

49th IUPAC COUNCIL MEETING
São Paulo, Brazil 12-13 July 2017
DETAILED AGENDA

Reference should be made to the Agenda Book for background information relating to the agenda items

Day One 12th July 2017

1. [13.00] Introductory Remarks and Finalization of Agenda
[Prof. Tarasova]
[For Information]

2. [13.10] Approval of Minutes of 48th Council Meeting and Matters Arising
[Prof. Tarasova]
[For Information and Decision; voting by show of hands]

Motion: *Minutes of 48th Council Meeting in Busan, Korea are approved.*

3. [13.20] Ratification of Decisions Taken by Bureau and Executive Committee since 48th General Assembly
[Prof. Tarasova]
[For Information and Decision; voting by show of hands]

All decisions taken by the Bureau and Executive Committee through calendar year 2016, since those approved by the Council at Busan, Korea (Minute 3, 48th Meeting), are contained in the following Minutes, which were distributed to National Adhering Organizations on the dates shown:

98 th Bureau (Montreal, Canada, April 2016)	8 April 2017
99 th Bureau (Virtual Bureau, 8 April 2017, Draft)	31 May 2017
97 th Bureau (Busan, Korea, August 11 & 14, 2015)	25 January 2016
154 th Executive Committee (Research Triangle Park, North Carolina 31 October-1 November 2016)	28 March 2017
155 th Executive Committee (Beijing, China 8-9 November 2016)	21 May 2017

Motion: *Council ratifies all decisions taken by the Bureau and Executive Committee through calendar year 2016, since those approved by the Council at Busan, Korea (Minute 3, 48th Meeting).*

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4. [13.25] Announcement of Nominations for Union Officers and Bureau Members

[Prof. Hartshorn]
[For Information]

Nominations Received: The nominees CV's, Photos and other information may be found in the Agenda Book.

Vice President

Prof. Christopher M.A. Brett (Portugal)
Dr. Javier García-Martínez (Spain)

Elected Members of Bureau

Prof. Russell J. Boyd (Canada)
Prof. Mary Garson (Australia)
Dr. Javier García-Martínez (Spain)
Prof. Chris Ober (USA)
Prof. Ken Sakai (Japan)

*Prof. Christopher M. A. Brett (Portugal) term is 2016-2019 and will continue as Elected Member of Bureau if not elected as Vice President.

5. [13.35] Announcement of Time of Elections

[Prof. Hartshorn]
[For Information]

The elections for Vice President and Elected Members of the Bureau will be held at **09:00** hours on 13 July 2017.

Motion: *Council approves the appointments of Prof. Mei-Hung Chiu (China/Taipei), Prof. Jan Reedijk (Netherlands) and Dr. Fabienne Meyers (IUPAC Secretariat) as Election Tellers.*

6. [13.40] ICSU-ISSC Merger, Executive Committee ICSU

[Prof. Nicole Moreau]
[For information and Discussion]

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7. [13.50] Statutory Report on the State of the Union

[Prof. Tarasova]
[For Information]

The President will report on the challenges and accomplishments of the Union in the current biennium. Implementing the renovated Strategic Plan, IUPAC is looking for new approaches to position chemistry as a powerful tool to achieve Sustainable Development Goals. IUPAC has strengthened its' cooperation with other unions, ICSU, UNESCO, OPCW and is seen as a leader in the chemistry enterprise in the rapidly evolving field of science. As IUPAC now approaches its centenary in 2019, a set of surveys has been carried out to outline the directions of development in its second century.

7.1 IUPAC Strategic Plan-Membership Relations

[Dr. Cesa]
[For Information]

IUPAC has surveyed its stakeholder groups, including volunteers, affiliates, NAOs and CAs, as an essential step in recruiting new members and retaining current members. The results of the surveys are being analyzed to help with the writing of value proposition statements for these stakeholders and with generating new ideas for offerings to current and new member sets.

7.2 Proposed Merger of ICSU and ISSC

[Dr. Cesa]
[For Information and Decision, voting by show of hands]

In October, 2016 an Extraordinary General Assembly of national and union members of ICSU, the International Council for Science, was held, at which the members voted in favor of a "merger in principle" between ICSU and ISSC, the International Social Science Council. IUPAC is a union member of ICSU. Such a merger would create a combined new Council that would merge the two bodies, hopefully to the benefit of its members and of the world at large. The merger-in-principle vote was not to approve the merger, but instead to entrust ICSU and ISSC to form two task groups, a Transition Task Force and a Strategy Working Group, to formulate proposals for the framework and strategic plan, respectively, for the proposed new Council. At the coming ICSU General Assembly in October 2017 in Taiwan, ICSU members will be asked to vote on whether to authorize the two organizations to merge.

Documentation on the status of work on the proposed merger can be found at: <https://icsu.org/about-us/icsu-issc-merger>. In April 2017 a draft strategic plan document, which is in the agenda book along with other background documents, was sent to ICSU and ISSC members for comment. IUPAC's response requested more information to explain how the combined Council would be more effective than the two separate

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organizations in bringing the natural sciences and social sciences together for mutual benefit and in enabling a stronger, more effective global voice in guiding public policy.

IUPAC leadership has not yet decided whether to vote in favor of or against the merger and is awaiting further information as mentioned above. Final documents from ICSU and ISSC containing the recommendations of the Transition Task Force and the Strategy Working Group are expected in July 2017, not allowing enough time for a review by delegates at Council. Therefore, IUPAC asks Council to authorize and support the IUPAC Executive Committee to review these documents and, based on their content, to formulate IUPAC's decision to vote either for or against the merger.

Motion: *Council authorizes the IUPAC Executive Committee to review documents on the proposed ICSU-ISSC merger and to vote accordingly on the merger at the 2017 ICSU General Assembly.*

8. [14.20] Vice President's Critical Assessment

[Prof. Zhou]
[For Information]

Prof. Zhou submitted the Vice President's critical assessment to Bureau 8 April 2017.

The Vice President will report on improvements and concerns regarding the Union's infrastructures and scientific priorities, giving special attention to membership relations, green chemistry and UN Sustainable Development Goals, big data, collaboration with other organizations and the 100th anniversary of IUPAC.

9. [14.40] Report of Secretary General

[Prof. Hartshorn]
[For Information and Discussion]

The Secretary General will report on the operation of the Secretariat and on initiatives taken to advance the work of the Union:

The Executive Director and the Secretary General have worked together to improve the operation of the Secretariat, notably through streamlining work-flow for various activities of the Union in order to limit the number of hand-overs involved in any particular series of tasks. It is important to recognize that there are only five people employed in the Secretariat, which is a remarkably small number given the breadth of the Union and the number of scientists to whom they supply administrative support.

There have also been significant refinements and efficiencies made in election processes, notably in standardizing the electorates used for our various bodies (following consultation with Divisions and Standing Committees), and through employment of on-line systems for both nomination and voting stages of the elections. The Secretariat is also continuously

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improving the new IUPAC website, developing a new members and contacts database platform to link to the website and reengineering multiple processes related to use of the database. Greater use is being made of electronic communication and web-based systems for better collaboration. It was notable that there was increased engagement of National Adhering Organizations in the nomination process for elections and for the IUPAC-Solvay International Award submissions, perhaps because of improvements in these systems and the new website.

Significant improvements have been made in financial systems and management, something on which the Treasurer will, no doubt, provide additional detail.

We have revised the Statutes and By Laws for the Union (see item 25.3) in order to reflect decisions taken by the Bureau, Executive Committee, and Council since they were last revised (2010).

We have also begun a process of formalizing strategic relationships with bodies such as OPCW and IYCN, through development of Memorandums of Understanding. There is also a significant and developing relationship with the Chemistry Research Data Interest Group of the Research Data Alliance, through which we are seeking to identify and address key problems for the field of Chemistry in the world of big data. This is an area where we expect to have to commit more resources in coming biennia. The MoUs are in the Agenda Book.

We also draw your attention to the proposal to introduce a new standing committee, the Interdivisional Committee on Green Chemistry for Sustainable Development (see item 25.2), and the proposed addition to the terms of reference for the Evaluation Committee (see item 25.1), which will provide a review mechanism by which we can judge the effectiveness (or otherwise) of Divisions and Committees in delivering on the mission and strategic initiatives of the Union.

These last two paragraphs reflect an intention to raise the responsiveness of IUPAC toward developments in Chemistry and the world in which we operate.

10. [15.00] Applications for National Adhering Organization (NAO) and Associate National Adhering Organization (ANAO) Status-Ratification

[Prof. Hartshorn]

[For Decision; voting by show of hands]

No organizations have applied for NAO status since the 48th Council Meeting.

IUPAC received notification (05 June 2017) of a change in organization from the Czech NAO, the Czech Committee for Chemistry. They propose the Czech Chemical Society to become the successor of the current NAO-Czech Committee for Chemistry. A new body will be formed within the Czech Chemical Society: Working Group for Terminology and Nomenclature.

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Motion: Council approves the Czech Chemical Society as successor to the Czech Committee for Chemistry as National Adhering Organization.

11. [15.10] Adoption of Recommendations on Nomenclature and Symbols

[Prof. Hartshorn]

[For Information and Decision; voting by show of hands]

Motion: Council formally adopts the Recommendations approved by the Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS) and published, or scheduled to be published, in *Pure and Applied Chemistry* from August 2017 through June 2019.

12. [15.15] Validation and Naming of New Elements 113, 115, 117, 118

[Prof. Reedijk]

[For Information]

The IUPAC/IUPAP Joint Working Party charged with the task of examining claims for the discoveries of these four elements to establish whether they fulfil the necessary criteria and assigning priorities to the successful laboratories have produced two IUPAC Technical Reports that have been sent to *Pure and Applied Chemistry* for expert review and subsequent publication. The first of these reports is entitled 'Discovery of the elements with atomic numbers $Z = 113, 115$ and 117 . The second is entitled 'Discovery of the element with atomic number $Z = 118$ completing the 7th row of the Periodic Table'.

The publication of both documents took place in January 2016 (*PAC* **88**, 139 (2016) and *PAC* **88**, 155 (2016) were subsequently accepted by the Executive Committees of IUPAC and IUPAP. At that time the president of the IUPAC Inorganic Chemistry Division (Division II), has started the second phase of the process to name new elements by inviting the laboratories to which priorities have been assigned to propose names and symbols for those elements deemed to have been discovered. These proposed names and symbols were received by March 31, 2017, and were considered and accepted by the Division II Committee before they were distributed for expert reviewers and for public review as provisional recommendations. The public review period took place between June 8 and November 8, 2016. All comments and suggestions were carefully checked and treated by Division II, and summarized for the Bureau. The Bureau and Division II finally accepted on November 28, 2016 the 4 names and symbols, and the connected paper appeared in *PAC*, **88**, 1225-1229 (2016).

At the Busan Council meeting in 2015, the Bureau had delegated the mandate for the final decision to the Bureau. So the names and symbols for the four new elements and the updated IUPAC Periodic Table became final on November 28, 2016.

The following four new elements names and symbols are proposed:

- (a) nihonium and symbol Nh, for the element with $Z = 113$,
- (b) moscovium with the symbol Mc, for the element with $Z = 115$,
- (c) tennessine with the symbol Ts, for the element with $Z = 117$, and

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(d) oganesson with the symbol Og, for the element with Z = 118.

After careful deliberation on these names and symbols, considering the 2016 naming rules and a public review period, the Inorganic Chemistry Division recommended these proposals for acceptance by the Bureau and for ratification by the IUPAC Council.

A descriptive summary of the complete name-giving process and the comments from the general public is available in *Chemistry International* April 2017, pages 30-32.

Motion: Council ratifies the decision of Bureau for the names and symbols of the above four elements.

[15:25-15:50 Refreshment Break]

13. [15:50] Reports of Division Presidents (Written reports will be received and 10 minutes allowed for questions and discussion on each)

[Prof. Tarasova]

[For Information and Discussion]

- 13.1 [15.50] Division I – Physical and Biophysical Chemistry [Prof. Angela Wilson]
13.2 [16.00] Division II – Inorganic Chemistry Division [Prof. Jan Reedijk]
13.3 [16.10] Division III – Organic and Biomolecular Chemistry Division [Prof. Margaret Brimble]
13.4 [16.20] Division IV – Polymer Division [Prof. Greg Russell]
13.5 [16.30] Division V – Analytical Chemistry Division [Prof. Jan Labuda]
13.6 [16.40] Division VI – Chemistry and the Environment Division [Dr. Petr Fedotov]
13.7 [16.50] Division VII – Chemistry and Human Health Division [Dr. Thomas J. Perun]
13.8 [17.00] Division VIII – Chemical Nomenclature and Structure Representation Division [Dr. Karl-Heinz Hellwich]
13.9 [17:10] [10.10] Committee on Publications and Cheminformatics Data Standards (CPCDS) [Ms. Bonnie Lawlor]*

[17.20] Closing Comments followed by the Council Reception

End of Day One



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Day Two 13th July 2017

14 [09.00] Election of Union Officers and Bureau Members and Approval of Elected Officers of Divisions

[Prof. Tarasova]

[For Decision of Union Officers and Elected members of Bureau; voting by written and secret ballot (Bylaw B 2.22)]

An introduction to the election process for the 2017 Council Meeting is included in the Agenda Book. The election slate (nominees for Vice President and for Elected Members of the Bureau) and information about each of the candidates may also be found in the Agenda Book. [see item 4.] The results of the 2018-2019 elections for Division Officers and Titular members are in the Agenda Book. The results of the Standing Committee Elections are included as well, and will be used to inform the President's decisions on membership of those committees.

Motion 1: *Council ratifies the election of the new Vice President and Elected Members of the Bureau at the 49th General Assembly in São Paulo, Brazil.*

In addition, Officers of the eight IUPAC Divisions are also listed for approval of the Council. Elections for Divisional offices have been completed prior to the Council Meeting, as is the normal procedure, and only require final ratification by the Council.

Motion 2: *Council ratifies the election of Division Officers and Titular Members that have been completed previously during individual divisional elections coordinated through the IUPAC Secretariat.*

[The following two items will run concurrently with the elections during counting of votes]

15 [09.00-10.00] Bids for and Voting on Site and Dates of 51st General Assembly and 48th Congress (2021)

[Prof. Hartshorn]

[For Decision; vote by delegations; simple majority (Bylaw B 2.23)]

The vote for 2021 will be taken first and will follow the pattern of the elections used for Officers of the Union (By-Law 2.2.2.2). If no bid receives a majority on the first ballot, the bid receiving the fewest number of votes will be eliminated and another ballot will be conducted. This will continue until a bid receives a majority of the votes cast. The decision for 2023 will be made in a similar way.

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Four proposals to host the General Assembly and World Chemistry Congress in 2021 were received. (Canada, China, Israel and Thailand) Two proposals to host only the General Assembly and World Chemistry Congress in 2023 were received. (Netherlands and New Zealand). The letters of Intent to host 2021 and 2023 were received by the deadline of 15 February. Full bid proposals were received by 30 March 2017 for Bureau review at the 8 April 2017 meeting. Bureau agreed that all bid proposals were eligible to present at Council and asked that additional information regarding each country's VISA program and any missing information or clarification be included the final proposal. The guidelines for the presentations and voting process is included in the Agenda Book.* The six bid proposals are in the Agenda Book. (Each proposal is allowed 5 minutes presentation and 5 minutes for questions from Council)

15.1 China-Chinese Chemical Society (CCS)

15.2 Canada-CNC-IUPAC & Canadian Chemical Society.

The interactive proposal from Canada may also be accessed here:
<https://indd.adobe.com/view/8a50c613-a120-40f4-8398-856c6c35fab1>.

15.3 Israel-The Israel Chemical Society

15.4 Thailand-Chemical Society of Thailand

The bid receiving the majority of votes cast will be deemed selected to host the 2021 WCC/GA.

16 [09.00-10:00] Bids for and Voting on Site and Dates of 52nd General Assembly and 49th Congress (2021)

[Prof. Hartshorn]

[For Presentation and Vote]

Six proposals to host the General Assembly and World Chemistry Congress in 2023 have been received. The Royal Netherlands Chemical Society and Royal Society of New Zealand/New Zealand Institute of Chemistry (NZIC) will present their proposals.

16.1 China-Chinese Chemical Society (CCS)

16.2 Canada-CNC-IUPAC & Canadian Chemical Society

16.3 Netherlands-Royal Netherland Chemical Society (KNCV)

16.4 New Zealand-Royal Society of New Zealand/New Zealand Institute of Chemistry (NZIC)

16.5 Israel-The Israel Chemical Society

16.6 Thailand-Chemical Society of Thailand

The bid receiving the majority of votes cast will be deemed selected to host the 2023 WCC/GA

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- 17 [10:00] Presentation of IUPAC service awards
[Prof. Tarasova]
[For celebration]
- 18 [10.10] Reports of Standing Committee Chairs (Written reports will be received and 10 minutes allowed for questions and discussion on each)
[Prof. Hartshorn]
[For Information and Discussion]
- ~~18.1 [10.10] Committee on Publications and Cheminformatics Data Standards (CPCDS) [Ms. Bonnie Lawlor]~~
- 18.2 [10.20] CHEMRAWN Committee [Dr. Carlos Tollinche]
- 18.3 [10.30] Committee on Chemistry and Industry (COCI) [Prof. Bernard West]
- 18.4 [10.40] Committee on Chemistry Education (CCE) [Prof. Mustafa Sözbilir]
- 18.5 [10.50] Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS) [Prof. Ron Weir]
- 18.6 [11:00] Project Committee (PC) [Prof. Doug Templeton]
- 18.7 [11.10] Evaluation Committee (EvC) [Prof. Christopher Brett]
- 19 [11.20] Centenary Planning
[Prof. Tarasova]
[For Information and discussion]
- 19.1 Status of IYPT [Prof. Tarasova]

In December 2016, the IUPAC accepted the invitation from the Russian Academy of Sciences to be the main sponsoring organization for the application to UNESCO that 2019 be designated as the International Year of the Periodic Table of Chemical Elements (IYPT), celebrating the 150th Anniversary of the great discovery of Dmitry Mendeleev.

The Periodic Table is strongly linked to IUPAC's mission. The chemical elements are crucial for humankind and our planet, and for industry. At the same time, it is important that whilst they are used to give added value and products necessary for our civilization, that this is done in a sustainable way. In particular, awareness is needed of the sustainability of the use of scarcer elements, which are often either diluted in the earth's

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crust or only available in very specific locations. An International Year of the Periodic Table of Chemical Elements would give an opportunity to draw the attention of children through to senior adults to these aspects that are important for the future of our planet, whilst also celebrating the genesis and development of the periodic table over the last 150 years. Other activities will also be organized making full use of the extensive network of IUPAC members.

International Union of Pure and Applied Physics (IUPAP), European Association of Chemical and Molecular Sciences (EUChemS), the International Astronomical Union, the International Union of History and Philosophy of Science and Technology (IUHPST) have supported the initiative of the IYPT.

In February 2017, the IUPAC President participated in the UNESCO IBSP Board meeting to promote the IYPT. The world-known laboratories (Dubna, Livermore, Oakridge, Riken), as well as national chemical societies have sent the letters to the UNESCO DG Irina Bokova expressing the support of the IYPT.

The update as for July 2017 will be given. The decision is to be made later this year.

19.2 Status of Anniversary Options

[Prof. Zhou]

[For information]

The task group of IUPAC 100 has been working closely and diligently with the Executive Director and other Union Officers to get support from our NAOs (China, United Kingdom, Italy, Switzerland and Belgium answered) and to reach related national commissions for UNESCO. In late April, with help of Chinese Chemical Society, the Chinese National Commission for UNESCO submitted a proposal to include the 100th anniversary of IUPAC in the UNESCO list of anniversaries 2018-2019. Since then, related personnel have been trying hard to get more countries or national commissions for UNESCO to sign as supportive, as well as to get support from other sectors of UNESCO. We need to accomplish the above work before 15 June, after which the proposal will be submitted to the UNESCO Executive Board at its 202nd Session.

19.3 Report from the IUPAC100 task group Chair [Prof. Mary Garson]

[Prof. Mary Garson]

[For information]

The task group considering the IUPAC Centenary in 2019 will have met on 11th Tuesday, July 2017. A status of the activities will be discussed.

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20 [11:50] Plans for 50th General Assembly and 47th Congress in 2019 (Paris, France)

[Prof. Hartshorn]

[For Information and Discussion]

The French NAO (Comité National Français de la Chimie) will present a brief report on preparations for the General Assembly and World Chemistry Congress to be held in Paris, France in 2019. [Prof. Jean-Pierre Vairon]

LUNCH: 12:00-13:00

21 [13:00] Financial Reports

21.1 Biennial Report of Treasurer

[Mr. Humphris]

[For Information and Discussion]

The current financial outlook emphasizes the need for change and innovation. The 2016 performance was better than plan and we are starting to see the benefits of tighter financial control and planning given the changes to our accounting systems. The biennium 2016/17 is still however expected to show an overall deficit and although the 2018/19 budget deficit is smaller than for the current biennium, the position is clearly not sustainable in the long run. Eventually we must either increase income or cut costs or both. Critical to this is that members, of whatever category, see value to them in what IUPAC stands for, the work it does and the priorities set.

IUPAC has long relied on subscriptions from our NAOs for the majority of its income, but most countries are seeing substantial pressure on their science budgets. NAOs were also unhappy with the methods of calculating National Subscriptions. The old model was abandoned in 2015, an interim budget approved and the work of the National Subscription task force initiated. The task force has been working on a new approach based on an index of chemistry knowledge (Chemistry publishing and patenting) and capital impact (Size of GDP and the Chemical Industry). The objective is to provide eventually a more realistic, transparent and predictable model that allows an evolutionary change. Such a change will always be controversial given there will inevitably be winners and losers. Countries will have their own concerns about the choice of a particular set of factors and/or the individual factors themselves. Based on feedback from the most recent round of consultation webinars, the task force needs to review its recommendation as a result of updating information for some countries. The timing means this will not be available for Council.

In developing the budget however I believed it was unrealistic to plan longer term on a contribution from NAOs much greater than the 2017 budget of \$917k. The proposed budget is therefore based on the \$ USD NAOs subscriptions approved for 2017. The budget

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therefore includes proposed national subscriptions for 2018 and 2019. These can be superseded once agreement is reached on a new formula and implementation method.

2018/19 sees the introduction of new activities such as the interdivisional committee on Green Chemistry for Sustainable Development, work on Big Data, IUPAC 100, commitments to ICSU projects. It is therefore essential that we develop new income streams from other membership categories and from our work products. The proposed budget for 2018/19 accommodates the additional work within the existing level of funding to Divisions, Committees and for General Assemblies. The Budget also introduces new thinking for the Affiliate Membership Scheme (AMP) and Company Associates (CA) in an effort to engage these constituencies more effectively and to generate meaningful income streams. Inevitably this involves reconsideration of the benefits to these other membership groups and their rights within the IUPAC Divisions and Committees. The proposed budget and changes to AMP and CA schemes were endorsed and recommended to Council by both the Finance Committee and Bureau.

The scope of our work and the cost of the Secretariat to support this are tightly interdependent. We have invested in new systems so that we can administer the Union more efficiently and effectively. We cannot however continue to add activities without retiring others. As the Finance Committee puts it, we need to ensure a focus on only those activities where IUPAC has unique competence. This will become a theme for the next biennium – we need to decide more rigorously what we should do, what we shouldn't do and ensure a Secretariat sized and capable to support this.

21.2 Report of Finance Committee

[Mr. Humphris]

[For Information and Discussion]

The Finance Committee met in Zurich on 8th February 2017. A number of recommendations were noted and decisions made:

- All advice and recommendations from the Finance Committee should be available to Bureau at its following April meeting
- It was noted that Pat Confalone and Georg Wießmeier finish their terms in 2017 but are available for reelection and will be nominated to the President.
- The Finance Committee recommended a change in Auditors for the financial year 2019. A recommendation to change will be required by **2017** Council.
- The Investment Policy statement was reviewed and reconfirmed without change.

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- The proposed budget 2018/19 was supported. The need for new income was recognized and the bold step with Company Associates supported. The Finance Committee noted however that the Secretariat costs were showing inflationary pressure whilst the science funding was unchanged. They felt this was a poor signal. There was a need to ensure that IUPAC focus only on what it can uniquely undertake and that the scope of science activities and the necessary administrative support/cost is kept under review. It was recommended that extra-budgetary expenditure be kept to a minimum by building all costs that can be anticipated into the budget.
- The proposed approach to National Subscriptions was supported and the majority of members recommend the use of USD \$ as the subscription currency.
- The proposed endowment scheme was strongly supported and IUPAC encouraged to progress this as a priority for areas in which IUPAC has unique competence. Advice should be sought from our financial advisors BB&T.

The minutes of the Finance Committee Meetings of 2015 and 2016 are in the Agenda Book.

21.3 Accounts for 2015-2016

[Mr. Humphris]

[For Information and Discussion]

The Agenda Book contains the audited financial statements for 2015 and 2016 in which no areas of concern were noted by the auditors. The 2016 Audit was completed and available for the Bureau meeting in April 2017.

21.4 Profit and Loss Statement

The complete Profit and Loss statement for 2016 is below and behind this is detail that exemplifies the power of the new accounting system and the tracking of all financial transactions now possible. The data provide a better foundation for IUPAC to prepare budgets than has existed before. The data make comparisons with 2015 and the original 2016 budget together with a commentary to aid understanding. Looking at 2015 (a higher cost General Assembly Year) and 2016 (off year) together gives a feel for a typical IUPAC biennium. A summary view is provided below:

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IUPAC Income Statement - Summary				
				Budget-Actual
	2015 Actual	2016 Actual	2016 Budget	2016 Variance
Income				
				<i>Red=Positive Income</i>
Program Income	\$ 1,337,493	\$ 1,134,277	\$ 1,095,472	(38,805)
Direct Public Support	43,342	29,000	-	(29,000)
Investments	85,328	205,138	139,992	(65,146)
Miscellaneous Income	32	-	-	-
Total Income	1,466,195	1,368,415	1,235,464	(132,951)
Cost of Good Sold	-	34,045	-	(34,045)
Gross Profit	\$ 1,466,195	\$ 1,334,370	\$ 1,235,464	(98,906) Over on Income
Expense				
				<i>Red=Over budget</i>
Awards, Grants & Contribution	9,159	29,000	-	(29,000)
Fixed Costs - Salaries & Benefits	518,054	557,443	547,649	(9,794)
Lease, Insurance & Bank Fees	80,214	79,531	53,769	(25,762)
General & Administrative Expenses	161,661	106,679	40,055	(66,624)
Contracted Services	122,420	89,114	19,000	(70,114)
Depreciation Expense	12,407	9,850	20,475	10,625
Other Expenses	30,055	28,548	26,592	(1,956)
Travel & Meetings	603,929	385,109	589,776	204,667
Miscellaneous Expense	1	-	-	-
Total Expenses	\$ 1,537,901	\$ 1,285,275	\$ 1,297,315	12,040 Under on Expenses
Net Ordinary Income / (Loss)	\$ (71,706)	\$ 49,095	\$ (61,851)	(110,947)
Other Income & Expenses				
Other Income	(2,391)	(1,013)	-	1,013
Other Expense	63,039	17,598	25,000	7,402
Net Other Income / Expense	\$ 60,647	\$ 16,585	\$ 25,000	8,415
Nominal Income / (Loss) for the period	\$ (132,354)	\$ 32,510	\$ (86,851)	(119,362)

In summary, 2016 shows a positive net income \$32K relative to budget expectation of a deficit \$(87K).

The principal income variances were the AMP membership income and Publication/Royalty \$43k (note: the CI costs now split out into General & Administrative Expense), plus the finance portfolio up \$65k. The Public support \$29k has a matching expense.

The principal expense variances were bank fees associated with reimbursements of claims, and transaction fees; increased IT support due to the office move and the inclusion of the CI costs with G&A (the budget had these netted off against income) but importantly substantially reduced travel, accommodation and subsistence costs arising from claim forms associated with IUPAC projects.

As indicated, throughout 2016 IUPAC continued a substantial restructuring of its Secretariat, its functions and the necessary IT infrastructure to underpin this. Despite this, most of these expenses were accommodated within the approved budget. The remainder were approved as extra budgetary items by the officers. This has involved a

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number of projects overseen by the IUPAC officers and approved by the Executive committee. Important amongst these were:

- The operation of the full accrual accounting system (software and consultancy done in 2015) and the appointment of Jay Lucido as financial controller (within the budgeted Secretariat headcount of five).
- Multiple moves to the new permanent office accommodation (incremental costs of \$1,500). Purchased new office furniture and fittings at a cost of \$33,290 in 2015- there is a depreciation cost of \$5,153 in 2016 with a balance remaining of \$33,380.
- Upgrading the stability, decreasing risk and improving the security of the IT infrastructure commensurate with an international organization (positive variance in budget).
- The development of the new website as a foundation for the future public face of IUPAC and communications. The initial budget was approved at \$39,154. The expenditure to Phase I completion was \$136,280, including the beta version for the General Assembly pre-launch feedback. The website has been capitalized and is recorded on the balance sheet.
- The upgrading of the databases used in the administration of the Union and the interface with the new website to greatly improve the efficiency of working in the Secretariat. The expenditure that was approved was \$50,130 (includes \$5,000 scoping study for development of the SOW) in 2016 and remainder of \$44,860 will be spent in 2017 (development, implementation & training).
- Consulting support of \$19,000 was approved by the officers for the evaluation of chemistry in the member countries as a basis for a new approach to National Subscriptions.

21.5 Balance Sheet as of 31st December 2016

In summary, 2016 shows net increases in Cash and Cash equivalents, net investment in important fixed infrastructure mentioned (website, databases), the good performance of the investment portfolio and a reduction in subscriptions receivable. The opportunity was taken to write off the aging inventory of books.

The Accounts receivable (predominately NAOs outstanding subscriptions) was significantly reduced in 2016 due to focused attention, multiple reminder emails and outreach. The Accounts Payable shows a lower liability year on year. IUPAC's first filing for North Carolina state sales tax reimbursement as a non-profit was in 2015.

The Audited Summary Balance Sheet for 2016 is below:

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IUPAC Balance Sheet As of 31 December 2016			
	2015	2016	2016 vs. 2015 YOY
ASSETS			
Current Assets			
Checking/Savings			
Total Checking/Savings	154,577	180,833	26,255
Accounts Receivable			
Total Accounts Receivable	203,829	117,365	(86,464)
Other Current Assets			
Allowance for Doubtful Acct	(50,913)	(25,348)	25,565
Inventory	34,045	-	(34,045)
Sales Tax Receivable	4,797	1,336	(3,460)
Total Prepaid Expenses	5,278	2,382	(2,897)
Total Other Current Assets	(6,793)	(21,630)	(14,837)
Total Current Assets	351,613	276,568	(75,045)
Fixed Assets			
Total Fixed Assets	123,906	187,992	64,086
Security Deposits	3,565	3,565	-
Total Marketable Securities	3,818,558	3,889,081	70,523
Total Other Assets	3,822,123	3,892,646	70,523
TOTAL ASSETS	\$ 4,297,642	\$ 4,357,206	\$ 59,563
LIABILITIES & EQUITY			
Liabilities			
Current Liabilities			
Accounts Payable			
Total Accounts Payable	132,689	78,232	(54,456)
Total Credit Cards	22,648	172	(22,477)
Other Current Liabilities			
Total Payroll Liabilities	34,570	44,701	10,131
Total Unearned Membership Income	34,838	21,823	(13,015)
Deferred Rent	18,635	21,506	2,871
Total Short-term Notes Payable	-	100,000	100,000
Total Other Current Liabilities	88,043	188,030	99,987
Total Current Liabilities	243,380	266,434	23,054
Total Liabilities	243,380	266,434	23,054
Equity			
Net Asset w/ Donor Restriction	204,357	204,357	-
Net Asset w/o Donor Restriction	105,422	100,110	(5,312)
Unrestricted Net Assets	3,876,837	3,749,795	(127,042)
Nominal income / (loss) for the period	(132,354)	32,510	164,864
Total Equity	4,054,263	4,086,772	32,510
TOTAL LIABILITIES & EQUITY	\$ 4,297,642	\$ 4,353,207	\$ 55,564

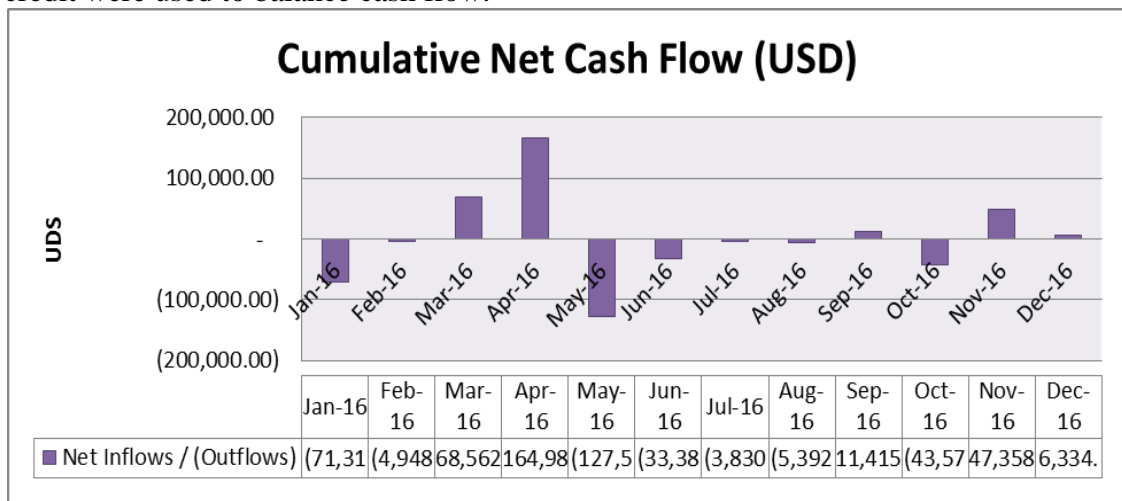
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21.5.1 Cash Flow 2016

The cash flow issues center around the difficulty of predicting when NAOs will settle their subscription invoices or when claim forms will be submitted by volunteers.

21.5.1.1 Cumulative Net Cash Flow:

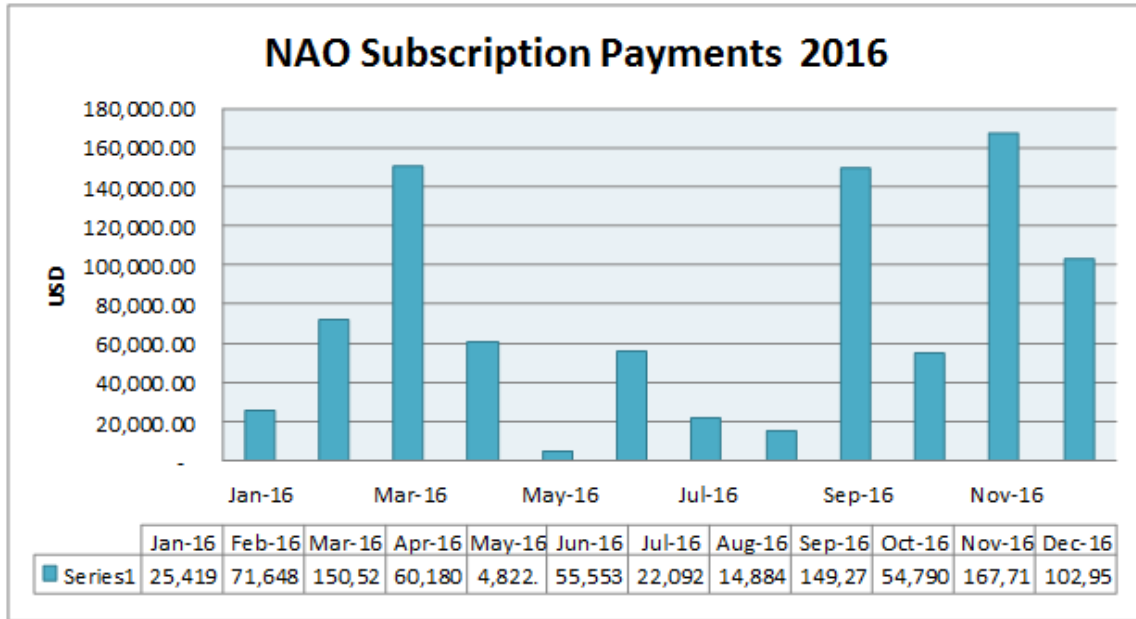
In 2016, IUPAC Divisions and Standing Committee hold annual meetings throughout the year. Planning for these expenses and timing is difficult, however, a process was implemented to determine when each meeting would occur and estimate the expenses associated. Currently the Claim form submissions are tracked to insure expenses were accounted for in the year they occurred. Given the uncertainties of NAO payment timing and the reimbursement requests, the investment dividends and interest and the line of credit were used to balance cash flow.



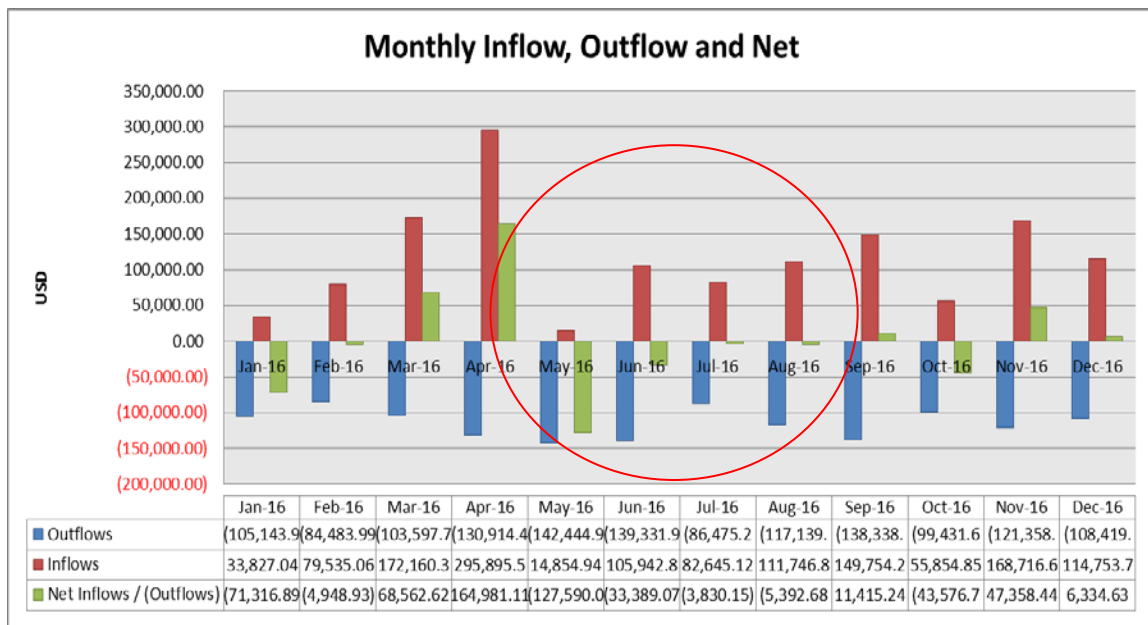
21.5.1.2 Cash Flow Issue: NAO Payments

Currently NAO payments are invoiced in September for the following year with a due date of 1 January 20xx and past due 31 December 20xx and thus can be received at any point through the year (or year after) reflecting in part the different mechanisms for funds from governments and National Academies. This creates erratic and unpredictable cash flow for IUPACs main income stream that is particularly difficult to manage. The 2016 NAO subscription payments throughout the year are below. Many Academies tend to pay in the fall due to funds availability. The chart details are in the report in the agenda book.

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During 2016, there was a significant shortage of cash in May-August. The chart below shows the monthly cash flow situation. IUPAC was forced to utilize our maximum line of credit in July and August (\$50,000 each month). This is shown as Total Short Term Notes Payable in the balance sheet.



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21.4 National Adhering Organizations and Associate National Adhering Organizations in Arrears

[Mr. Humphris]
[For Information and Discussion]

There are no National Adhering Organizations that are in arrears for 2016.

The following National Adhering Organizations were notified of the impending loss of NAO status in September 2016 and reminded of the outstanding invoices: Argentina, Bulgaria, Kazakhstan, and Pakistan. We received payments of the 2015 and 2016 National Subscription from Bulgaria. As of the 31 December 2016 deadline, no payments were received from Argentina, Kazakhstan and Pakistan and were considered automatically removed from NAO status, due to being 24 months in arrears. All three were notified 11 January 2017 of this change and invited to reapply for NAO status and sent the readmission policy and application. The overall loss for 2015-2016 against budget for these three countries amounts to \$24,298.

2017 National Subscriptions were budgeted as \$931,802 but is reduced to \$916,577 given the member nations who ceased their NAO status in 2015 and 2016. (NAOs above plus Ethiopia, Tunisia and Luxembourg's withdrawal) As of 08 June 2017 the amount of national subscriptions received is only \$397,141 from 30 of 54 NAOs with accounts receivable of \$534,661 (original budget).* The summary of the NAO subscription payments for 2016-2017 is in the Agenda Book for reference. This was creating a major cash flow issue in January and February, including our ability to meet payroll. As noted above we have already made the full use of our line of credit.

Associate National Adhering Organizations:

IUPAC approved Ghana Institute for Pure and Applied Chemistry at Council in 2015. They have paid their 2014 and 2015 ANAO fee and have an outstanding balance due for 2016 and 2017. Under IUPAC Statutes Ghana would have to convert to full NAO status but their intention is unclear despite reminders to this fact.

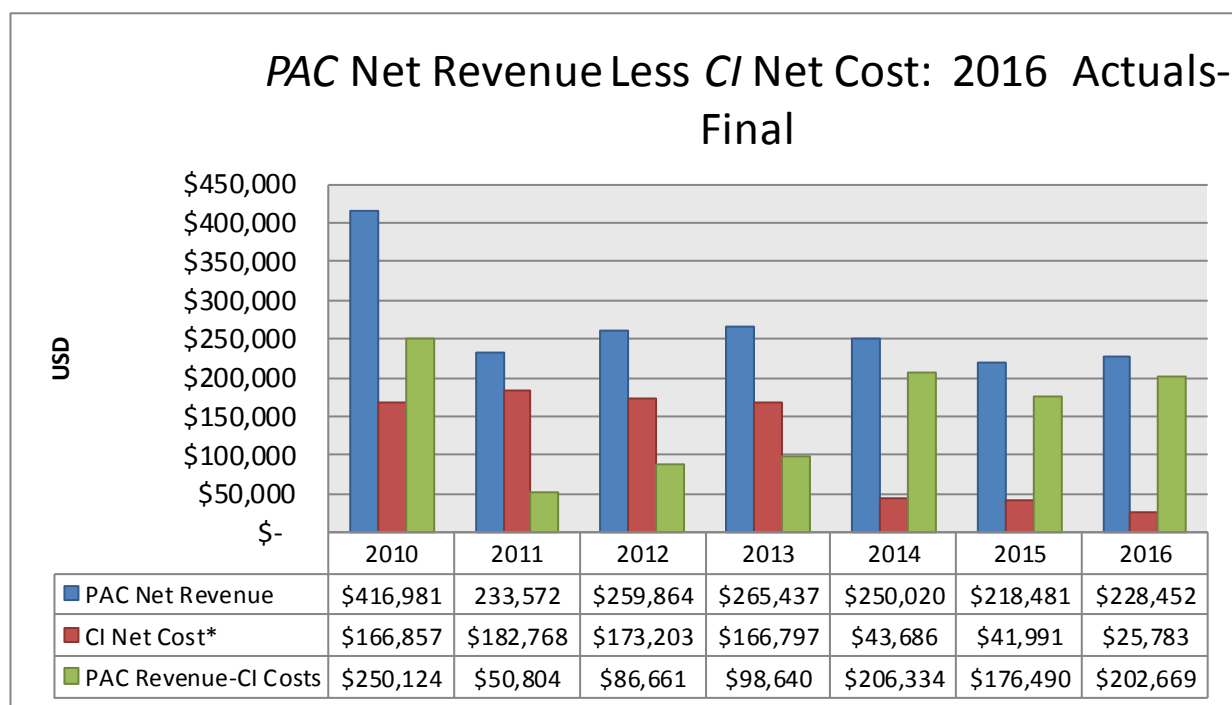
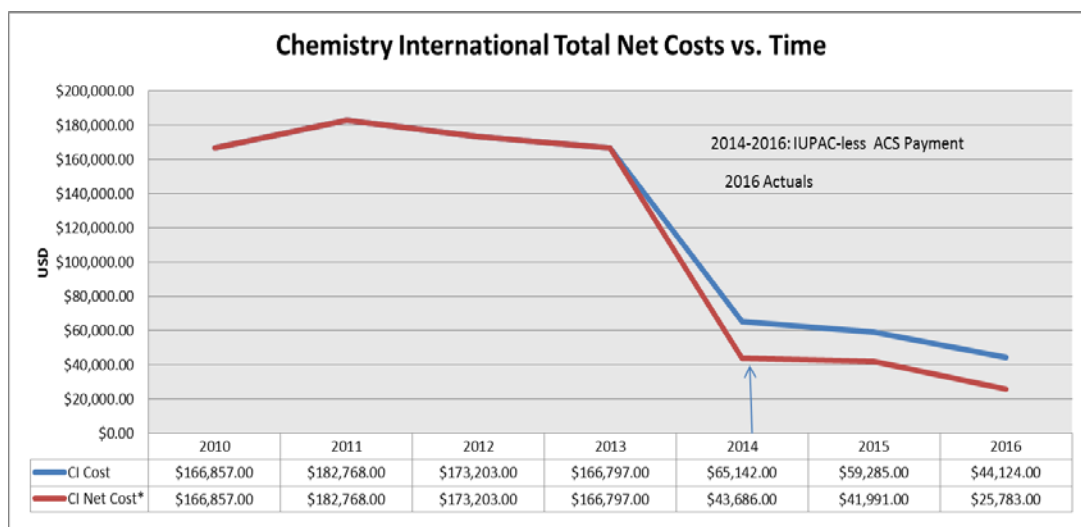
21.5 Other Income

21.5.1 Publishing income

IUPAC's share of publishing income from PAC and CI from the agreement with De Gruyter in 2016 was \$202,669. This number is shared with Council members to allow year on year monitoring of publishing performance. In the published accounts the phasing is different as a result of the agreement. Final settlement invoices and payments are made in April of following year along with a PAC advance payment of €100,000 now negotiated for future years. The year-end payment for 2016 made on 15 May 2017 will be part of the 2017 accounts and audit.

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Considering year on year publishing performance, CI net cost to IUPAC continues to fall. We intend to maintain this trend by moving to more digital access and developing a new CI Digital First platform on the IUPAC website.



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21.5.2 Company Associates Program

IUPAC had 57 Company Associates in 2016 that accounted for just \$5,950 in income in 2016; less than budgeted. In 2017 the invoicing was sent earlier to account for the CA income within the subscription year. The 2017 Company Associates are down to 48. The CA program is under active review to ensure it is more relevant to both companies and IUPAC, to significantly add to income and to remove unnecessary complexity and administrative burden. Currently the annual subscription is just \$450, unchanged for many years. In some cases CA status is granted for support of IUPAC activities. Dow Chemical Company was granted enduring CA status for the support of IYC. Only those companies participating directly with IUPAC pay \$450. Most are managed through an NAO in which case IUPAC receives just \$50, the NAO retaining the bulk of the subscription.

21.5.3 Affiliate Members Program

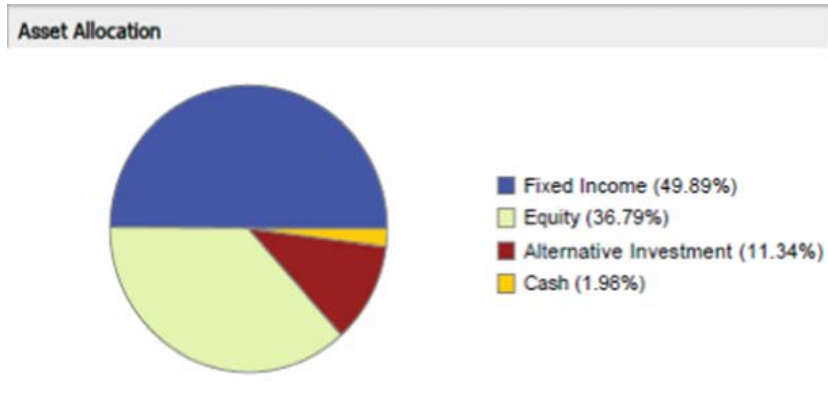
IUPAC also allows individual membership through the AMP scheme. This is both a fee-bearing program and an IUPAC sponsored program for members from developing countries. The current AMP fee is \$35.00, again unchanged for many years. It is collected both by IUPAC directly and through national chemical societies by some NAOs e.g. USA and France. Membership through a NAO/Chemical Society remits \$20.00 per member; ACS remits \$21.00 and represents ~66% of the AMP membership. In 2016 there were 1150 paid members; 54 individual sponsored members, and 6 sponsored Countries having 113 members. This provided a 2016 income of \$28,225 and a cost to IUPAC of \$3,500 for sponsored (by IUPAC income) membership. This resulted in a net income of \$24,725, before CI print costs are deducted. Benefits of membership are a paper copy of *Chemistry International* and discounts to IUPAC endorsed conferences. The AMP membership subscriptions and benefits are currently being reviewed to ensure they represent a fair balance between subscription and benefits, a meaningful income stream and as a mechanism to encourage engagement of chemists from all countries.

21.5.4 Investment Portfolio

In 2016 the IUPAC Investment performance the portfolio showed a net appreciation of \$87,550 over 2015 to a total value of \$3,967,624. Interest and Dividends of \$125,445 was earned before fees. Of this, \$77,867 was used to help management of cash flow. There were no withdraws of principal capital from the investment portfolio. Management of the portfolio is the responsibility of the Finance Committee acting on expert guidance of advisors BB&T/Scott&Stringfellow.

The overall allocation class was stable throughout 2016.

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21.6 Appointment of Auditors for 2017 and 2018

[Mr. Humphris]

[For Decision; voting by show of hands]

It is recommended to Council that we the appointment of Batchelor, Tillery and Roberts, LLP, of Raleigh, North Carolina USA as IUPAC Auditors for 2017 and 2018.

Motion: *Council approves the appointment of Batchelor, Tillery and Roberts, LLP, of Raleigh, North Carolina USA as IUPAC Auditors for 2017 and 2018.*

21.7 Appointment of Auditors for 2019

[Mr. Humphris]

[For Decision; voting by show of hands]

The Finance Committee recommended at the 2017 February meeting to change auditors beginning for the accounting year 2019. Requests for proposals are being solicited and these will be considered by the Finance Committee and Bureau so that a recommendation can be provided at Council in 2019 for approval.

Motion: *Council approves the process for a change of auditors for fiscal year 2019 onwards.*

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22 [13.30] Proposed Budget for 2018-2019 and National Subscriptions for 2018-2019

[Mr. Humphris]

[For Discussion and Decision; voting by cards, >50 % of votes cast (Bylaw B2.2)]

22.1 Proposed Budget for 2018-2019

The full budget proposal for the biennium 2018/19 is attached below. The budget for 2018/19 is for a smaller deficit of \$153k than budgeted for 2016/17 that showed a deficit of \$214k. This is despite the inclusion of additional anticipated expenditure for IUPAC 100 and the cost of our commitments to the ICSU project on Women in Science. The budget improvement is in part due to the greater understanding of the financial performance now available through the new accounting system and reporting and our understanding of the improved performance in 2016. A key issue was the control of costs at the 2015 Busan General Assembly that is anticipated to be repeated in São Paulo 2017 and Paris 2019.

The Budget is linked directly to the individual budgets of the Division and Standing Committee allocations, which are included in the Agenda Book.

Items and key Budget assumptions Council should consider are:

- The proposal to maintain the total National Subscription income from existing members at the 2017 level with individual national subscriptions set at the 2017 level already approved in USD. We are seeking to grow other income lines to offset US inflation of expenses.
- The proposed increase in income from Company Associates (CA) following a review of membership benefits and costs. The proposal is in the Agenda Book (IUPAC and Applied Chemistry). It reflects a determination to reactivate corporate engagement (subscription up to \$2500) but with two other benefits. Restoration of the financial benefits to companies that were lost in the transition to DeGruyter (discounts on publications) and the provision of rights for companies to nominate scientists for election to Associate positions in Divisions and Standing Committees irrespective of home country.
- A (long overdue) review of the individual affiliate membership program (AMP). The budget assumes subscription fees are increased to \$50 with a premium fee of \$75 for those wishing to receive a printed version of *CI*. All other members will be provided authenticated access to *CI Digital First* by default in addition to existing discounts for publications and to IUPAC conferences. The intention is to grow the worldwide membership and engage it more effectively in IUPAC activities by enabling affiliate members to be nominated for election to Associate positions in Divisions and Standing Committees irrespective of home country.

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Bureau supported these ideas to increase the engagement of individual chemists in all countries (not just the 54 adhering countries) whether they are in academia, government or industry.

- New earnings from database with De Gruyter (PAC Standards Online).
- The growth in salaries and benefits driven by allowance for salary increases (3% p.a.), full accounting for earned vacation (a non-cash item) and increasing US health insurance costs
- The forecast reduction in General and Administrative expense now that IUPAC is established in its new office and we see the benefit of the investment in new operating systems and databases.
- Reduction in the printing and distribution costs for Chemistry International with the move to digital publishing and a requirement for those members requiring paper copies to pay the cost premium for this.

The short form P&L for 2016 Actual, 2017 Budget, 2018 and 2019 budget are shown below:

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	2018-2019 Proposed Budget				
	2016		2017	2018	2019
	Actual	Budget	Budget	Budget	Budget
Ordinary Income/Expense					
Income					
Program Income					
Membership Dues – NAO	883,284	886,900	931,200	917,033	914,375
Membership Dues – ANAO	250	-	-	500	750
Membership Dues – AO	1,900	-	-	2,000	2,000
Company Associates					
CA – NAO	2,350	6,696	6,700	25,000	50,000
CA – Rest of World	3,600	-	-	5,000	5,000
Total Company Associates	5,950	6,696	6,700	30,000	55,000
Affiliate Membership Program					
AMP – Chemical Society	26,790	15,000	15,000	32,703	37,375
AMP – Individual Members	1,435	-	-	17,609	20,125
Total Affiliate Membership Program	28,225	15,000	15,000	50,312	57,500
Publication Income	200,474	182,496	241,000	235,000	250,000
Database Income – DeGruyter	-	-	29,000	24,474	20,144
Database Income – Springer	-	-	-	22,000	22,000
Royalty Income	14,195	2,500	2,500	10,000	15,000
Total Publication Income	214,668	184,996	272,500	291,474	307,144
Total Program Income	1,134,277	1,093,592	1,225,400	1,291,319	1,336,769
Total Direct Public Grants	29,000	-	-	30,000	30,000
Total Direct Public Support	-	-	-	5,000	10,000
Total Government Grants	-	-	-	1,000	1,000
Total Investments	205,138	139,992	140,000	141,000	142,000
Miscellaneous Income	-	-	-	-	-
Total Income	1,368,415	1,233,584	1,365,400	1,468,319	1,519,769
Cost of Goods Sold					
Cost of Goods Sold	34,045	-	-	-	-
Gross Profit	1,334,370	1,233,584	1,365,400	1,468,319	1,519,769
Expense					
Total Awards, Grants & Contributions	29,000	-	-	-	10,000
Total Salaries & Earned Vacation	438,192	426,000	456,040	475,497	489,765
Total Employee Benefits	119,251	121,649	126,423	137,809	149,859
Total Insurance & Workers Comp	2,507	2,616	2,370	2,600	2,700
Total Lease & Rent Expense	56,930	49,953	57,440	55,127	54,952
Total Interest, Payroll & Bank Fees	20,094	1,200	17,580	20,750	20,800
General & Administrative Exp					
Office Supplies	2,840	2,400	3,600	3,300	3,400
Total IT Support & Maintenance	48,854	26,520	26,820	24,300	25,300
Total Communication Expense	6,284	6,515	6,491	6,515	5,567
Total Cost of CI Production (DG)	41,754	-	-	19,380	25,858
Total Postage, Prntg & Ref Materials	6,947	4,620	6,000	7,300	8,700
Total General & Administrative Exp	106,679	40,055	42,911	60,795	68,825
Total Contracted Services	89,114	19,000	59,300	63,750	63,750
Total Facilities and Equipment	9,850	20,475	36,570	46,104	46,104
Total Other Expenses	28,548	26,592	25,850	28,100	28,100
Total Travel & Meetings	385,109	589,776	654,399	423,560	872,340
Miscellaneous Expenses	-	-	-	-	-
Total Expense	1,285,275	1,297,315	1,478,883	1,314,092	1,807,195
Net Ordinary Income	49,095	(63,731)	(113,483)	154,227	(287,426)
Net Other Income (Expense)	(16,585)	(25,000)	(12,000)	(10,000)	(10,000)
Net Income / (Loss)	32,510	(88,731)	(125,483)	144,227	(297,426)
Biennium Income(Loss)			(214,215)		(153,199)

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Motion 1: *Council approves the proposal for the reassessment of the Company Associates program*

Motion 2: *Council approves the proposal for the revision of subscriptions and benefits of the Affiliate Members Program*

Motions 3: *Council approves of the Proposed Budget for 2018 – 2019*

To supplement new income from Company Associates, Affiliate Members and from publishing, we are considering ways to facilitate broader engagement with Corporations given the important and relevant new strategic priorities for IUPAC in relation to sustainable development and Big Data. With this in mind, we are considering the creation of an endowment fund to create the opportunity for corporations to become strategic partners or corporate sponsors of IUPAC and a proposal is included in the Agenda Book. With the new accounting system in place and through our work with BB&T we feel we have the capability to administer this type of approach.

The principles would be easily adapted for grants from funding bodies and trust or for donations or bequests from individuals who wish to contribute to the work of IUPAC.

At this stage Council is asked to support this initiative to enable the Executive Committee to implement it as soon as the legal and financial details can be finalised. No account of possible benefits in the 2018/2019 biennium has been made at this stage.

Motion 4: *Council approves of the proposal for the Executive Committee to proceed with the creation of the Endowment Fund*

22.2 National Subscriptions for 2018-2019

In Busan, IUPAC committed to bring forward new proposals for 2018/19 that were more predictable, transparent and represented a better balance of the national chemistry activities, their impact and national wealth. The National Subscriptions for 2016/17 were calculated on a provisional basis given dissatisfaction with the method for calculating subscriptions.

The task force has analysed national activities in chemistry and their impact on national wealth to develop a proxy for the chemistry activity in each country that provides a measure or an index of:

- Knowledge comprising firstly analysis of publishing activity the Scopus database and secondly of patent activity in chemistry relevant categories from analysis of patent applications for the Thomson Reuters Innovation database.
- A Capital Index providing a value measure of firstly the National GDP (World Bank data) and the size of the Chemical industry based on Cefic data. Industry impact could be represented either by absolute value or the importance the chemical industry as the percentage of GDP.

All data is a historical average for the past five years. The data is normalised to provide the index in each category (based on the largest as 1.000) and the indices summed, unweighted to give an

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overall proxy for each country.

In addition the task force

- Surveyed National Adhering Organizations twice on the firstly principles of a new approach to calculating national subscriptions and secondly proposals for the proxy, possible banding of subscriptions and a recommendation to invoice in \$ USD.
- Benchmarked IUPAC with other Science Unions

The results of the first survey work were endorsed by the Executive Committee and summarized in a second survey of National Adhering Organizations included in the agenda book.

In April 2017 Bureau noted from the surveys that:

- Most science unions have a banded subscription model linked directly to voting rights. IUPAC has six voting bands linked to the actual subscription paid. National members agreed to a banded subscription model if this is useful within the calculation.
- Most agreed to an evolutionary approach, with migration from current subscriptions to the new levels no greater than 5% per annum up or down.
- The critical consideration for the assessment of the scale and impact of chemistry by country across the world is the availability of reliable, comparable data. NAOs would prefer the data to be available from public sources for transparency
- There were reservations about the use of USD \$ invoicing.
- The proposed 2018/19 budget assumes a level of income overall from individual member countries unchanged from the 2017 budget. This is subject to change depending on the Council vote on the National Subscription task force recommendations.

Based on the Bureau approval, a full provisional proposal including national subscription calculations and individual country's national data was sent to all NAOs with an invitation to join one of six regional webinars held in May 2017. The objectives were to ensure a good understanding of the approach, to enable feedback of any concerns and to highlight any national data issues.

The provisional National Subscription task force recommendations sent to NAOs were:

- The use of a proxy based on four factors combining a Knowledge Index comprising factors for Intellectual Property IP and Publishing (based on number of articles) and a Capital Index comprising the absolute GDP and the % of this GDP represented by chemicals.
- The use of these factors, unweighted, to calculate an overall proxy for each country

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- Calculation of a proxy subscription in \$ USD as a proportion of the total budgeted income for NAOs. For each country, a calculated proxy subscription (NSp)_i based on a simple proportion of an individual country's proxy score (Np)_i to the total of all proxy scores (Np)_n multiplied by the total income budgeted from NAOs (NS)_n in \$ USD:

$$(NSp)_i = (Np)_i / (Np)_n \times (NS)_n$$

- For each country a comparison is made between (NSp)_i and its 2017 subscription (NS₂₀₁₇)_i measured in \$ USD to assess if this is an increase or decrease over 2017. Depending on whether this is an increase or decrease the final subscription (NS)_i is calculated as (NS₂₀₁₇)_i migrated at +/- 3% annually until the calculated proxy subscription (NSp)_i is reached..
- Invoicing subscriptions in future in \$ USD.
- The use of this proxy approach to calculate the subscription due from any new membership applicants.
- The current voting bands are unchanged.
- Given the relative insensitivity of the IP index and domination by a small group of countries it is not proposed to review this aspect of the proxy calculation every biennium. All the remaining proxy information is readily available for updating. The IP index might be updated every 2 or three biennia as a check.

12 NAOs joined the calls or gave feedback. Most supported the approach, and the proposal for an evolutionary implementation. All supported the proposal to invoice in \$ USD. Concerns were raised over the use of composite factors (e.g. Chemicals turnover as % GDP) and we have identified a significant issue with data for one country that would have a material impact on the national subscription calculations that were shared with NAOs. **The task force therefore feels that further work is needed before making a formal final recommendation to Council.** Given the timing, this will have to follow the 2017 General Assembly in Sao Paulo.

Motion 1: *Council supports the continuation of National Subscription task force to verify all data and to recommend a new approach by July 2018 for implementation for 2019 onwards superseding those agreed in the agreed in the 2019 Budget.*

Motion 2: *In the event that this is not possible Council authorizes the Executive Committee to call a special delegate conference of NAOs to agree a way forward on national subscriptions in the autumn of 2018.*

Motion 3: *Council approves the proposal to invoice in future in USD \$*

In the event that motion 3 is not carried it is recommended that 2018 and 2019 subscriptions are invoiced in the currency previously chosen, calculated on the average best available USD \$ exchange rates in the first half of 2017. (1 January 2017- 30 June 2017) The 2018 and 2019 National Subscriptions are in the Agenda Book.*

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REFRESHMENT BREAK: 15:00-15:30

23 [15:30] Applications for Associated Organization Status

[Prof. Tarasova]

[For Decision]

The application for International Young Chemists Network to become an Associated Organization of IUPAC was endorsed by the Executive Committee of IUPAC and is submitted for formal approval by the IUPAC Council.

Motion: Council approves designation of the International Young Chemists Network as an Associated Organization of the Union.

24 [15:40] Termination of Associate Organization Status

[Prof. Tarasova]

[For Information]

There are no Associate Organizations in arrears at this time.

25 [15:45] Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference

[Prof. Hartshorn]

[For Information, Discussion and Decision; voting by show of hands]

25.1 Evaluation Committee (EvC)

Please see the Agenda Book for the full Terms of Reference with the proposed additional term; these were recommended for approval at Council by Bureau.

It is thus proposed that the following new Term of Reference be inserted as ToR “(iv)”:

(iv) To evaluate the roles and contributions of Divisions and Committees with respect to the mission and strategic initiatives of the Union.

Motion: Council approves the proposed Terms of Reference for the Evaluation Committee

25.2 Interdivisional Committee on Green Chemistry for Sustainable Development (ICGCSD)

At the meeting in Montreal the IUPAC Bureau voted to establish the Interdivisional Subcommittee on Green and Sustainable Chemistry. This decision

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reflected our view of the importance of green Chemistry among other IUPAC areas of influence. Green Chemistry first seen as the invention, design and application of chemical products and processes to reduce or eliminate the use and the production of harmful substance, has become now-a-days a basic instrument for sustainable development that touched many aspects of the environment and human welfare, and is relevant to 17 Sustainable Development Goals set by the UN.

Since that time, a group of volunteers, led by Professor Pietro Tundo, the IUPAC Bureau member, worked on Terms of Reference of this new IUPAC body. After several rounds of discussions among the EC and Bureau members, as well as the experts from outside IUPAC, it was suggested to name this new body “The Interdivisional Committee on Green Chemistry for Sustainable Development”. In October 2016 the draft of the Terms of Reference of The Interdivisional Committee on Green Chemistry for Sustainable Development was sent to the IUPAC Bureau members for approval and approved (24 votes have been casted: 23 for and 1 against). The Terms of Reference are in the Agenda book for review.

The composition and the proposed membership were discussed by the EC members during the EC meeting in Beijing, 12-13 November 2016. The EC approved the proposed membership as provisional until the approval of the ICGCSD by the Council at its’ meeting in San Paulo.

A report from ICGCSD is in the Agenda Book. It demonstrates that the actions undertaken allowed to gain momentum in IUPAC green chemistry for sustainable development initiatives.

Motion 1: *Council ratifies the Executive Committee’s decision to establish the Interdivisional Committee on Green Chemistry for Sustainable Development*

Motion 2: *Council approves the proposed Terms of Reference for the Interdivisional Committee on Green Chemistry for Sustainable Development*

25.3 STATUTES AND BYLAWS

The Statutes and Bylaws have been reviewed and amplified where necessary to provide detail consistent with current practice where there as none before, to incorporate changes made by Bureau and Council since the last edition (2010), and to provide more consistency in style. A draft of the changes in the Statutes and Bylaws and commentary is in the Agenda book.

Motion 1: *Council approves the proposed changes and additions to the Statutes and Bylaws*

26 [16:00] Report from the World Chemistry Leadership Meeting (WCLM)

[Prof. Ober and Prof. Garelick]
[For Information and Discussion]

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The World Chemistry Leadership Team Meeting will be held on Wednesday 12th July 2017 starting at 09.00. The theme of the meeting is IUPAC's role in developing interdisciplinary/collaborative work in the Chemistry community and beyond.

27 [16:10] Reauthorization of Commissions

[Prof. Hartshorn]

[For Decision; voting by show of hands]

Bylaw 3.302 requires that Council reapprove all existing Commissions at each General Assembly.

Motion: *Council reauthorizes the Commission on Physicochemical Symbols, Terminology and Units, the Commission on Isotopic Abundances and Atomic Weights, and the IUBMB-IUPAC Joint Commission on Biochemical Nomenclature (JCBN).*

28 [16:15] Approval of English as the Official Language of IUPAC*

[Prof. Hartshorn]

[For Decision; voting by show of hands]

Statute 5.405 requires that Council determine every four years the one language in which the official records of the meetings of the Council, Bureau, and Executive Committee shall be kept and published. The last time that such a determination was made was at the General Assembly held in Istanbul, Turkey, in the year 2013, four years ago.

Motion: *Council is asked to approve that the one language in which the official records of the meeting of the Council, Bureau and Executive Committee shall be kept and published will be English for the period of 2018-2021.*

29 [16:20] Important Matters Referred to Council by Bureau at 48th General Assembly, Not Covered by Items on Council Agenda

[Prof. Hartshorn]

[For Information and Discussion]

The 99th Bureau meeting will have taken place on Tuesday 11th July 2017 in São Paulo. This item is to ensure all items for Council can be raised by Bureau.

30 [16:25] Any Other Business

[Prof. Tarasova]

31 [16:30] Closing Remarks & Adjournment

[Prof. Tarasova]

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