

49th IUPAC COUNCIL MEETING

São Paulo, Brazil 12-13 July 2017

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1. Introductory Remarks and Finalization of Agenda

IUPAC President Prof. Tarasova welcomed the delegates to the 48th IUPAC Council meeting. She thanked the Brazilian Chemical Society and the Organizing Committee for their hospitality and the excellent arrangements for both the General Assembly and the Congress.

Prof. Tarasova asked for a moment of silence for IUPAC Colleagues deceased since Council last met at Istanbul.

There were no additions or changes proposed to the Agenda. The Agenda was approved unanimously.

2. Approval of Minutes of 48th Council Meeting and Matters Arising

Prof. Tarasova asked if there were any corrections or matters arising not covered elsewhere in the Agenda. The Minutes of the 48th Council were approved with the request for inclusion of the 2016-2017 Budget from the delegate of Switzerland.

3. Ratification of Decisions Taken by Bureau and Executive Committee since 48th General Assembly

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

4. Announcement of Nominations for Union Officers and Bureau Members

Prof. Hartshorn reviewed the procedures as presented in the material provided to the delegates. He described in detail the procedures specific to the election of Officers and Bureau Members. He informed the delegates that the voting order would be Vice President and then Elected Members of the Bureau. He then reviewed the situation for each office. He indicated that five Bureau members would be elected to complete the full roster of ten members.

Prof. Hartshorn noted that 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. Announcement of Time of Elections

Prof. Hartshorn announced that the elections for Vice President and Elected Members of Bureau would be held at 09:00 hours on 13 July 2017. He then announced that the proposed Tellers for the Union elections were Prof. Karl-Heinz Hellwich (replacing Prof. Chiu due to conflict with Congress), Prof. Jan Reedijk and Dr. Fabienne Meyers (IUPAC Secretariat) as Election Tellers. The motion below was made and seconded and was approved unanimously by a show of hands.

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6. ICSU-ISSC Merger, Executive Committee ICSU

Prof. Tarasova introduced Professor Nicole Moreau, Executive Committee ICSU, who reported on the state of the ICSU-ISSC merger. This item was for information only and no action was requested from Council.

7. Statutory Report on the State of the Union

Prof. Tarasova presented a summary of her report on the challenges and accomplishments of the Union in the current biennium. She noted the importance of implementing the renovated Strategic Plan and that IUPAC is looking for new approaches to position chemistry as a powerful tool to achieve Sustainable Development Goals. She stated that IUPAC has strengthened its' cooperation with other unions, ICSU, UNESCO, OPCW and is now seen as a leader in the chemistry enterprise in the rapidly evolving field of science. She noted that as IUPAC 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 provided an update on both the Strategic Plan and Member Relations. He discussed that 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 provided a detailed update on the progress of the merger and relation to IUPAC's interests. He stated that 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, ICSU members will be asked to vote on whether to authorize the two organizations to merge.

IUPAC leadership had 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

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Force and the Strategy Working Group were expected after 48th Council meeting, not allowing enough time for a review by delegates at Council. Therefore, IUPAC asked 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.

Council authorized 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, unanimously by show of hands.

8. Vice President's Critical Assessment

Prof. Zhou delivered a summary of his Vice President's Critical Assessment, which was received by Bureau 8 April 2017. His entire report was available in the Council Agenda book.

9. Report of Secretary General

Prof. Hartshorn in his remarks discussed a few highlights from his written report which focused on the operations 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. He stated the importance of recognizing 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.

He discussed the 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. He noted that Secretariat is also continuously 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 to enhance collaboration. He noted 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 provided additional detail in his report.

He called attention to the revised the Statutes and By Laws for the Union under Agenda item 25.3, which reflect the decisions taken by the Bureau, Executive Committee, and Council since they were revised in 2010.

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Prof. Hartshorn also discussed a process of formalizing strategic relationships with bodies such as OPCW and IYCN, through development of Memorandums of Understanding. He drew attention to the significant and developing relationship with the Chemistry Research Data Interest Group of the Research Data Alliance, through which IUPAC is seeking to identify and address key problems for the field of Chemistry in the world of big data.

He also drew attention to the proposal to introduce a new standing committee, the Interdivisional Committee on Green Chemistry for Sustainable Development in Agenda item 25.2 and the proposed addition to the terms of reference for the Evaluation Committee in item 25.1, which would provide a review mechanism by which IUPAC can judge the effectiveness (or otherwise) of Divisions and Committees in delivering on the mission and strategic initiatives of the Union. He stated that the last two paragraphs reflected an intention to raise the responsiveness of IUPAC toward developments in Chemistry and the world in which we operate.

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

Prof. Hartshorn reported that no new organizations have applied for NAO status since the 48th Council Meeting. He stated that IUPAC received notification on 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. Council approved the Czech Chemical Society as successor to the Czech Committee for Chemistry as National Adhering Organization from the Czech Republic, unanimously by show of hands.

11. Adoption of Recommendations on Nomenclature and Symbols

Prof. Hartshorn put forth the motion for Council adoption of Recommendations on Nomenclature and Symbols. Council formally adopted the Recommendations approved by the Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS) that had been published, or were scheduled to be published, in *Pure and Applied Chemistry* from August 2015 through June 2017, by show of hands.

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

Prof. Reedijk summarized the most recent efforts and publications regarding the names and symbols of element 113, 115, 117 and 118. 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).

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 $Z = 113$,

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

Council ratified the decision of Bureau for the names and symbols of the four new elements [$Z = 113$, $Z = 115$, $Z = 117$ and $Z = 118$] by show of hands.

13. Reports of Division Presidents

The reports of the Division Presidents were accepted as read and periods were allocated for questions and comments. Full reports were available in the Council Agenda Book.

14. Election of Union Officers and Bureau Members and Approval of Elected Officers of Divisions

Prof. Tarasova discussed the election process that was 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 were included in the Agenda Book.

Results of Council voting for Vice President resulted in a tie vote for Prof. Christopher Brett and Dr. Javier Garcia Martinez, by written and secret ballot. The Presiding Officer, Prof. Tarasova, after consultation with the Executive Committee, cast the deciding vote for Prof. Christopher Brett (B2.222).

Council then elected the following members of Bureau for the term 2018-2021:

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

Council ratified the election of the new Vice President and Elected Members of the Bureau. In addition, Council unanimously ratified the elections of Division Officers and Titular Members that were completed by divisional elections that were coordinated through the IUPAC Secretariat.

15. Site and Dates of 51st General Assembly and 48th Congress (2021)

Council voted for the site and dates of the 48th World Chemistry Congress and 51st General Assembly 2021 by written and secret ballot. (B2.23 Simple Majority). Montreal, Canada received the majority votes during second round (Israel was eliminated in the first round). The Canadian Society for Chemistry (CSC) and the Canadian National Committee for IUPAC (CNC-IUPAC) will host the 51st General Assembly and 48th World Chemistry Congress on 13-20 August 2021.

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16. Site and Dates of 52nd General Assembly and 49th Congress (2023)

Council voted for the site and dates of 49th World Chemistry Congress and 52nd General Assembly 2023 by written and secret ballot. (B2.23 Simple Majority). The Hague, Netherlands received the majority votes during second round (Israel was eliminated in the first round). The Royal Netherlands Chemical Society (KNCV) will host the 49th World Chemistry Congress and 52st General Assembly on 20-25 August 2023.

17. The 2016-2017 Service Awards were presented to Division Presidents and IUPAC President, Dr. Mark Cesa for their end of service.

18. Reports of Standing Committee Chairs

The reports of the Division Presidents were accepted as read and periods were allocated for questions and comments. Full reports were available in the Council Agenda Book.

19. Centenary Planning

Prof. Tarasova discussed the plans for the celebration of IUPAC's Centenary in 2019 and IYPT2019.

19.1 Status of IYPT2019

Prof. Tarasova presented an update to the Council on the International Year of the Periodic Table

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.

She stated that The Periodic Table of Chemical Elements 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 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.

Prof. Tarasova outlined the supporting organizations that would join IUPAC in the proposal for IYPT: International Union of Pure and Applied Physics (IUPAP), European Association of Chemical and Molecular Sciences (EUChEMs), the

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International Astronomical Union, the International Union of History and Philosophy of Science and Technology (IUHPST).

In February 2017, Prof. Tarasova 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.

In her presentation to Council, she outlined the proposed activities and events as well as a proposed Steering Committee for the IYPT. She stated that UNESCO's decision about IYPT2019 is to be made later in 2017.

19.2 Status of Anniversary Options

Prof. Zhou updated the Council on the status of the IUPAC Anniversary Date options. 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. He spoke about the 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 Co-Chair

Prof. Mary Garson presented an update on the IUPAC100 activities and efforts underway for the IUPAC Centenary celebration in 2019.

During the meeting prior to Council, the task group worked on developing and detailing the proposed activities: Women Celebrating a Chemical Moment in Time, IUPAC100 for Africa-Postgraduate summer school on green chemistry; IUPAC100 Periodic Table Competition; a possible project on visualization of how IUPAC made history and an additional concept regarding highlighting the essential tools that have been created by IUPAC and their importance to scientists today.

20. Plans for 50th General Assembly and 47th Congress in 2019 (Paris, France)

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

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21. Financial Reports

21.1 Biennial Report of Treasurer

An overview of the financial health of the Union was presented. Mr. Humphris stated that the current financial outlook emphasizes the need for change and innovation. The 2016 performance was better than plan and 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 IUPAC 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 we 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 therefore includes proposed national subscriptions for 2018 and 2019. These can be superseded once agreement is reached on a new formula and implementation method.

The 2018/19 biennium 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.

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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

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.
- 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 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 were in the Agenda Book for reference.

21.3 Accounts for 2015-2016

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Mr. Humphris noted that the Agenda Book contained 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. This item was for information only and there was no discussion.

21.4 Profit and Loss Statement

Mr. Humphris discussed and highlighted the complete Profit and Loss statement for 2016 and stated that the financial details provided exemplifies the power of the new accounting system and the ability to track all financial transactions is now possible. The data provide a better foundation for IUPAC to prepare budgets than had existed before. He reviewed the financial information with 2015 and the original 2016 budget together with a commentary to aid understanding. He stated that looking at 2015 (a higher cost General Assembly Year) and 2016 (off year) together gives a feel for a typical IUPAC biennium.

In summary, 2016 showed 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 involved a 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).

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- 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

Mr. Humphris discussed and highlighted the complete Balance Sheet for 2016 and summarized the information which showed 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.

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:

Mr. Humphris stated that 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. Most importantly, given the uncertainties of NAO payment timing and the reimbursement requests, the investment dividends and interest and the line of credit had to be used to balance cash flow.

21.5.1.2 Cash Flow Issue: NAO Payments

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Mr. Humphris outlined the process of invoicing and payments of the NAO National Subscriptions. 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. He articulated that 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 were shown and details were included in the Agenda book. Many Academies tend to pay in the fall due to funds availability. The chart details are in the report in the agenda book.

Mr. Humphris referred to the annual chart of cash flow and stated that in order to reimburse claims due to the NS payments. The Line of Credit and monthly interest and dividend income was used for claim reimbursement, operating expenses and IUPAC staff salaries and benefits.

21.6 National Adhering Organizations and Associate National Adhering Organizations in Arrears

The Treasurer reviewed the status of NAO and ANAO stating that no NAO's were 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. Payments were received 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 was in the Agenda Book for Council's reference. Mr. Humphris explained the effect of the NS payment timing on cash flow issue in January and February which included the ability to meet the Secretariat payroll. As noted above IUPAC had already made the full use of our line of credit.

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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.

21.7 Other Income

21.7.1 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. 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.

21.7.2 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.

21.7.3 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

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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.

21.7.4 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.

21.8 Appointment of Auditors for 2017 and 2018

Council approved the appointment of Batchelor, Tillery and Roberts, LLP, of Raleigh, North Carolina, USA as IUPAC Auditors for 2017 and 2018, by show of hands.

21.9 Appointment of Auditors for 2019

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. Council approved the decision to change auditors for 2019.

22. Proposed Budget for 2018-2019 and National Subscriptions for 2018-2019

22.1 Proposed Budget for 2018-2019

The Treasurer presented a proposed budget for 2018-2019 and included the full budget proposal in the detailed agenda. The budget for 2018/19 was for a smaller deficit of \$153k than budgeted for 2016/17 that showed a deficit of \$214k. This was despite the inclusion of additional anticipated expenditure for IUPAC100 and the cost of the commitments to the ICSU project on Women in Science. Mr. Humphris emphasized that the budget improvement is in part due to the greater understanding of the financial performance now available through the new accounting system and reporting as well as more detailed understanding of the improved performance in 2016. He noted that a key issue was the control of costs at the 2015

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Busan General Assembly and that is anticipated to be similar in São Paulo 2017 and Paris 2019.

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

Items and key Budget assumptions for Council consideration were outlined by Mr. Humphris:

- 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. He noted that we are seeking to grow other income lines to offset the US inflation of expenses.
- The proposed increase in income from Company Associates (CA) following a review of membership benefits and costs. The proposal was in the Agenda Book and 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 AMP more effectively in IUPAC activities by enabling them to be nominated for election to Associate positions in Divisions and Standing Committees irrespective of home country.

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 results 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

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pay the cost premium for this.

The short form P&L for 2016 Actual, 2017 Budget, and the proposed 2018 and 2019 budget is included in the minutes for reference.

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	2018-2019 Proposed Budget				
	2016 Actual	Budget	2017 Budget	2018 Budget	2019 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					
Database Income – DeGruyter	200,474	182,496	241,000	235,000	250,000
Database Income – Springer	-	-	29,000	24,474	20,144
Royalty Income	-	-	-	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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Council approved the proposal for the reassessment of the Company Associates program, voting by cards, >50 % of votes cast (Bylaw B2.2)

Council approved the proposal for the revision of subscriptions and benefits of the Affiliate Members Program, voting by cards.

Council approved of the Proposed Budget for 2018 – 2019, voting by cards.

To supplement new income from Company Associates, Affiliate Members and from publishing, IUPAC is 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 was 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.

Council was asked to support the due diligence in establishing a new endowment mechanism and 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.

Council unanimously approved 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. Mr. Humphris summarized the work of the National Subscription task force to date, noting the indices under consideration, the input from NAOs and the benefit of invoicing in USD in the future. He outlined the benefits expected by the final new model, such as ease of use in calculating new NAO membership applications for NS as well as keeping the current voting bands constant.

The 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 felt that further work is needed before making a

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formal final recommendation to Council. Given the timing, this would have to follow the 2017 General Assembly in Sao Paulo.

Council supported the continuation of National Subscription task force to verify all data and to recommend a new approach by July 2018 for implementation in 2019 onwards superseding those agreed in the 2019 Budget, voting by cards.

Council supported the authorization of the Executive Committee to call a special delegate conference of NAOs if the National Subscription task force proposal was rejected by Council.

Council approved the proposal to invoice in future in USD \$, voting by cards.

23. Applications for Associated Organization Status

The application for International Young Chemists Network (IYCN) to become an Associated Organization of IUPAC and endorsed by the Executive Committee of IUPAC was submitted for formal approval by the IUPAC Council. Council approved designation of the International Younger Chemists Network as an Associated Organization of the Union, unanimously by show of hands.

24. Termination of Associate Organization Status

There were no Associate Organizations in arrears at this time.

25. Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference

25.1 Evaluation Committee (EvC)

Council approved the proposed Terms of Reference for the Evaluation Committee, by show of hands. The motion was approved unanimously.

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

Council ratified the Executive Committee's decision to establish the Interdivisional Committee on Green Chemistry for Sustainable Development, by show of hands. The motion was approved unanimously.

Council approved the proposed Terms of Reference for the Interdivisional Committee on Green Chemistry for Sustainable Development, by show of hands. The motion was approved unanimously.

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approved the proposed membership as provisional until the approval of the ICGCSD by the Council at its' meeting in San Paulo.

25.3 IUPAC Statutes and Bylaws

Prof. Hartshorn presented a proposed draft that incorporated changes made by Bureau and Council since the last edition. Council approved the proposed changes and additions to the Statutes and Bylaws, unanimously by show of hands.

26. Report from the World Chemistry Leadership Meeting (WCLM)

Prof. Ober and Prof. Garelick provided Council with a brief report on the World Chemistry Leadership Meeting held Wednesday 12th July 2017. The theme of the meeting was IUPAC's role in developing interdisciplinary/collaborative work in the Chemistry community and beyond.

27. Reauthorization of Commissions

Prof. Hartshorn noted that Bylaw 3.302 requires that Council reapprove all existing Commissions at each General Assembly. Council voted and approved the reauthorization of 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. Approval of English as the Official Language of IUPAC

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.

Council approved 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, unanimously by show of hands.

29. Important Matters Referred to Council by Bureau at 48th General Assembly, Not Covered by Items on Council Agenda

No important matters were referred to Council by the Bureau that were not already covered by items on the Council Agenda.

30. Any Other Business

No additional items were brought by delegations for consideration of Council.

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31. Closing Remarks & Adjournment

Dr. Carolyn Ribes, representing the US Delegation, read an acknowledgement and congratulations to IUPAC for a successful 2017 General Assembly and thanked the volunteers of IUPAC and the Secretariat for their support during the past biennium.

Prof. Tarasova thanked the delegates for their active participation and cooperation in making the Council meeting a success. She wished the delegates a safe return journey and urged them to communicate what they had learned to their communities when they arrived home. She encouraged the Delegations to consider supporting the efforts and activities of IUPAC100 and IYPT2019.

She adjourned the Council meeting.