a source of earnings. It is why we should be reluctant to draw down our savings as this would essentially mortgage our future.

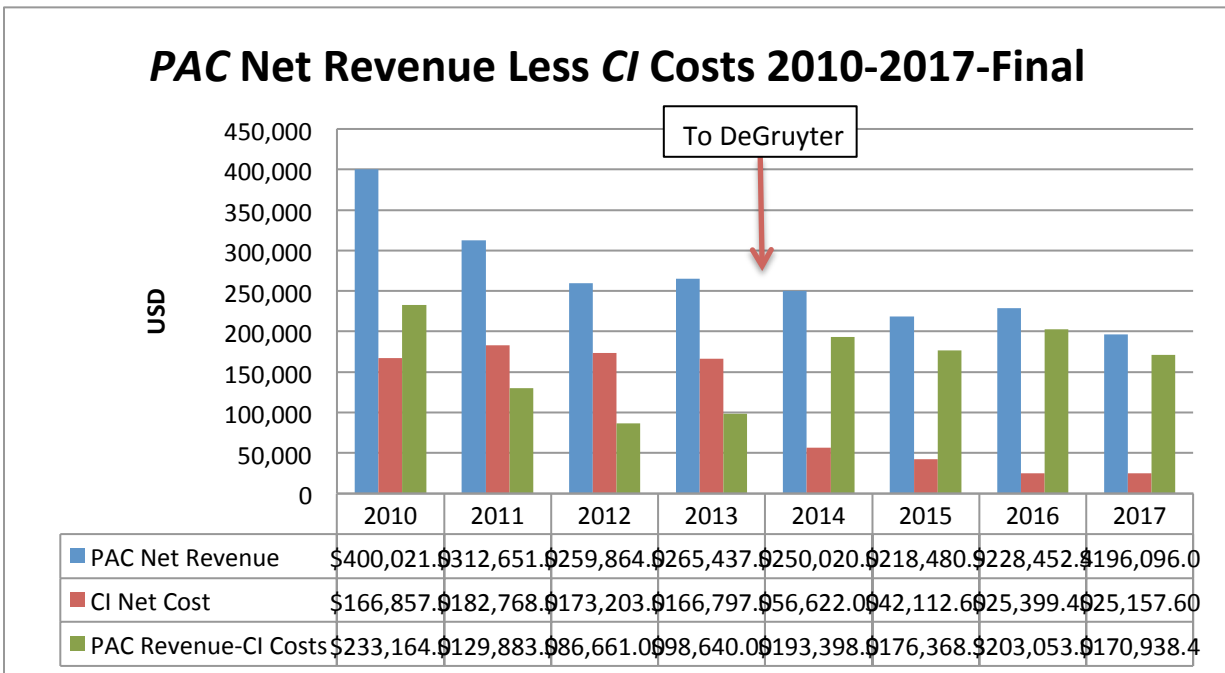
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	2016			2017			
	Investment Type	Current Market Value	Annual Income - Net of Fees	Annual Yield %	Current Market Value	Annual Income - Net of Fees	Annual Yield %
XX8836							
Equities	\$ 128,610.92			\$ 150,413.33			
Fixed Income	\$ 1,001,186.65			\$ 886,298.94			
Cash Balance	\$ 2,623.28			\$ 379.53			
Insured Deposit/Cash Sweep	\$ 46,514.09			\$ 140,604.18			
	\$ 1,178,934.94	\$ 38,594.03	3.27%	\$ 1,177,695.98	\$ 37,606.89	3.19%	
XX0889							
Equities	\$ 1,403,063.11			\$ 1,740,880.97			
Mutual Funds	\$ 1,356,220.41			\$ 1,319,933.33			
Cash	\$ 288.65			\$ 324.26			
Insured Deposit/Cash Sweep	\$ 29,116.63			\$ 62,094.80			
Total	\$ 2,788,688.80	\$ 46,235.29	1.66%	\$ 3,123,233.36	\$ 70,373.73	2.25%	
Combined	\$ 3,967,623.74	\$ 84,829.32	2.14%	\$ 4,300,929.34	\$ 107,980.62	2.51%	
	Fees	\$ 39,207.81			41,911.51		
	Total Return	\$ 124,037.13	3.13%	\$ 4,300,929.34	\$ 149,892.13	3.49%	

18.8 PUBLICATIONS

Historically, the two publications were evaluated as PAC Revenue less CI Cost. PAC net revenue has plateaued in a difficult publications market. CI costs have reduced significantly due to data improvements (member details), reduction in complimentary copies of print CI, deduplication of label files and improvements to accounting for the ACS AMPs.



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18.9 2018/19 BUDGET

The approved budget for the current biennium is included below for information. 2019 is expected to be an expensive year and an overall deficit is forecast. The General Assembly in Paris 2019 will be a key challenge as the costs of accommodations and subsistence are high.

The income includes ambitious targets for the Company Associate (CA) and Affiliate Member Programs (AMP) that were relaunched following Council approval. The good news is that both programs are on plan following the launch.

The Company Associate Pricing Structure implemented for 2018 includes an increase over time for the current (2017) CAs to the target amount of \$2,500 per CA. New CAs are charged \$2,500 starting in 2018. The structure means that NAOs that manage the scheme always gain over their previous earnings per CA (\$400) providing an incentive for involvement.

	2018	2019	2020	2021
2017 Company Associates- "Heritage Members"	\$1,000.00	\$1,500.00	\$2,000.00	\$2,500.00
NAO Coordinator	\$500.00	\$750.00	\$1,000.00	\$1,000.00
IUPAC	\$500.00	\$750.00	\$1,000.00	\$1,500.00
2018 Company Associates- "New Members"	\$2,500.00	\$2,500.00	\$2,500.00	\$2,500.00
NAO Coordinator	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00
IUPAC	\$1,500.00	\$1,500.00	\$1,500.00	\$1,500.00

A new model of AMP subscriptions was developed for the 2018-2019 budgets. Implementation of the new AMP program for 2018 includes a price increase for base membership (from \$35 to \$50) plus *Chemistry International (CI)* Print surcharge of \$25 to cover print, distribution and marketing costs for those who opt for a paper copy. The objective is to reduce the print and distribution cost of *CI* to IUPAC and we intend to extend the print surcharge to all volunteers.

NAOs can continue to operate and earn \$20 per AMP (US is historically \$21 per AMP) from the AMP scheme but IUPAC also has the capacity for direct applications and can now receive payment on line. IUPAC receives \$30 from chemical societies and coordinated programs, versus \$14.

Bureau members whose countries do not participate are encouraged to meet and discuss these programs for supporting chemists in their country and industrial chemists. The letters describing the CA and AMP programs are in the Agenda book.

19. NATIONAL SUBSCRIPTION TASK FORCE

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Colin Humphris continued by reviewing the work of the NS Task Force. National Subscriptions account for approximately \$900k of IUPAC's \$1.3m income. It is therefore absolutely critical for the Union to have a formula for calculating National Subscriptions that is acceptable to Council members, is simple to understand and based on easily accessible data. This is probably the single most important objective for the Union this biennium if we are to ensure a sustainable future.

Council in Sao Paulo approved the proposal invoicing NS in \$ USD and there was good acceptance of the principle of migrating subscriptions at controlled rates to the new calculated values (+/- 3% p.a.). Council asked the Task Force to review and validate the data and the statistical analysis. Council approved the retention of 2017 subscriptions for 2018. The working assumption of the Task Force is that IUPAC should not expect income greater than \$900k from the current group of member countries.

The Executive Committee approved revisions to the membership of the taskforce that is now:

Dr. Lynn M. Soby (Chair)	- Executive Director IUPAC
Mr. Colin Humphris (UK)	- Treasurer IUPAC
Prof. John Corish (Ireland)	- Chair Finance Committee
Prof. Chris Brett (Portugal)	- IUPAC Vice President
Prof. Ito Chao (China Taipei)	- NAO
Prof. Neil Burford (Canada)	- NAO

Work has been undertaken to validate data and provide a statistical review with volunteer help from Prof. Tom Fearn (University College, London). We have focused on a model based on "H-index" factor (a measure of a country's publications quality), Chemical industry size and GDP that provides a sensible measure of the chemistry endeavor in each country and the ability to pay (size of the economy). It gives a reasonable fit to 2018 subscriptions and the relative size of individual country's subscription to others. The new model is based on a regression equation to 2018 that gave the best fit. Even so, the calculated subscriptions may differ substantially for individual countries.

The taskforce is therefore proposing that the calculated values based on this model be established as target subscriptions. These targets will be fixed until 2024 and countries migrated from the 2018 subscription towards the target at +/- 3 % p.a. to provide evolutionary and predictable change. The calculations can be rerun for the 2024/25 biennium to establish revised targets and the process repeated.

The proposed calculated subscriptions were provided to Bureau members prior to the meeting and **Bureau was asked to approve consultation with the NAOs on this revised approach and based on any feedback finalization of the proposal for approval electronically by Council members by end July 2018.**

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DECISION

By unanimous vote, the Bureau approved consultation with the NAOs on the revised NAO Subscription model as outlined on pages 19-20 of the Bureau detailed Agenda (reproduced above) and, based on any feedback, finalization of the proposal for approval electronically by Council members by the end of July 2018.

Lynn Soby restated that a clear outline of the timeline to approach NAOs will be shared and that the Bureau will see the numbers before it goes to NAOs.

ACTION

The Secretariat will consult with the NAOs on the revised NAO Subscription model as outlined on pages 19-20 of the Bureau Agenda Book and, based on any feedback, finalize the proposal for approval electronically by Council members by the end of July 2018.

Lars Ohrstrom asked for confirmation that the NS consideration will not affect how the voting rights were assigned.

Francesco Nicotra asked how the Chemical Societies can be helped to implement the Affiliates schema.

20. APPLICATIONS FOR NATIONAL ADHERING ORGANIZATION STATUS

Lynn Soby referred to the Agenda Book and indicated two applications for readmission as NAO were received for consideration at the previous Executive Committee. The EC approved provisional NAO status for Pakistan and Costa Rica.

An application for Associate National Adhering Organization was submitted and approved for Kenya Chemical Society.

The current number of NAOs is 55 including the 2 provisional; 2 ANAOs however Ghana has never paid their subscription (formally approved in Busan 2015).

21. “ON” ORGANIZATIONS AND ASSOCIATED ORGANIZATION STATUS

The Secretary General referred to the Agenda Book (p. 306) which provides the following lists of “ON” organizations (where we fund attendance by IUPAC representatives, either centrally, or through Divisions/Committees and Associated Organizations).

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2018-2019 UPAC ON Representatives
Supported from Central Funds

ON Organization	Representative Name	Representative Email	2018-2019 Membership
BIPM CCU	Roberto Marquardt	roberto.marquardt@unistra.fr	TM Division I
CHF	Lynn Soby	lsoby@iupac.org	Executive Director
CIPM/CCQM	Zoltan Mester	zoltan.Mester@nrc-cnrc.gc.ca	DP Division V
ICSU (ISC)	Qi-Feng Zhou	qfzhou@iupac.org	President
InChI Trust	Richard Hartshorn	rhartshorn@iupa.org	Secretary General
JCGM	Juergen Stohner	sthj@zhaw.ch	Chair-ICTNS
SAICM	Anna Makarova	annmakarova@mail.ru	Core AM ICGCSD; TM COCI
EuCheMS	Jan Reedijk	reedijk@chem.leidenuniv.nl	Past President Division II
CITAC	Ilya Kuselman	ilya.kuselman@gmail.com	AM Div V
<i>COSPAR</i>	Javier Garcia Martinez	j.garcia@ua.es	DVP Division II
CODATA	Jeremy Frey	j.g.frey@soton.ac.uk	TM CPCDS
FLAQ (Latin America)	Javier Garcia Martinez	j.garcia@ua.es	DVP Division II
FACS (Federation of Asian Chem Soc)	Qi-Feng Zhou	qfzhou@iupac.org	President
FASC (Federation of African Societies of Chemistry)	Richard Hartshorn	rhartshorn@iupa.org	Secretary General
UNESCO	Natalia Tarasova	ntarasova@iupac.org	Past President
Int Council of Chemical Associations (ICCA)	Colin Humphris	chumphris@iupac.org	Treasurer
ABEO OPCW	Mark Cesa	mcesa@iupac.org	Fellow
<i>CODATA Executive Nomination Tentative</i>	<i>Richard Hartshorn</i>		
<i>ICSU (ISC):Governing Board</i>	<i>TBD by ICSU</i>		
<i>ICSU:World Data System Scientific Committee</i>	<i>Jeremy Frey</i>		

Nominating Org	Division Supporter	ON Organization	Representative Name	Representative Email	2018-2019 Memberst
Div V	Zoltan Mester	African Analytical Network	Nelson Torto	n.torto@ru.ac.za	Not member
Div V	Zoltan Mester	Inter Agency Meeting	Zoltan Mester	Zoltan.Mester@nrc-cnrc.gc.ca	DP Division V
Div V	Zoltan Mester	Eurachem	Filomena Camões	mfcamoes@fc.ul.pt	AM Division V
Div VII	T.Perun	ICSU ISO TC 212	Anders Kallner	Anders.Kallner@ki.se	IUPAC Rep. to ISO
Div. VIII	Alan Hutton	ISO TC 229	Edwin Constable?	edwin.constable@unibas.ch	TM Division VIII
Div V	Zoltan Mester	ISO/REMCO	Ilya Kuselman	ilya.kuselman@gmail.com	AM Div V
Div V	Zoltan Mester	JCGM-WG1	Steven Ellison	s.ellison@lgc.co.uk	TGM Div V Projects
Div V	Zoltan Mester	JCGM-WG1	Juris Meja	Juris.Meja@nrc-cnrc.gc.ca	Chair CIAAW
Div V	Zoltan Mester	JCGM-WG2	Zoltan Mester	Zoltan.Mester@nrc-cnrc.gc.ca	DP Division V
Div V	Zoltan Mester	JCGM-WG2	Jeremy Frey	j.g.frey@soton.ac.uk	TM CPCDS

The current list of Bureau Committee membership is also included as reference. The following points are identified for discussion:

- Should we be pushing for all such “ON” organizations to apply for Associated Organization status?
- We are better at adding organizations to such lists than taking them off. How should these be reviewed?
- Are formal reports received from all such representatives? Can we improve dissemination?

The SG invited the DPs to review these listings in detail and share updates. He invited suggestions for ideas that will lead to a better management of this program.

A somewhat similar and mirroring program is that there are representatives OF other organizations that are members on some committee. A list of these shall be assembled for further review.

ACTION:

The Secretariat to assemble and circulate the list of 'OF' members

22. WEBSITE STATUS

Lynn Soby reviewed the current status and updates in progress to IUPAC.org as well as future plans. She stressed that there were a lot of 'moving parts' in the development and that additional work is still needed to implement IUPAC100. She indicated that as User Authentication of volunteers and members was being implemented, the Bureau is asked for their input on the value proposition for having a restricted login feature and implications for development of restricted workspace capabilities. She asked that everyone provided feedback directly to her and that she confirmed that she will keep updating the Bureau when noticeable changes/improvements are released.

23. PUBLICATIONS23.1 STATUS REPORT *CHEMISTRY INTERNATIONAL (CI)*

Bonnie Lawlor and Colin Humphris commented on the work of the *CI* Editorial Board. *CI* EB meets regularly to review the content pipeline for *CI* and the initiatives we are taking to increase both the content and the value of *CI*. *CI* is now published quarterly and with the relaunch of the AMP, the focus has been on the digital version of the journal. The plan is that from the April 2018 edition an authentication procedure will be in place to enable members' access to *CI* on the De Gruyter website. With *CI* no longer freely available, De Gruyter will be able to sell *CI* as part of a bundled package of *PAC*, *CI* and the *PAC* Database.

Work on a *CI* Digital First news blog on the IUPAC website has been slowed due to completing workloads in 2018 and into 2019.

One initiative the Board is however keen to launch this year is the Top Ten Emerging Chemistry Technologies. The Bureau was encouraged to bring forward nominations for innovative chemistry that translates into significant technological advances. *CI* EB will establish an evaluation panel and the objective is for this to become an annual feature of the magazine.

Javier Garcia Martinez stressed that this initiative is not to provide any sort of 'endorsement' over the technology but more simply to highlight current developments.

The link to submit nominations is below:

<https://www.cognitofirms.com/IUPAC1/TopTenEmergingChemistryTechnologies>

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23.2 STATUS REPORT *PURE AND APPLIED CHEMISTRY*

Bonnie Lawlor referred to the report provided by Editor-in-Chief, Hugh Burrows, on the current status of *Pure and Applied Chemistry*, publications and results.

PAC is currently on schedule and a recurring monthly meeting has contributed to improve production. The call regularly includes Josh Gannon (from DeGruyter), Hugh Burrows, Jurgen Stohner, Fabienne Meyers, and Bonnie Lawlor.

23.3 STATUS REPORT *CHEMISTRY TEACHER INTERNATIONAL*

Jan Apotheker reported on the current status of the on-line Journal, *Chemistry Teacher International* and update the Bureau on the launch, plans for the Journal as part of De Gruyter's platform.

Jan Apotheker explained that the journal with the sub head '*Best practices in Chemistry Education*' fills a gap in the current journals landscape, by providing an international platform for chemistry teachers, and by bridging the gap between research and practice. The focus group will include the top 5 to 10% of chemistry teachers, researchers in chemistry education, and University teachers in general chemistry.

The plan is to release online 2 issues per year with 12 articles, include special issues, *e.g.* from the polymer edu subcommittee, or conferences. The journal will be 'Open access', with a charge of \$ 150 per submission.

The first issue is planned for July 2018 – see

<https://www.degruyter.com/view/j/cti>

Concerns were expressed over the question of how IUPAC standards might be applied and how these will be checked.

Division Presidents are encouraged to share content that might be announced in the journal, such as the brief guides, or other features that might later appear on the IUPAC100 blog.

Colin Humphris confirmed that all the projects that IUPAC has developed with DeGruyter are actively managed and the officers have a seasonal call with the DeGruyter senior management.

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23.4 VIRTUAL PUBLISHING AND DATABASES

Lynn Soby provided an update to Bureau regarding the status of discussions with AIP (American Institute of Physics) as it relates to the IUPAC-NIST Solubility Series as well as other critically evaluated data, publishing interests and additional proposals for collaboration. A proposed joint task group to evaluate and determine the value proposition and use cases for this critically evaluated dataset. The aim of the task group is to create a product definition and outline a business case for product development of a new database as partners. The work of this task group will also allow IUPAC to learn the key issues in valuation of critically evaluated data (of particular relevance to the proposed Interdivisional Subcommittee on Critically evaluated data. If at the end of this review (31 December 2018) there is no viable product determined, AIP has agreed to grant IUPAC rights to enable IUPAC to create derivative works for the entire SDS series.

The status of working with Springer-Nature will be put on hold pending the results of the joint task group project.

As a result of a short discussion Lynn Soby asked to lead the development of a policy statement that will clarify the practice of signing-off any agreement involving IUPAC authors and 3rd party publisher.

It was noted that some volunteers might have conflicting IP claims and this will need to be take into account.

ACTION:

The Secretariat will develop policies regarding the creation of contractual and license agreements between authors and publishers for all IUPAC publications. The Secretariat must sign-off on all agreements. The issue of Intellectual Property needs to be handle at the beginning of all project proposals and the project proposal form needs to be updated to reflect this fact.

24. DAY 1 ADJOURN

(keep numbering to match agenda)

25. STATUS REPORT ON IUPAC SECRETARIAT

Lynn Soby reviewed briefly the status of the Secretariat and indicated that the current staff of 5 will decrease to 4 as Jay Lucido has notified that he will be leaving. She acknowledged his service and the Bureau echoed such recognition, thanking him sincerely for his service and the work he has done for the Union.

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ACTION:

The Secretariat will ensure that the minutes of the 2018 IUPAC Bureau meeting reflect the fact that IUPAC sincerely thanks Jay Lucido for all of the work that he has done for IUPAC and that the Bureau offers their congratulations and best wishes on his new position.

26. REPORT OF THE MEMBERSHIP RELATIONS COMMITTEE

Natalia Tarasova reported on the plans of the MRC for the 2018-2019.

She started her presentation by reviewing IUPAC stakeholders, including:

- National Adhering Organizations (NAO) – members of the Governing body of IUPAC; Chemistry councils, Chemical Societies, National Academies and institutions representing national chemical interests
- Individual Scientists and Engineers
 - Volunteers – the people who serve on Division Committees, Standing Committees, and project task groups
 - Affiliates – people who join to learn more about IUPAC and to connect with chemists and chemical organizations around the world, and
- Company Associates - Industrial companies, research and development institutions

She continued by stressing the need to develop for each set of stakeholders a value proposition, *i.e.* “a clear statement describing the benefits of IUPAC membership, how IUPAC serves stakeholder needs and what makes IUPAC unique to them.”

A set of such value propositions were developed following the review of the strategic plan (see https://iupac.org/cms/wp-content/uploads/2017/12/2014-042-2-020_cesa_value-propositions-summary.pdf and shared as outcome of <https://iupac.org/project/2014-042-2-020>)

Value Proposition Statement for NAOs

IUPAC membership extends the reach and global recognition of NAOs; provides support for member recruitment and retention, and increases the NAO’s value to its members through networking, information and career enhancement.

Value Proposition Statement for Volunteers

IUPAC volunteers contribute to the betterment of humankind, the chemistry profession and the Union. Volunteering for IUPAC is an excellent mechanism for global networking, developing and applying skills, gaining international experience, and earning recognition for professional accomplishments.

Value Proposition Statement for Affiliates

IUPAC provides a platform for individual chemists and related professionals to network globally, gain recognition for their professional contributions, and stay

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informed in the fields of chemistry through IUPAC news, education and career development offerings.

Value Proposition Statement for Company Associates

IUPAC provides an essential platform for the chemical industry and for chemists and related professionals from industry through access to networking, global recognition, and guidance of and participation in IUPAC projects that span the fields of chemistry. Company Associates contribute actively to IUPAC's role as the provider of the common language for chemistry, standards that facilitate commerce, and conferences and projects that advance the chemistry enterprise.

Natalia Tarasova asked that Bureau reflect on these value propositions, and she outlined a few steps going forward. She suggested that an assessment of the National and Regional Chemical Societies shall result in a broader member base. IUPAC shall more clearly present its services and new products. To do so and to reach a global target, it must make better use of digital technology. Set specific targets for fund raising should be part of the goals for next biennium.

Colin Humphris concurred that in the Bureau meeting set at the end of the General Assembly, this group could be more specific in outlining specific goals, and that there might also be opportunities to loop some questions back with WCLM.

ACTION

Lynn Soby will circulate to members of the Bureau the set of Natalia Tarasova's slides for her presentation on the Member Relations Committee during the 2018 Bureau meeting.

27. REPORT OF THE IUPAC COMMITTEE FOR ISC

Natalia Tarasova reported on the transition from ICSU to the new International Science Council (ISC) < <https://council.science/> >

The major undertaking of ISC is the preparation for the merger and the first General Assembly that will take place in Paris in July. The new governing body will be elected there. The Bureau committee for ISC (including M.H. Chiu, R. Cornelis, B. Lawlor, and J. Stohner, in addition to Natalia Tarasova) did receive a request to submit nominees. The nomination of Javier Garcia Martinez for COSPAR had been submitted.

It was recalled that ICSU used to have a call for project proposals but it is not clear that that program will remain after the merger. No recent call in 2017 have been received.

Colin Humphris noted that in view of the future uncertainty, it will be important to keep monitoring what benefits IUPAC draws from its membership of ISC.

28. PROJECTS REVIEW

28.1 COMMITMENTS REPORT, PROJECTS EXPENDITURES, AND PROPOSAL UNDER REVIEW

Lynn Soby referred to the reports included in the Agenda Book (dated 28 February 2018). She pointed to the fact the summary of financial expenditures has been upgraded to reflect difference in commitments (new projects), actual expenses (operations and existing project spending) and completed project summaries by body. She asked if there was any questions and encouraged members to provide feedback.

A report of project proposals currently under review is also included in the agenda book.

ACTION:

Bureau Members will provide Lynn Soby with feedback on if/how the project and financial reports can be improved.

29. REPORT FROM PROJECT COMMITTEE

Doug Templeton referred to his report on the Project Committee activities included in the Agenda book. The report summarized the mandate of the Committee and the results of funding of Projects and Scientific Conferences 2016/2017.

In addition, Doug Templeton provided highlights of the meeting the Committee held during this Bureau meeting. First, he underlined the fact that the PC does not see all the project proposals and only those that required funding supplementary to the commitment made by a Division/Committee. The PC relies on the technical merit assessment made by the Division prior to the proposal reaching the Committee. The project support and support for conferences (FSC) are two separate programs. The requests for support for conferences from scientifically emerging regions (SER) are more frequent than the requests for conferences based on 'new directions in chemistry' (NDC). In general, for these conferences, the PC prioritizes support for involvement of young scientists over that of more senior people. The average support is around USD 4k per event.

In the last biennium, the PC reviewed 12 project proposals and provided funding to all, with a total awarded of \$48,810 which supplemented total commitments from Divisions that amounted to \$57,300.

The last biennium budget was therefore not fully committed, and that was in contrast to previous biennia. This situation will be monitored to establish whether this is a "one off", or part of a trend.

The committee also considered the following questions during its latest meeting:

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- When a FSC is funded, it is required that the organizers also waive the registration fee for supported scientists. The guidelines might need to be revisited to clearly state that, but initially that can be (re)stated in the approval letter.
- The committee considered whether it was an issue if a FSC was proposed for an event where a language other than English was exclusively in use.
- The issue of using project to support the salary of a consultant was debated and the question arose when assessing the IYPT proposal for which approx 2/3 of the budget is to pay for the cost of a part-time assistant manager. As Chair, Doug Templeton shared his reluctance about this use and outlined this in the PC recommendation; his concern is that it might set a precedent in an organization that generally operates on a volunteer basis. The potential for conflict of interest when the Task Group Chair hires the consultant should be addressed.
- It was reported that some members might find the look and feel of the project form archaic. The PC concurred that an online form might be designed to look more 'contemporary'. An alternative layout will be considered but, in general, members of the PC who were present had no strong views on the cosmetics of the form.

30. REPORT FROM EVALUATION COMMITTEE

Professor Chris Brett referred to the Evaluation Committee report included in the Agenda book. The report covers two main topics as announced in the detailed agenda:

30.1 CHEMRAWN

30.2 PROJECT PORTFOLIO

Chris Brett restated that the purpose of the EvC was to provide constructive evaluation and to assess if the system enables the Divisions/Committees to contribute within of the by the project system. In addition, one recent and current task is to assess the functioning of ChemRAWN. The findings are detailed in the report.

The recommendations of the EvC to ChemRAWN are:

- make the vision and aims more widely understood and disseminated.
- specify the role of the Future Actions Committees and label each specifically with one conference
- provide clear and explicit guidelines to conference organizers
- share more information on webpage, including posting conference reports within 3 months of completion plus updates posted by the relevant FAC
- contribute regular articles in *Chem Int* on the success and follow-up of each events, including conference report shortly after the conference is held (similarly at the conclusion of each IUPAC project; additional coverage in *PAC* and *CTI* should be considered.

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The EvC will continue to work with ChemRAWN to better understand how it could develop and improve more contact with other Divisions and address relevant global issues, and while being aware of the funding challenges faced by each event being completely self-raised.

The Committee will also pursue its task of reviewing the role and contributions of each the Divisions. The committee has organized that task for the coming months and will send a survey questionnaire, focused on assessing:

- Conformity with IUPAC missions and strategy (why IUPAC?)
- Division rules and procedures in place
- Project progress reports

The goals will be to develop and suggest best practices by and across divisions. Chris Brett announced that the EvC will reach out to each Division via the following members:

Div. I	Jan Apotheker	Div. V	Carolyn Ribes
Div. II	Chris Brett	Div. VI	Kew-Ho Lee
Div. III	Ehud Keinan	Div. VII	Jan Apotheker
Div. IV	Carolyn Ribes	Div. VIII	Chris Brett

31. BREAK OUT SESSION: THE SECOND CENTURY FOR IUPAC

31.1 WHAT WILL THE FUTURE HOLD? HOW WILL IUPAC HAVE TO ADAPT?

31.2 REVIEWING/MEETING GOALS AND OBJECTIVES IN/FOR THE STRATEGIC PLAN

31.2.1 Short term

31.2.2 Medium term

31.2.3 Long term

31.3 IMPLICATIONS OF THE STRATEGIC PLAN FOR FUTURE BUDGETS

This session was postponed and conducted over lunch. Each group was asked to shared feedback by email to the Secretary General who will collate and circulate the ideas shared.

32. IUPAC/SOLVAY INTERNATIONAL AWARD FOR YOUNG CHEMISTS 2018

Prof. Tarasova reported on the results of the 2018 IUPAC/Solvay Award and referred to the details outline in the detailed agenda:

- 45 applications have been received representing 15 countries for the 2018 Award.

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- Countries of citizenship (15): Spain (10), China (7), India (6), Italy (5), USA (4), Germany (2), Russia (2), Portugal (2), Argentina (1), Brasilia (1), Canada (1), Mauritius (1), Singapore (1), Sweden (1), Turkey (1)
- Countries granting PhDs (17): Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, India, Ireland, Italy, Portugal, Russia, Spain, Sweden, Turkey and USA
- 12 females, 33 males.

Natalia Tarasova indicated that the jury had a good process to assess the applications while the criteria of excellence/relevance and quality were most important. A release is in preparation and will appear in the *CI* July (*that was posted online 27 April 2018, <https://iupac.org/winners-2018-iupac-solvay-international-award-young-chemists/>*) For 2019, the number of awards is unconfirmed; it might be five or more. Solvay support is to be acknowledged.

33. COMMITTEE ON CHEMISTRY FUNDING (CCF)

Prof. Tarasova reported on the input of the CCF to the IYPT fundraising process. She indicated that this group function was discussed during the former Executive Committee and is the result of the restructuring of the former Committee on Chemistry Research Funding, and it has been agreed that its purpose shall be focusing on the more general issue of the Union funding, and because 2019 is such a special year, this also includes IYPT.

The Treasurer is an *ex Officio* on CCF, and other members include Chris Ober, Ron Weir, and Mary Garson. (*membership to be checked/confirmed*)

34. EXTERNAL FUNDING SOURCES AND RELATED PROJECTS

Colin Humphris initiated a discussion seeking input from Bureau. His comments were outlined in the detailed agenda. He indicated that IUPAC must increase earnings and/or reduce costs if it is to have a sustainable future beyond its centenary. The first and overriding priority is to secure existing income which is why the work of the NSTF is so critical.

IUPAC has already sought to stabilize publishing income through its partnership with De Gruyter. Key to this has been the marketing effort De Gruyter is bringing to halt falling *PAC* sales. *CI* costs have been substantially reduced through the partnership and the move away from complimentary paper copies.

Similarly, we have sought to maximize earning form our investment portfolio through professional financial management.

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Council approved changes to the CA and AMP schemes designed on the one hand to encourage more active engagement and participation in IUPAC and on the other to provide meaningful income streams. Both revised programs are currently being launched.

IUPAC100 and IYPT together provide an opening for discussions with potential sponsors and the proposal supported by the FC is that we built on this through the creation of an endowment fund targeting at least \$5m to give sufficient interest and dividend income to support IUPAC strategic activities in a meaningful way. We have the investment and accounting systems in place to manage such a fund. The recommendation is that we develop Investment Policy and Operating Principles and proposals for a management structure that would involve independent directors to provide confidence to potential investors.

35. INCHI TRUST

Richard Hartshorn referred to the report in the Agenda Book and reported that the InChI Trust and its membership are essentially unchanged, and consists largely of publishers. Attempts to widen the membership have not proven very successful, but perhaps this will improve as the wider applicability of the InChI standard becomes clear. However, as was found in other industry areas, there is a risk that other potential members will simply use the (open source) standard and not see the value of a deeper involvement and/or membership of the Trust. Despite this the financial position of the InChI Trust is sound.

The InChI Trust is involved in a number of IUPAC activities, including IUPAC 100, with the publication: "IUPAC and InChI Provide a Common Language for Chemistry" (Ray Boucher, Stephen Heller, Richard Kidd, Alan McNaught, and Igor Pletnev) being the first article in the Essential Tools series. (<https://iupac.org/100/stories/what-on-earth-is-inchi/>)

The Trust has also resolved to increase/revive interaction with other IUPAC groups: notably Division VIII, Committee on Publications and Cheminformatics Data Standards (CPCDS), Division IV Polymer Nomenclature Subcommittee, and the Joint IUPAC-IUBMB Commission on Biochemical Nomenclature (JCBN).

36. CONFERENCE ENDORSEMENT PROGRAM

Lynn Soby referred to the report in the agenda book presenting a summary list of 38 IUPAC endorsed conferences between July 2017 and March 2018 is included in the Agenda book. She indicated that the Secretariat has recently updated the database of our conferences in order to provide detailed reports and better tracking of the conferences. Summary documents could be provided to assist Hugh Burrows for the Conference Editors and other stakeholders. The program management has also been recently defined for specific roles and responsibilities. Fabienne Meyers is responsible for the conferences and approval process with assistance from Linda

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Tapp (database and file management) and Enid Weatherwax (approval letters). This workflow should allow for more growth in the program, communication and management for content for CI and PAC, and a streamlined system to reduce “churn” and better record keeping and file management. She suggested that further process improvement may be possible by going digital with the submission form and approval process.

The comment was made that DPs shall not assume that a ‘regular’ events have applied for endorsement and are encouraged to review the events calendar online; if the event is not listed, it is simply because it has not (yet) applied for endorsement. DPs are also encouraged to consider who shall be the IUPAC representative as they have an opportunity to talk about IUPAC and disseminate information about IUPAC activities.

37. DATES AND PLACE OF NEXT BUREAU MEETING

Richard Hartshorn reminded Bureau that 6/7 April 2019 is GA-14 weeks and the Council Agenda is due to NAOs at this time. Noting that the 2019 GA is one week earlier than Sao Paulo, most deadlines will be moved up a week. Following recent pattern, the April Bureau meeting in a GA year would be a virtual meeting focused on preparations for the Council meeting. The meeting will be run from the Secretariat, with the Officers present in person.

ACTION:

Bureau Members will mark their calendars to tentatively reflect the fact that the next Bureau meeting will be a teleconference on April 6/7, 2019 (depending on time zone)

38. ANY OTHER BUSINESS

Qi-Feng Zhou asked if there was any other business. There was none. He thanked the participants for their useful input and comments and in particular thanked the Secretary General for conducting most of the meeting. The meeting was adjourned at 12:00 pm.

APPENDIX FOR COMPLETED ACTION ITEM DOCUMENTATION

(as provided in the detailed agenda) The list are specific action items that have been completed and need to be minuted as complete.

156th EC Action Items: Completed

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156EC01 [LMS] To inform the Sociedad Cubana de Química that their IUPAC NAO will cease at the end of 2017 and invite them to reapply. *Completed.*

156EC02 [LMS/RH] Invite Professor Medhat A. Al-Ghobashy to clarify his intention viz his TM election. The full roster of Division V will need to be approved later. *Completed.*

156EC03 [LMS/NT] Follow-up with nomination and finalize a roster for the Finance Committee for input by the EC prior President approval. *Completed.*

156EC04 [LMS] To provide a listing of the ON members for review and approval by the Executive Committee. *Completed.*

156EC06 [CG] Chris Brett to draft a project proposal to be sent around to the EC before the end of the month. (November 2017) *Completed.*

156EC07 [NT] Natalia Tarasova to approach Jan Reedijk to seek his input about IYPT. *Completed.*

156EC11 [NT/LMS] The NAOs shall be informed about the merger and received copy of the ICSU letter. *Completed.*

156EC16 [LMS] To follow-up with the NAO to ensure that all is manageable for 2018 Bureau Meeting in Slovakia. *Completed.*

156EC17 [LMS] To confirm exact place and date as soon as possible. *Completed.*