



INTERNATIONAL UNION OF
PURE AND APPLIED CHEMISTRY

51st IUPAC COUNCIL MEETING

Virtual 05th, 13th through 15th August 2021

MINUTES

Opening of the 51st Council Meeting –5th August 2021

1. Introductory Remarks and Finalization of Agenda

2. Approval of Minutes of 50th Council Meeting and Matters Arising

Prof. Hartshorn referred Council members to the draft minutes of the 50th Council meeting, which were included in the Agenda book for review.

Council approved the Minutes of 50th Council Meeting held in Paris, France that were included in the Agenda Book. 144/0

3. Ratification of Decisions Taken by Bureau and Executive Committee since 50th General Assembly

Prof. Hartshorn referred Council members to the Bureau and Executive Committee meeting minutes found in the Agenda Book (as noted below) for approval via Election Runner platform.

All decisions taken by the Bureau and Executive Committee through calendar year 2020, since those approved by the Council at Paris, France (Minute 3, 50th Meeting), were ratified by Council delegations. 144/0

104th Bureau (Virtual, 25th April 2020)

103rd Bureau (Paris, France, 9th and 12th July 2019)

159th Executive Committee (Virtual, 10th November 2020)

158th Executive Committee (Tokyo, Japan, 6th December 2019)

4. Announcement of Nominations for Union Officers and Bureau Members

Prof. Hartshorn reviewed the nominations for Officers and Elected Members of Bureau. He stated that the nominations for the various positions that fall vacant at the end of 2021 were received by the Secretary General at the IUPAC Secretariat by 15 May 2021. Prof. Hartshorn reviewed the Elected Members of Bureau vacancies and candidate submissions.

The nominees' CV's, Biographies, Photos and Vice President's Statements were provided in the Agenda Book for reference. Elections were held during the week, beginning 5th August 2021 and ending

Note: If any Elected Members of Bureau who are continuing, or any candidates for Bureau, are elected to a position as Officer, Division President, or Standing Committee Chair, they would not be eligible to continue or to be elected to the Bureau for the 2022-2023 biennium. Thus, there was a possibility that additional elected positions may be available.

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5. Announcement of Time of Elections and Description of Procedure

Prof. Hartshorn noted that the elections for Vice President and Treasurer and Elected Members of the Bureau would begin at **09:45** hours on 5th August 2021.

6. Applications for National Adhering Organization Status (NAO)

Prof. Hartshorn stated that there was one application for National Adhering Organization status from Kazakhstan. The Republican public association “B.A. Beremzhanov Kazakhstan Chemical Society (RPA “KChS”) applied to become a National Adhering Organization of IUPAC. The application and supporting documents were provided in the Agenda Book for Council’s review.

Council approved the application from Kazakhstan: Republican public association “B.A. Beremzhanov Kazakhstan Chemical Society (RPA “KChS”) as a National Adhering Organization effective 1 January 2022.

Prof. Brett then adourned the Opening Session of Council and opened the voting for the first round of the Vice President and Treasurer elections via Election Runner and by delegation vote.

Council Meeting Day 1 - Friday 13th August 2021

08:00 – 11:00 EDT (UTC-4)

7. Statutory Report of President on State of the Union

Prof. Brett gave an overview of the challenges and accomplishments during the last biennium. It included sections on IUPAC committees and their activities, on governance and virtual meetings of council, conferences, publications and digital standards, legacy activities of the IUPAC centenary/IYPT and the forthcoming IYBSSD, international organisations, the Centenary Endowment Fund and new standing committees. The detailed report was provided in the Council Agenda Book.

8. Vice President’s Critical Assessment

Prof. Martínez provided an overview of the Vice President’s critical assessment, stating that it examined IUPAC’s activities, priorities, and opportunities in the context of changes experienced during the current biennium. He described the rationale and convenience of the organizational changes proposed by Review Group, which were endorsed by the Executive Committee earlier in 2021. He stressed the need for a more agile decision-making process and clearer scientific priorities which were articulated in the survey results by both the Review Group and the Evaluation Committee. His critical assessment discussed both the current and future plans to advance the IUPAC digital agenda and stressed that IUPAC should take the lead in the digital space. Finally, he discussed specific initiatives to improve our internal and external communication and how to better serve our stakeholders and the chemistry

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community. The Vice President's Critical Assessment full report was provided in the Agenda Book.

9. Report of Secretary General

Prof. Hartshorn reported on the operation of the Secretariat and that in a very challenging period it continued to function and support IUPAC activities. He highlighted the Global Women's Breakfast and the Periodic Table Challenge that required significant support and thanked both the volunteers and staff for their effort. He then discussed the election process status and the need to balance the significant effort in the Secretariat to manage the process and administrative activities required upon turnover of membership. He summarized the status of the IUPAC-endorsed conferences during 2020 and the impact of Covid-19 as well as the emphasis on gender balance. He also articulated the challenges and effect on content for Pure and Applied Chemistry. Regarding the IUPAC project submission, he reviewed the 2020 on initiatives taken to advance the work of the Union. The full report to Council was in the Agenda Book.

10. Financial Reports

Mr. Humphris discussed the financial reports of the Union for the 2020-2021 biennium.

10.1. Biennial Report of Treasurer

The 2020/21 biennium is an extraordinary period for IUPAC. The Covid pandemic has meant that IUPAC has had to adjust to functioning virtually. In this regard the proposal to reduce operating budgets for this biennium at the Paris General Assembly to encourage virtual administrative activity, although unpopular, was timely. The organisation has had to learn to operate this way and exploit the advantages this can bring – more regular meetings, less time-consuming travel.

As you would expect travel and subsistence expenditure in 2020 was very low (just \$7,761 v Budget \$292,029) and we can expect to see a significant underspend in 2021 given the virtual Congress and General Assembly. This is not however without its downsides. Bureau has recognised the issues that also result from the lack of face-to-face contact. New project activity is very low and a concern, a point I will return to in the budget proposal.

Allowing for the gains booked for the investment portfolio, the 2020 showed an operating profit of \$222,796 (v budget -\$9003) and we expect 2021 to also show an operating profit given the continuing restrictions arising from the Covid pandemic. It has allowed us to pay off our borrowing. As you will see below the Union's Financial Portfolio has performed strongly (now returned to above \$5m) through the pandemic and current economic rebound.

It is very important however that Council understands however that the current financial performance completely masks the underlying problem that IUPAC has running structural deficits. The biennium 2018/19 showed an operating loss of \$431,047 net of portfolio gains/losses largely funded by borrowing. IUPAC owed \$336,784 on its line of credit in December 2019. The line of credit was designed to help smooth cash flow, not to fund

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operations and should zero at year end. Regular deficits are unsustainable in the medium to longer term. It is clear that we have to find ways to deliver science relevant to this digital age, in ways that reduce the costs of complexity in the organisation, to demonstrate efficient use of resources to be able to attract funding from new donors.

This is the importance of the current Organisational Review. It is not about organigrams. There is a need to refocus our work on data, nomenclature, and standards in ways that reflect the multidisciplinary nature of the problems facing the world and deliver this more effectively digitally to those who need to use it. It is an opportunity to rethink what we do and how we do it, who we work with and also how we gain value from it.

Council also has the opportunity to approve the proposals for an Endowment Board following approval of Bureau of the boards operational standing orders. A key step in enabling this has been a significant piece of work to correct IUPAC registered tax status in the US following discovery that this was incorrectly registered in the 1950s. Donations can now be tax deductible for those with a taxable presence in the US making it far more attractive to support IUPAC. Individuals can now donate easily through the Guidestar platform (must sign in due to financial disclosures in profiles) here: <https://www.nfggive.com/guidestar/98-6000903> and donations can be available from Amazon purchases (you shop, they donate) through the AmazonSmile program of matched giving in countries where IUPAC is listed as a potential beneficiary.

It has been a privilege to serve IUPAC as Treasurer and before that as Acting Secretary General. I suspect I will still be around in some capacity remembering that IUPAC is like the Eagles “Hotel California” – you can check in but you can never leave!

10.2. Report of Finance Committee

During 2020/21 the Finance Committee met virtually each quarter and with no face-to-face meetings possible. Formal Annual Meetings were held on 9th March 2020 on 23rd March 2021 The minutes of the FC 2020 meeting were in the Agenda Book and posted on the FC website link: https://iupac.org/wp-content/uploads/2021/07/FC_Approved_Minutes_Signed_23March2021.pdf

During this period it has supported the change of banking arrangements in the USA to SunTrust whilst retaining the services of the Bray Harris Group/Raymond James as preferred financial advisors.

Through its work it recommended a revised policy for Travel and Expenses subsequently approved by Bureau and developed the standing orders for the Endowment Board to ensure clarity for the complementary roles of the new board and the Finance Committee. It has maintained an active management discussion with the financial advisors agreeing adjustments to the portfolio that have enhanced portfolio growth.

The Finance Committee regularly reviewed the financial performance of the Union and received the audits for 2019 and 2020 from the new auditors McMillan Pate & Company. The new auditors have provided useful insights into the financial management of IUPAC whilst giving the annual accounts a clean bill of health. The Audited Financial Statement is in the

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Agenda Book and also posted in the Finance Committee page at the link: <https://iupac.org/wp-content/uploads/2021/07/2020-IUPAC-Financial-Statements.pdf>.

In March this year the Finance Committee recommended the proposed budget for approval of first Bureau and now to be presented to Council. The Finance Committee however continues to press for a balanced budget.

10.3. Accounts for 2019/2020

The full audited accounts for 2019/20 were included in the Agenda Book. Focusing on the surplus of \$222,796 (v budget -\$9003) in 2020, the Profit and Loss key variances were:

- NAO income below plan following the loss of Brazil and Pakistan offsetting the gain of Singapore.
- Growth in income from CA's ahead of budget by \$6500 at \$31,500 – a significant turnaround with scope to improve through increased engagement with industry.
- AMP income from Chemical Societies (Coordinated) is under budget by \$10k and over budget by \$3,300 for direct IUPAC AMP. AMP interest has been slack during covid as a key benefit is a discount for IUPAC conferences most of which were being postponed or held virtually.
- Continued pressure on publishing income. With a lack of conference reports steps have been needed to enrich the content of Pure and Applied Chemistry
- Net Interest and Dividends from investments were low and under consideration by the Finance Committee. The Investment Portfolio itself recovered well from the financial downturn in early 2020 rising to \$5.0m for the first time in a number of years.
- Our Secretariat and Administrative costs were in budget overall. General and Administration includes non-secretarial expenses : IT investment for virtual working, project expenditure of \$15.5k, marketing and design costs of \$32k in support of 2019 Centenary legacy projects.
- For the Secretariat it was an exceptionally difficult year for office operations/home working.
- The operating profitability is solely driven however by the lack of Travel and Subsistence expenditure.

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IUPAC Income Statement - 2020 Summary					
	December 2019 Actual	December 2020 Actual	2020 Annual Budget	2020 Actual vs Budget Variance	
Income					
Program Income	\$ 970,729	\$ 1,088,284	\$ 1,137,691	(49,407)	
Direct Public Support	48,019	27,000	36,000	(9,000)	
Investments	829,310	723,598	91,000	632,598	
Merchandise Revenue - Pins	249	167	0	167	
Total Income	1,894,568	1,839,049	1,264,691	574,358	
Gross Profit	\$ 1,894,568	\$ 1,839,049	\$ 1,264,691	574,358	
Expense					
Awards, Grants & Contribution	46,566	21,955	0	(21,955)	
Fixed Costs - Salaries & Benefits	564,327	567,187	614,965	47,778	
Lease, Insurance & Bank Fees	93,004	83,780	92,200	8,420	
General & Administrative Expenses	135,313	97,818	83,615	(14,203)	
Contracted Services	89,854	126,035	98,950	(27,085)	
Depreciation Expense	53,010	53,064	52,120	(944)	
Other Expenses	29,501	28,479	29,815	1,336	
Travel & Meetings	572,870	7,761	292,029	284,268	
Miscellaneous Expense	3	(1,948)	0	1,948	
Total Expenses	\$ 1,584,448	\$ 984,132	\$ 1,263,694	279,562	
Net Ordinary Income / (Loss)	\$ 310,121	\$ 854,917	\$ 997	853,920	
Other Income & Expenses					
Other (Income)	(9,985)	(95,643)	0	95,643	
Other Expense	15,029	4,166	10,000	5,834	
Net Other Income / Expense	\$ 5,044	\$ (91,477)	\$ 10,000	101,477	
Nominal Income / (Loss) for the period	\$ 305,078	\$ 946,394	\$ (9,003)	955,397	

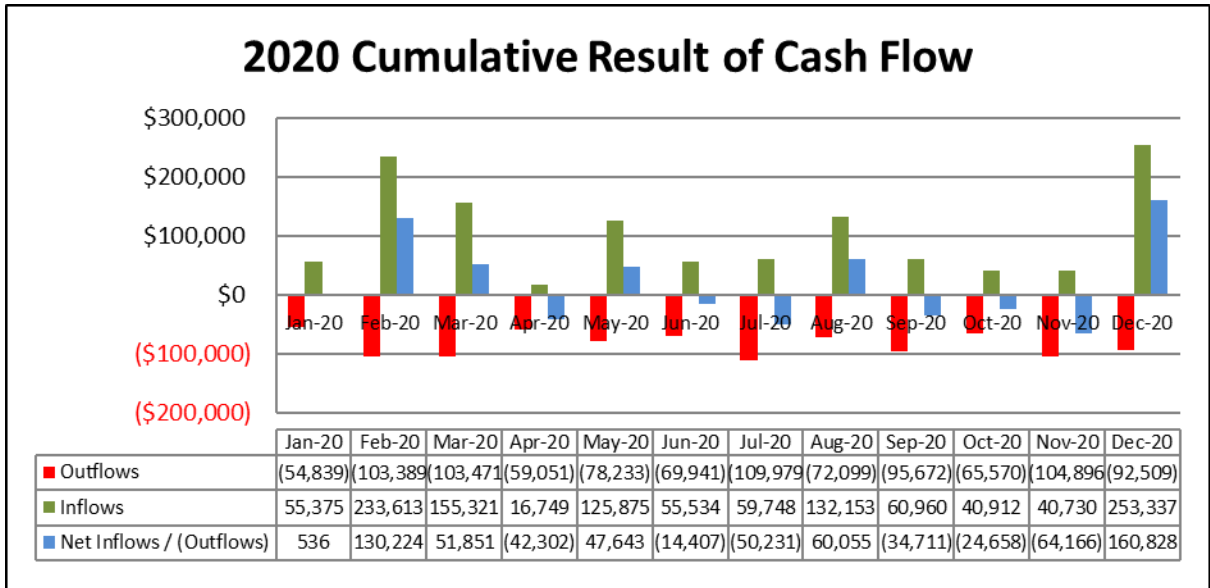
The Balance Sheet showed:

- Healthy end year cash position (\$301k)
- Low receivables compared to previous years.
- A Buoyant investment Portfolio
- The Line of Credit (borrowing) reduced, currently to \$241k. The Line of Credit was set up to help balance cash flows through the year. In recent years it has become permanent borrowing to fund our deficits – not a healthy state of affairs. We aimed to pay this

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borrowing down completely in 2021 and achieved this in May this year. This will maximize flexibility through the next biennium.

- Cash flow benefited from a USA Payroll Protection Loan (\$95,500) which converted to a grant given that we retained all our Secretariat staff.
- The Cash Flow showed the unpredictable nature of our cash inflows and outflows the primary reason for our line of credit:



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IUPAC Audited Balance Sheet			
As of 31 December 2020			
	Dec-19	Dec-20	2019 / 2020 Variance
ASSETS			
Current Assets			
Checking/Savings	314,912	405,672	90,760
Accounts Receivable	2,490	113,355	110,865
Other Current Assets			
Undeposited Funds	313	0	(313)
Sales Tax Receivable	2,588	961	(1,627)
Other Current Receivables	1	0	(1)
Prepaid Expenses			
Prepaid Insurance	1,612	1,704	91
Other Prepaid Expenses	3,960	9,574	5,614
Prepaid General Assembly Exp	0	0	0
Total Prepaid Expenses	5,572	11,278	5,706
Total Other Current Assets	8,475	12,240	3,765
Total Current Assets	325,877	531,267	205,390
Fixed Assets	129,102	87,784	(41,318)
Other Assets			
Security Deposits	3,565	3,565	0
Marketable Securities	4,238,761	4,991,959	753,198
Total Other Assets	4,242,327	4,995,524	753,198
TOTAL ASSETS	\$ 4,697,305	\$ 5,614,575	\$ 917,269
LIABILITIES & EQUITY			
Liabilities			
Current Liabilities			
Accounts Payable	46,863	48,778	1,915
Credit Cards	6,906	13,015	6,109
Other Current Liabilities			
Payroll Liabilities	47,818	54,953	7,135
Unearned Membership Income	65,371	79,406	14,035
Unearned Publication Inc	525	174	(351)
Deferred Rent	11,667	4,702	(6,965)
Short-term Notes Payable	336,784	0	(336,784)
Raymond James Margin Account Loan	0	240,762	240,762
Due to IYCN	5,051	2,490	(2,561)
Other Current Liabilities	22	30	8
Total Other Current Liabilities	467,238	382,517	(84,721)
Total Current Liabilities	521,006	444,310	(76,697)
Total Liabilities	521,006	444,310	(76,697)
Equity			
Net Asset w/ Donor Restriction	204,357	204,357	0
Net Asset w/o Donor Restriction	108,761	120,761	12,000
Unrestricted Net Assets	3,558,103	3,898,753	340,650
Nominal income / (loss) for the period	305,078	946,394	641,316
Total Equity	4,176,299	5,170,265	993,966
TOTAL LIABILITIES & EQUITY	\$ 4,697,305	\$ 5,614,575	\$ 917,269
2020 Audit Figures			

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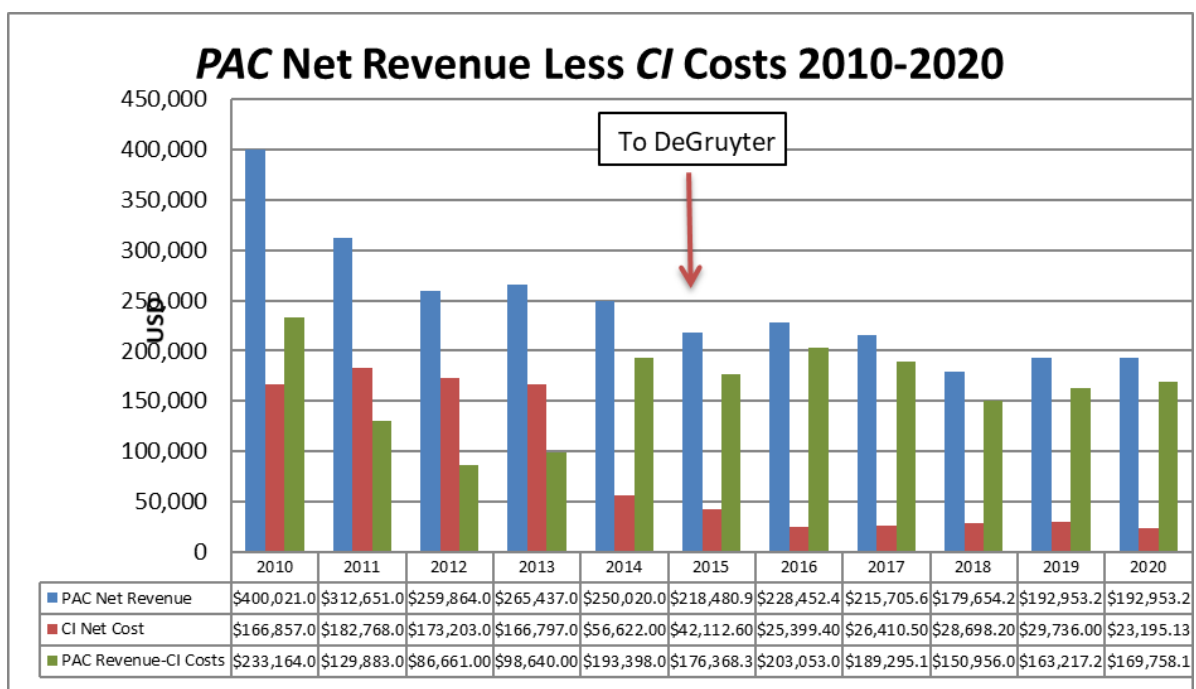
10.4. National Adhering Organizations in Arrears

Three National Adhering Organizations had not paid the 2020 National Subscriptions at the time of Council meeting. Together with the Fee Charges to IUPAC, the outstanding amount (Loss) is \$15,225.82.

NAO Country 2020	2020 Paid (USD)	2020 Due (USD)	Loss from Fee Charges
Chile		\$8,229.00	
Jordan		\$1,000.00	
Turkey		\$6,415.00	
Total	\$824,537.82	\$839,612.00	-\$418.18
Budget v. Actual (Loss)		\$15,225.82	

10.5. Other Income

Publishing income remains stable but under pressure due to the journal market conditions. The lack of conferences has put pressure on *Pure and Applied Chemistry* content. From January 2022 *Chemistry International* will be available solely online in a page turning format leaving only costs for design, layout and copy editing. It will be freely available to attract the widest possible global readership. IUPAC is working with DeGruyter to evaluate the development of *CI* Digital as a live streaming news magazine.



The Affiliate Members Program variance against plan was noted earlier. 2020 was a difficult year for the Chemistry Societies promoting this given the key benefit of conference discounts was largely irrelevant in 2020. Membership directly through IUPAC has held up.

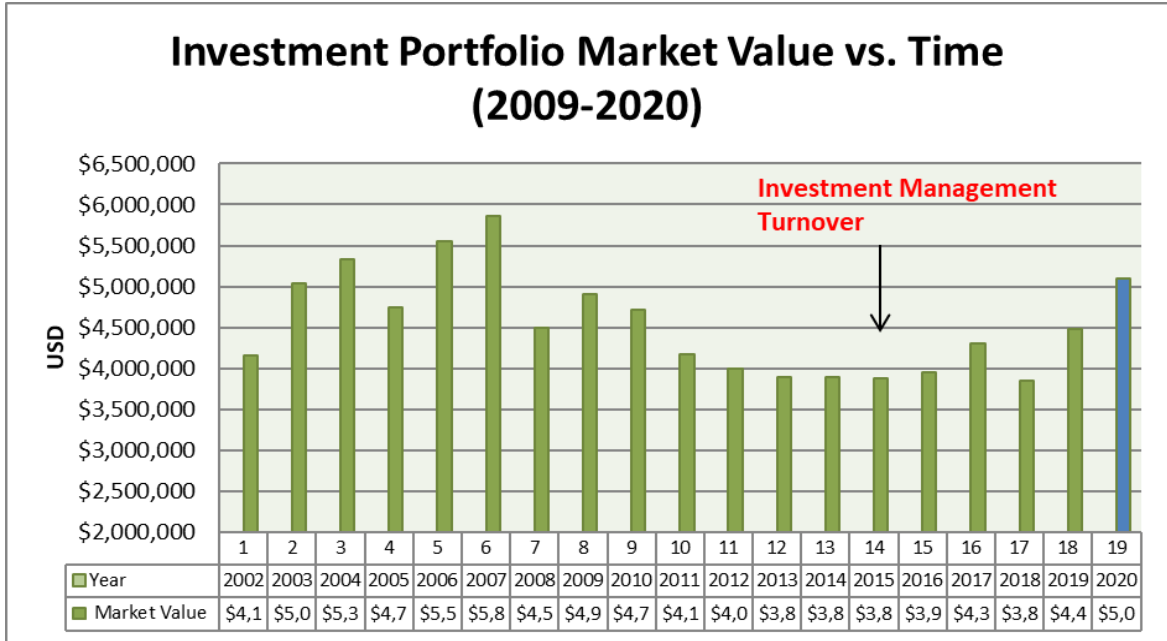
For Company Associates, all members now were paying a subscription of \$2500 so income well up from 2017 following the GA decision in Sao Paulo. He stated that there is still much

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work to do to keep members and gain new ones at a time when companies are focused on pandemic survival.

10.6 Investment Portfolio

Mr. Humphris reviewed the historical levels of the IUPAC Investment portfolio. He stated that investment portfolio has recovered and is approaching the historic levels back in 2007 as result of active investment management advice from our external advisors. At the end of June 2020, the total market value (MV) was \$5.6M net of fees.



11. Budget Proposal

Mr. Humphris discussed the overall rationale for development of the 2022-2023 Budget

11.1. Proposed Budget for 2022-2023

The proposed budget supported by Bureau was included in the Agenda Book. Mr. Humphris discussed the rational behind the development of the budget which results in a deficit of \$265,378 across the biennium based on the following assumptions:

- IUPAC emerged from 2021 in a strong cash position with material underspend of 2020/21 budgets.
- NAO subscription income is driven by the current formula with no further membership changes. The Company Associate and AMP subscriptions reflect the recent experience.
- IUPAC builds on the experience of virtual meetings and extend the reduction in operations costs applied to the Divisions 2020/21 and to the Standing Committees.

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- IUPAC sees a return to more ‘normal’ travel. He noted that this is probably an optimistic assumption as the outlook for international travel, future international travel costs and the willingness of the IUPAC community to travel remain highly uncertain.
- Continued pressure on publishing income and the move to *CI* online and away from print.
- The organization is unchanged during this biennium by recommendations of the Organization Review. Changes come in the next biennium. Any new committees meet virtually.
- The Netherlands General Assembly 2023 is held face to face but at a more traditional level of cost (The Paris GA included the Centenary and IYPT2019 celebrations).
- Allowance for a CHEMRAWN budget has been restored.
- Allowance for a first meeting of the Centenary Endowment Board as it gets underway (the plan is for the board to be self-funding once underway).
- That there will be pressure for the new Bureau and the new Executive Committee to meet in 2022 as this was not possible in 2021.
- We need to budget for a smooth handover of Executive Director position in 2022 as Dr. Soby will be retiring in Q3 2022.
- As a result of the low project activity in 2020/2021 the project budget was spread into 2022. This effectively moves some of the benefit of an underspend in 2021 into 2022.

Council approved the recommended 2022-2023 Budget

11.2. National Subscriptions for 2022-2023 (already approved via NSTF 2018)

National subscriptions were given in the Agenda Book calculated as approved via NSTF 2018. Singapore, approved by Council in 2019 is added to the National Subscription total.

12. Establishment of the Centenary Endowment Fund

Mr. Humphris reviewed the current statuts of establishing the new Centary Endowment Fund stating that the purpose of the fund will be to finance IUPAC projects and activities in support of the following areas:

- The establishment of IUPAC nomenclature and standards in the digital domain to enable advances in Big Data relevant to chemistry and chemistry related research and development,
- IUPAC’s unique international role in the critical evaluation of chemical data and establishment of standards that will be necessary to underpin the achievement of Sustainable Development and the UN millennium goals,

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- Chemistry Education and Capacity Building in less developed countries to promote their economic development whilst helping to ensure the safe and environmentally sensitive application of chemical technologies in these countries.

The Centenary Endowment Fund should provide a mechanism through which Fund Donors could support and engage in IUPAC's international work into its second century of existence.

The initial objective of the Fund is to provide endowment investment earnings of at least \$100,000 per annum for IUPAC activities consistent with the Fund Mission, net of the operational costs of the fund. An objective is that the Fund will be self-financing.

The proposal was to create an external board with fund raising experience. The Centenary Endowment Board will be responsible for and will administer IUPAC's fund raising, the development of the Fund and recommending disbursement in accordance with the Fund Mission and, where relevant, specific designations by Donors. The Board will work with the Finance Committee and its advisors to ensure the optimum investment of donated funds.

The Terms of Reference for the Centenary Endowment Board and its modus operandi were in the Agenda Book. Council's approval was sought after which recruitment of directors can commence.

Council approved the future appointment of the Centenary Endowment Fund Board of Directors including external Directors by the Executive Committee. Council also gave approval to the Executive Committee to progress the formation of the fund and its guiding documents.

13. Bids for and Voting on Location and Dates of 54th General Assembly and 51st World Chemistry Congress (2027)

Prof. Hartshorn announced that three bids for the GA and WCC in 2027 were received and information was in the Agenda Book for review. He noted that the vote would follow the pattern of the elections used for the Officers of the Union (Bylaw B 2.23) Representatives from the National Research Council, (Montreal), the joint Czech Republic-Slovakia (Prague) and the Russian Federation (Moscow) presented the bids to Council.

Council approved the bid from Canada for hosting the 51st World Chemistry Congress and 54th General Assembly in Montreal, Canada.

The Opening Council Meeting was Adjourned

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Council Meeting Day 2 - Saturday 14th August 2021

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

Prof. Hartshorn discussed the changes to the Terms of Reference for the Interdivisional Committee on Green Chemistry for Sustainable Development (ICGCSD)

14.1 Modification to Terms of Reference of ICGCSD to include National Representatives as below:

Proposed Composition and Terms of Office

- (i) There shall be a standing Interdivisional Committee on Green Chemistry for Sustainable Development, composed of a Chair, a Secretary, up to three Titular Members and up to three Associate Members as a “core” membership, up to eight National Representatives, and one Representative Member from each interested Division and Standing Committee.
- (ii) The President, in consultation with the Executive Committee, shall appoint the Chair, Secretary, Titular Members, Associate Members, and National Representatives. The ICGCSD, Division Presidents and Standing Committee Chairs may propose names of persons suitably qualified for appointment and should conduct elections according to the pattern for Divisions, in order to inform the advice that they give to the President.
- (iii) The period of service of Titular Members, Associate Members and National Representatives shall be two years, renewable for a further term of two years. The period of service of Representatives from the Divisions and Standing Committees shall be two years, subject to re-nomination and reappointment to a maximum period of service of eight years.

Council approved the proposed modification to the ToR to allow up to 8 National Representatives to the membership of ICGCSD.

15. Composition and Terms of Reference of New Standing Committees

Prof. Hartshorn introduced the two new Standing Committees which required Council approval.

15.1. Centenary Endowment Board (CEB)

The Proposed Composition and Terms of Reference of the Centenary Endowment Board, “CEB”, were given in the Agenda Book.

Council approved the Composition and Terms of Reference of the Centenary Endowment Board.

15.2. Committee on Ethics, Diversity, Equity and Inclusion (CEDEI)

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The Proposed Composition and Terms of Reference of the Committee on Ethics, Diversity, Equity and Inclusion were in the Agenda Book.

Council approved the Composition and Terms of Reference of the Committee on Ethics, Diversity, Equity and Inclusion.

16. Proposals for Changes to the Statutes and By-Laws of the Union

There were no proposals for Changes to the Statutes and Bylaws received from National Adhering Organizations for changes to the Statutes and By-Laws of the Union.

17. **Organizational Structure Review Group Report and Actions Taken**

Prof. Brett provided a detailed summary of the status of the Organizational Structure Review Group and recalled the main objectives of this effort.

Council approved a motion at the 2019 IUPAC General Assembly that a working group be established to undertake a complete review of the organizational structure of IUPAC. The Organizational Structure Review Group includes Dr. Mark C. Cesa (chair), Prof. Javier Garcia-Martinez (IUPAC Vice President), Prof. Ito Chao, Prof. Dr. Michael Droescher, Prof. Lori Ferrins, and Prof. Zhigang Shuai.

The main objectives were:

- Recommending directions for the scientific work of the union going forward, and how to structure the Union to achieve its scientific objectives.
- Recommending ways of working that would reduce costs and improve efficiency.

The Review Group carried out its extensive work during 2020, which included conducting a wide-ranging survey of stakeholders, of scientific and financial aspects and emerging trends and advances in the chemical sciences. It submitted its report, with 4 appendices, to the Executive Committee in November 2020, who discussed and approved it, and the final report, dated 9th December 2020, was circulated to Bureau in December 2020.

In January 2021, two virtual Bureau meetings were held, on 9th and 23rd January 2021, to discuss the recommendations made in the report and how they could be implemented, if that were the wish of Bureau and decision of Council. It was decided to concentrate on the proposed alterations to governance structure and whether these would lead to greater agility and be effective in adapting and reacting rapidly to change. The Elected Members of Bureau on the one hand, and the Division Presidents (DPs)/Standing Committee Chairs (SCCs) on the other, discussed their points of view between the Bureau Meetings. The proposed change in governance structure involves replacing Bureau with an Executive Board (EB) and a Science Board (SB).

He stated that it was necessary to decide in January whether changes to Statutes and Bylaws would be proposed to Council at its meeting in August 2021, since the deadline for receipt of proposals for such changes was mid-February 2021. It was concluded that, given the need for extensive internal discussion and consensus within Bureau, that no proposals from Bureau for changes to the Statutes and Bylaws (S&B) regarding governance structure could be made at that time.

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The internal discussions were done by dividing the Bureau into three working Groups, each comprising Elected Members and DPs/SCCs. Following this, the coordinators of the three Working Groups prepared a briefing discussion document regarding alterations to the governance structure that was discussed with Bureau members in videoconferences in June 2021. The final version of the document, together with a cover letter outlining the opinion of the Executive Committee and crucial questions to be considered was sent to Council members in early July 2021. Three videoconference engagement sessions with NAOs have been arranged to take place during the Montreal General Assembly, on 9th, 10th and 11th August at different times of day/night, given the wide span of time zones of NAO delegates. The answers to the important questions on governance structure and composition of the EB and SB etc. and the resulting suggestions will enable a proposal for changes to the Statutes and Bylaws to be formulated and discussed, the final version being ready before the end of 2021.

This proposal for changes to the S&B to implement the new governance structure will then be the basis of a request from the Bureau Chair to the Secretary General to call a Special Council Meeting. Following this request, the President will call a special Council meeting in 2022 in order to vote on the necessary changes to the Statutes and Bylaws.

18. Reports of Division Presidents (Written/video reports were received and 5 minutes allowed for questions and discussion on each)

Prof. Richard Hartshorn introduced the reports of the Division Committees and solicited questions from Council. None were recorded.

18.1. Division I – Physical and Biophysical Chemistry	Dr. Timothy Wallington
18.2. Division II – Inorganic Chemistry	Prof. Lars Ohrstrom
18.3. Division III – Organic and Biomolecular Chemistry	Prof. Nikolay Nifantiev
18.4. Division IV – Polymer Division	Prof. Christine Luscombe
18.5. Division V – Analytical Chemistry	Dr. Zoltan Mester
18.6. Division VI – Chemistry and the Environment	Prof. Hemda Garelick
18.7. Division VII – Chemistry and Human Health	Prof. Rita Cornelis
18.8. Division VIII – Chemical Nomenclature and Structure Representation	Prof. Alan Hutton

19. Reports of Standing Committee Chairs (Written/video reports were received and 5 minutes was allowed for questions and discussion on each)

Prof. Brett introduced the reports of the Standing Committees and solicited questions from Council. None were recorded.

19.1. Committee on Chemistry Education (CCE)	Prof. Jan Apotheke
19.2. CHEMRAWN Committee	Prof. Francesca Kerton
19.3. Committee on Chemistry and Industry (COCI)	Prof. Anna Makarova

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- 19.4. Committee on Publications and Cheminformatics Data Standards
(CPCDS) Ms. Leah McEwen
- 19.5. Interdivisional Committee on Terminology, Nomenclature and Symbols
(ICTNS) Prof. Jurgen Stohner
- 19.6. Interdivisional Committee on Green Chemistry for Sustainable Development
(ICGCSD) Prof. Pietro Tundo
- 19.7. Project Committee (PC) Prof. Jan Reedijk
- 19.8. Evaluation Committee (EvC) Prof. Javier García-Martínez
20. Adoption of Recommendations on Nomenclature and Symbols

Council formally adopted 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 2019 through August 2021.

21. Presentation of IUPAC Distinguished Service awards

The following Distinguished Service awards were presented during the Council meeting:

- Prof. Qi-feng Zhou, VP/P/PP 2016-2021
 - Mr. Colin Humphris, Treasurer 2016-2021
 - Dr. Timothy Wallington, President Division I 2020-2021
 - Prof. Lars R. Ohrström, President Division II, 2018-2021
 - Prof. Nikolay E. Nifantiev, President Division III, 2020-2021
 - Dr. Zoltan Mester, President Division V, 2018-2021
 - Prof. Hemda Garelick, President Division VII, 2020-2021
 - Professor Rita Cornelis, President Division VIII, 2018-2021
 - Prof. Alan Hutton, President Division VIII, 2018-2021
- Prof. Jan Apotheker, Chair, Committee on Chemistry Education, 2018-2021

Meeting was adjourned at 20:00

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22. Prof. Hartshorn Announced of results of elections of Officers (Vice President and Treasurer) and Elected Members of Bureau that were run beginning 05th August and 15th August.

Council elected Prof. Ehud Keinan (Israel) as Vice President 2022-2023 and President-Elect

Council elected Prof. Wolfram Koch (Germany) as Treasurer 2022-2023

Council elected the following members of Bureau for the term 2022-2025:

- Prof. Hemda Garelick (UK)
- Dr. Laura McConnell (US)
- Dr. Zoltan Mester (Canada)
- Prof. Ken Sakai (Japan)
- Prof. Zhigang Shuai (China/Beijing)

23. Plans for the 52nd General Assembly and 49th Congress in 2023 (The Hague, Netherlands)

[Prof. Floris Rutjes, Chair of the 2023 Organizing Committee]

Prof. Rutjes provided an update to the Council on the status and plans for IUPAC2023.

24. IUPAC100 Legacy Activities

Prof. Javier Garcia Martinez discussed the IUPAC legacy activities that were continuing well after 2019 and that the International Year of the Periodic Table and the IUPAC Centenary (IUPAC100) provided the organization with great visibility and have contributed to improving IUPAC's public image and global outreach. Four very specific online or hybrid initiatives that were launched during 2019 have been so successful that now were ongoing IUPAC activities prominently featured on our website. These were The Periodic Table Challenge, The Global Women Breakfast, The Top Ten Emerging Technologies in Chemistry, and ChemVoices. He stated that all of them help us reach different audiences and communicate what value IUPAC brings for the chemistry community in an effective and engaging manner.

25. WCLM 2021 Program

Prof. Christopher Ober introduced the topic of the 2021 WCLM program and topic of "The Future of Chemistry in the World of Artificial Intelligence". He credited the WCLM organizer team who worked on the WCLM program and logistics for many months. Given the virtual nature of the World Chemistry Congress 2021, it presented an unusual opportunity to engage the world in this WCLM. The impact of machine learning on chemistry is already enormous and is growing. IUPAC is influencing the growth of AI and other digital disciplines in chemistry through the work of its volunteers and this program will highlight new developments and opportunities in this chemical area for GA and WCC participants and the hybrid meeting being hosted from Montreal.

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The WCLM 2021 will be an experiment to make this a truly global event over a 24 hour period in which the program begins Tuesday morning from Montreal (August 17) with a plenary talk by Yoshua Bengio (Montreal), then is passed to a virtual panel discussion in Malaysia (next WCC/GA host), then moves virtually to a follow-up panel discussion hosted by the Netherlands (future WCC/GA host) and will return to Montreal on Wednesday morning (August 18) for a panel discussion by the original speakers who will represent industry, government and academia. He stated that a concluding talk by Jeremy Frey (Southampton) on the impact of AI on chemistry and the role of IUPAC in advancing the field would wrap up the WCLM 2021.

He expected that the WCLM may also serve as a template for future global events that IUPAC may consider organizing. In addition, a report will be submitted to *Chemistry International*.

26. Applications for Associated Organization Status

Prof. Hartshorn stated that no new applications for Associate Organization Status were received.

26.1. Termination of Associated Organizations

All Associated Organizations were current, and no terminations were required of Council.

27. Associate National Adhering Organizations (ANAO)

Prof. Brett noted that the Associate National Adhering Organization program is currently under review. The Kenya Chemical Society has completed the four-year term as ANAO and did not remit payment during the four years. No NAO application was received.

28. Proposals Formally Received from National Adhering Organizations

Prof. Brett stated that no proposals were received from the National Adhering Organizations.

29. Approval of Division Arrangements

Prof. Hartshorn stated that the Divisional rules were approved at the 50th Council meeting. No further additions/edits have been received by Bureau.

29.1. Approval of Elected Officers of Division Committees

The Division Committee Officers list was revised 29 July 2021 and was included in the latest version of the Detailed Agenda dated 29 July 2021.

Council unanimously approved the results from elections of Division Committee Officers.

Elections for Divisional Titular Members have been completed.

The proposed 2022-2023 Division Rosters were in the Agenda Book for reference. (it was noted that Division I Secretary was missing in earlier version).

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Council received the results from elections of Titular Members of the Division Committees.

29.2. Reauthorization of Commissions

Prof. Hartshorn stated that Bylaw 3.32 requires that Council reapprove all existing Commissions at each General Assembly.

Council reauthorized 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).

30. Motion for English Language as the official language of IUPAC

Prof. Hartshorn discussed that Statute 5.7.5 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 São Paulo, Brazil in the year 2017, 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 2022-2025.

31. Important Matters Referred to Council by Bureau at 51st General Assembly, Not Covered by Items on Council Agenda

Prof. Hartshorn noted that all items from the Bureau had been addressed through the Agenda.

32. Any Other Business

Prof. Brett noted that there was no other business for Council and acknowledged the support of the National Adhering Organizations, volunteers' service and the support of the IUPAC Secretariat during his term as President. He then adjourned the 51st Council meeting.