

AC5

Resolution on the International Association of Physics Students (IAPS) to become an Affiliated Commission of IUPAP

Considering the request by the International Association of Physics Students (IAPS) received on September 7th, 2020 to become an Affiliated Commission of IUPAP, and considering the decision taken by the Executive Council in October 2020 to accept IAPS as an acting Affiliated Commission, pending on the ratification by the IUPAP General Assembly, the IUPAP 2021 General Assembly resolves to accept the International Association of Physics Students as an Affiliated Commission of IUPAP (AC5)

AC6

The IUPAP approves the creation of the Inter-Union Commission on the History and Philosophy of Physics as established in the Memorandum of Understanding signed by the presidents of the IUPAP and of the Division of History of Science and Technology of the International Union of History and Philosophy of Science and Technology (IUHPST/DHST). It also approves that this Commission become an IUPAP Affiliated Commission on the History and Philosophy of Physics (AC6).

AC6 members

The IUPAP approves that:

- Roberto Lalli, PhD, Max-Planck-Institut für Wissenschaftsgeschichte, Berlin, Germany
- Gisela Mateos, Centro de Investigaciones Interdisciplinarias en Ciencias y Humanidades, UNAM, Mexico DF, Mexico
- Joseph D. Martin, Durham University, Department of History, Durham, UK

be the first representatives of IUPAP at the newly created Inter-Union Commission on the History and Philosophy of Physics. The names of the IUPAP's representatives on this Inter-Union Commission will be revised at the IUPAP's General Assemblies.

WG Ethics

It is resolved that an IUPAP Working Group on Ethics be formed with the following mission:

1. To survey international ethics standards across, societies, journals, and funding agencies, including hiring practices.
2. To consider these accumulated data to develop a set of international ethics standards.

This mission would first be applied to ethics concerning traditional scientific misconduct, including plagiarism, misuse of public funds, fabrication or misrepresentation of data, and accuracy in self representation.

Later, in collaboration with WG-5, the mission would include ethical standards to prevent and establish lines of actions in cases of discrimination, harassment and sexual misconduct.

WG Quantum Science and Technology

Recommendation for an IUPAP resolution to establish a working group in the emerging field of Quantum

U. S. Liaison Committee for IUPAP

Quantum Information Science and Technology (QIST) has become a forefront research area in modern physics and intersections with other domain sciences. A number of countries and unions, like the European Union, are investing the equivalent of billions of dollars in fundamental and applied research in QIST with the ultimate goal of tapping the potential for transformational advancements impacting economic growth spawned by the field in areas of quantum computing, metrology, networking and sensing to mention a few.

The research activity of QIST spans a number of subfields of physics, most notably AMO physics and condensed matter physics. In addition, the research effort cuts across computer science, mathematical, applied physics and engineering disciplines. In recognition of this, organizations like the APS have created new sub-units to provide a dedicated home for the QIST rapidly expanding research.

Universities target the hiring of faculty, and advertise the strength of their activity, in a field designated simply as “Quantum.” The public is excited about the Second Quantum Revolution, about Quantum 2.0, and quantum advancements at every sector from biomedical imaging to cybersecurity and finance. These advancements are related to the non-classical aspects of quantum mechanics—features like superposition and entanglement and the achievement of quantum advantage through the use of squeezed states, spin-statistical correlations, and the like. While these features have been part of QM essentially from its birth, today’s technologies make their study and exploitation possible in novel and profound ways; the promise of technological opportunities and outcomes is real and present.

In light of all of this, we propose that IUPAP establish a working group to study whether a new commission should be created, devoted to QIST, or possibly more broadly to the emerging field of Quantum, in the sense mentioned above.

WG Women in Physics—revised mandate

The IUPAP renovates the mandate of the Working Group on Women in Physics to include:

- to survey/monitor the situation and suggest means to increase gender diversity and inclusion in the practice of physics
- to keep an active network of groups across the world that can monitor the situation at the national and regional levels and promote and take actions to increase gender diversity and inclusion across countries and regions
- to organize a triennial international conference on the matter
- to promote the Waterloo Charter on Gender Diversity and Inclusion and contribute to the continuous updating and dissemination of the list of policies, action and

recommendations pertaining to affirmative action, career paths and institutional policies that are spelled out in the Charter's [Supporting Information](#).

- To cooperate with commissions, affiliated commissions, working groups and IUPAP members to increase the gender diversity of the pool of candidates for awards, commission membership and to be invited as speakers or committee members of IUPAP endorsed and supported conferences
- to liaise with the Vice President at Large with Gender Champion duties in all these aspects and to cooperate in the design and control of policies and guidelines for the IUPAP's structure and for the activities endorsed and supported by the Union
- to liaise with the Vice President at Large with Gender Champion duties to participate in the joint activities organized with other international organizations, particularly those related to the Standing Committee for Gender Equality in Science

The IUPAP charges the acting Vice-President at Large with Gender Champion duties, Gillian Butcher, to put together a team that will look into the possibility of expanding the aims of the Working Group to embrace all forms of diversity and inclusion or if the goal of increasing diversity in multi-dimensional aspects will be best served as a separate group.

~~Res01~~ recommended to be postponed to next year

~~Recommendation for an IUPAP resolution concerning the use of units in the International System of Units (SI)~~

~~U. S. Liaison Committee for IUPAP~~

~~To provide input from the physics community for the examination of the role of units for angles being carried out by the Consultative Committee for Units (CCU) of the International Committee for Weights and Measures (CIPM), the International Union of Pure and Applied Physics has passed the following resolution at its General Assembly in 2020.~~

~~It is recommended that the Consultative Committee for Units (CCU) of the International Committee for Weights and Measures (CIPM) support the following changes to the SI:~~

- ~~Change the SI designation of the unit radian for plane angles and phase angles from being a derived dimensionless unit to being an independent unit (formerly a base unit).~~
- ~~Recognize revolutions (or periods or cycles) as a unit of plane angle or phase angle, representing the repeating segment of a periodic function.~~
- ~~Always use complete units for periodic phenomena, such as Hz, rad/s, rather than 1/s.~~
- ~~Specify that names of quantities do not imply particular units.~~

- ~~Recognize that the angle arguments of trigonometric and exponential functions are to be understood as the numerical value of the angle when that angle is expressed in radians. (For example, $\sin \theta$ is understood to mean $\sin\{\theta\}$, where $\theta = \{\theta\}$ rad.)~~
- ~~Allow rad to be replaced by 1 only if it does not introduce ambiguity.~~

Res02

Recommendation for an IUPAP resolution to endorse 2025 as the International Year of Quantum Science and Technology

U. S. Liaison Committee for IUPAP

That IUPAP endorses the global project led by the American Physical Society (APS), the German Physical Society (DPG), and many other international partners to work through UNESCO to request a United Nations proclamation of an International Year of Quantum Science and Technology in 2025.

IUPAP expresses its strong support for International Year of Quantum Science and Technology goals that encompass science, education, outreach, and particularly its aims to promote physics education and improve the quality of life of citizens in the developing world.

Res03

The IUPAP renames beginning next year, its Young Scientist Prizes as Early Career Scientist Prizes (previously Young Scientist Prize). This change of name reflects that the prizes are not intended for “young” people in terms of chronological age but in terms of the stage of the career they are at. The IUPAP also approves that periods of career interruptions should be excluded when counting the years of research experience after the PhD to decide whether a person qualifies as an early career scientist or not.

Res04

Diversity of candidates for IUPAP Awards

The IUPAP mandates its Commission chairs to guarantee that the pool of candidates for Commission and Early Career Scientist awards be sufficiently diverse, particularly in terms of gender and other underrepresented groups and geographical regions. The need to achieve this goal should be included in the call so that potential nominators take it into consideration when deciding on possible nominees. The call should be written using inclusive language asking nominators to provide information on the gender of the nominee in the application file. Commission chairs should monitor that the list of proposed candidates is sufficiently diverse as the application deadline is approached, sending reminders and eventually extending the deadline when it is not. In order to monitor progress, Commission chairs are requested to provide segregated statistics where possible on the number of candidates that are nominated, shortlisted and awarded.

Professional ethics and scientific integrity of candidates for IUPAP Awards

Recipients of IUPAP Awards are expected to meet the commonly held standards of professional ethics and scientific integrity. Nominators should include a statement saying that, to the best of their knowledge, there are no concerns that IUPAP should be aware of regarding the nominee satisfying this expectation.

Res05

The IUPAP adopts the [Waterloo Charter for Gender Inclusion and Diversity](#) to guide its actions and commits itself to promote its adoption by its members, physical societies and other scientific unions. The IUPAP also manifests its commitment to continuously update and disseminate the list of policies, action and recommendations pertaining to affirmative action, career paths and institutional policies that are spelled out in the Charter's [Supporting Information](#).

Res06

On the path towards Open Science for physics and beyond

Open access publishing has over the last years become mainstream in several parts of the world. IUPAP encourages all stakeholders to explore models that will make Open Access the way forward for scientists from all countries—ensuring a global publishing landscape with a vast diversity both for content coverage and publishing platforms.

IUPAP applauds the [UNESCO draft recommendation on Open Science](#). The draft recommendation builds on the the essential principles of academic freedom, research integrity and scientific excellence. Open science sets a new paradigm that integrates into the scientific enterprise practices for reproducibility, transparency, sharing and collaboration resulting from the increased opening of scientific contents, tools and processes. IUPAP encourages all UNESCO Member States to vote for final approval at the upcoming General Conference—an UNESCO approval will accelerate the transition to Open Science in physics and beyond.

IUPAP urges conference organizers, publishers and information providers to implement the required data protection rules, within the legislation in the area they operate, in a way so that libraries and archives have the possibility to preserve and make available the scientific record, i.e. data (in line with EC resolution 20 Nov 2019) list of conference participants, photos, videos, etc. for future reference and historical research.

Res07

Resolution 07, regarding conferences

Taking into consideration the changes that the COVID19 pandemic has induced in the practice of science across the world and the IUPAP position statement on virtual conferences and worldwide accessibility (<https://iupap.org/iupap-statement-on-virtual-conferences-and-worldwide-accessibility/>), the IUPAP resolves to:

- a) Use the well-established guidelines developed by IUPAP to pursue the principle and the practice of endorsing and supporting the most deserving international conferences and meetings of physicists regardless of whether they are held in person, virtually or in hybrid form.

- b) Given the persistent effects of the COVID19 pandemic, give due consideration to the benefits of online conferences, recognising that safe travel and access to vaccinations are not universally available. Decide on the support/endorsement of conferences and meetings without discriminating against the (accessible) platforms on which they are held.
- c) Commit to update the IUPAP current guidelines on good practice to cover virtual (online) conferences.
- d) Call upon all organizers of scientific meetings and conferences which include virtual participation to take into strict consideration issues of accessibility restrictions that continue to persist on the basis of geographical locations and either choose platforms with global access and worldwide footprint or include more than one way through which unhindered global participation can be facilitated.
- e) Require organizers to take into consideration the devastating effects of the COVID19 pandemic and ease the registration fees of participants with difficulties; in particular the prospective participants who have lost income due to the pandemic-related job changes or caregiver-responsibilities, with priority focused on the women affected.

Supporting information for the IUPAP 30th GENERAL ASSEMBLY RESOLUTION ON CONFERENCES

1. The support of international meetings and the sponsorship of deserving conferences in various fields of physics is one of the founding cornerstones upon which the Union has consistently encouraged communications and enhanced physics research publications while fostering the free circulation of scientists,
2. The advent of the Covid-19 pandemic has fundamentally perturbed and significantly altered on a global scale the conventional and traditional physical platforms on which scientific conferences and international meetings are held,
3. As a direct effect of the Covid-19 pandemic, a number of conference organizers had to adopt, and to adapt to a variety of online platforms offering virtual equivalent in substitute for the conventional physical conference venues,
4. In instances where conditions were deemed permitting, organizers had adopted to experiment on innovative hybrid models incorporating simultaneously both physical and online virtual conference platforms,
5. Further realizing that the resort to virtual conference platforms has once more acutely brought to fore the challenge of lack of access to certain internet-based meeting platforms that remain inaccessible from various regions of the world on account of either the country's regulations or due to sheer lack of digital cyber-infrastructure.
6. These restrictions and hindrance of access to conference meeting platforms not only affect negatively the international scientific collaborations but also aid intricately to perpetuate and increase inequalities that hinder further the free interaction of scientists and the need for global advancement of science across all communities as envisaged by the founding members of the Union,

The proposed resolution is thus based on the above listed reasons and on the recognition that it is highly likely that the transformational impact of the Covid-19 pandemic on the modes, means and media through which international conferences are held will persist and that the devastating effects of the pandemic and the associated lockdowns will be long lasting, especially on under-represented groups and on communities with special needs.

Res08

FRAMEWORK COLLABORATION AGREEMENT REFERENCE KN XXX (THE “AGREEMENT”)

BETWEEN: THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (“CERN”), an Intergovernmental Organization having its seat at Geneva, Switzerland,

AND: INTERNATIONAL UNION OF PURE AND APPLIED PHYSICS (“IUPAP”), an association under Swiss law, established at Geneva, Switzerland,

Hereinafter individually referred to as a “Party” and collectively as the “Parties”.

CONSIDERING THAT:

CERN, an Intergovernmental Organization, is a leading global laboratory in particle physics, providing for collaboration of a pure scientific and fundamental character, with participation by scientific institutes from all over the world;

IUPAP is the only scientific union devoted to physics, comprising entities representing physicists in 60 countries or regions around the world, with the mission of assisting in the worldwide development of physics, to foster international cooperation in physics, and to help in the application of physics towards solving problems of humanity;

Taking into account the longstanding relationship between the Parties, and without prejudice to each Party’s particular mandate and legal status, CERN intends to join IUPAP as a Corporate Associate Member as defined in IUPAP’s Article of Association;

IUPAP has requested that CERN make available limited ad hoc support and CERN has accepted this request;

AGREE AS FOLLOWS:

Article 1 Purpose

This Agreement establishes the framework for collaboration between the Parties.

Each Party’s contribution to a specific project (“Project”), including, where applicable, the required resources, the duration of the activities and their management shall be set out in an Addendum to this Agreement. Such Project shall be subject to the provisions of this Agreement, varied, where applicable, through the provisions of the relevant Addendum.

Article 2 CERN’s contribution

Always subject to the availability of resources and the compatibility with its mission, CERN shall contribute to the collaboration on an as-is and best efforts basis, in particular by providing the following support:

- Allocating a fraction of time of one of its staff members for the role of Secretary-General for a period of a maximum of three (3) years from the date of this Agreement;
- Providing support, on an ad hoc basis, for projects of common interest, such as, upon adoption by the General Assembly of the United Nations, the International Year of Basic Sciences for Sustainable Development 2022 (by way of financial contribution of CHF30,000), the IUPAP General Assembly anticipated to be held in Geneva 2023 (by way of financial contribution of CHF20,000), and outreach activities in connection with such projects;
- Providing space for events or meetings at CERN, to be agreed on a case-by-case basis.

Article 3 Communication and Outreach

- 3.1 The Parties shall agree on how they will promote their collaboration, including Projects and events on which they cooperate, including use of each other's names, logos and, where applicable, acronyms.
- 3.2 The use of the name of the Parties or any of their logos or trademarks in advertising, publicity or otherwise shall be subject to their prior written approval.

Article 4 Contact Persons and Coordination Meeting

- 4.1 The Parties nominate the following contact persons, who together shall coordinate the execution of this Agreement, and who shall be responsible to grant written approvals for their Party under this Agreement:

For IUPAP: Michel Spiro
 email: mspiro@admin.in2p3.fr
 phone: +33 6 74 09 5425

For CERN: Charlotte Lindberg Warakaulle
 email: charlotte.lindberg.warakaulle@cern.ch
 phone: +41 22 76 79699

- 4.2 The Parties, represented by the contact persons, shall convene an annual coordination meeting to consult concerning the implementation of this Agreement and the development of their collaboration.

Article 5 Data Privacy

All personal data processed by the Parties under this Agreement shall be processed in accordance with their respective legal frameworks.

Article 6 Liability

- 6.1 Except as set out in Article 6.2 of this Agreement, each Party shall bear its own loss and damage in connection with this Agreement.
- 6.2 The responsible Party shall indemnify the other Party for its loss and damage resulting from gross negligence or willful misconduct by the responsible Party, save for consequential loss or damage.

Article 7
Entry into force, duration and termination

- 7.1 This Agreement shall enter into force on the date of signature by the last Party to sign. It shall remain in force for a period of three (3), unless terminated by one Party giving at least three (3) months prior written notification to the other Party, or terminated or extended by mutual agreement of the Parties, at their discretion.
- 7.2 Articles 5, 6, 7 and 8 of this Agreement shall survive its termination, howsoever caused.

Article 8
Governing law and dispute resolution

- 8.1 The terms of this Agreement shall be interpreted in accordance with their true meaning and effect and as a consequence of CERN's status as an Intergovernmental Organization, independently of national and local law. If this Agreement does not expressly stipulate, or any of its terms are ambiguous or unclear, then in those circumstances only and not in respect of this Agreement as a whole, reference shall be made to Swiss substantive law.
- 8.2 The Parties shall settle any difference concerning this Agreement amicably. Where this is not possible, the Parties shall resort to arbitration in accordance with a procedure to be specified by the Parties, taking into account CERN's status as an Intergovernmental Organization.

Article 9
Amendments

Any amendment to this Agreement shall be made in writing and signed by the authorized representatives of the Parties.

Thus drawn up in two copies in the English language and signed by the authorised representatives of the Parties.

The European Organization for
Nuclear Research (CERN)

International Union of Pure
and Applied Physics (IUPAP)

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On:.....2021

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On:.....2021

Res09

GA 2022, GA 2023, GA 2024

All the elected people in GA 2021 are elected for three years (till 2024).

If the “new” IUPAP is approved, the statutes will require a GA each year. There are no elections at the “in-between” GAs—elections take place at the in-person GAs held every three years. The GA 2022 will be virtual without elections and will be held just after the centenary symposium in Trieste on July 14th (EC§CC meeting will be held in person before the Centenary symposium in Trieste).

We need to have an in person meeting in 2023 at CERN in Geneva, to celebrate the centenary of IUPAP and the closing ceremony of IYBSSD. I suggest this meeting to also include the GA 2023, with possibility for virtual participation. No election of commission chairs or members, no change in the EC and Officers. We will only know and possibly show the names of the designated chairs of commissions to be elected in the GA 2024.

This will avoid designating members of commissions, starting their job one year later and to designate EC members starting their job one year later.

The GA 2024, presumably in Beijing, which in accordance with the suggested new Articles, shall be planned as “in-person GA”, could be in a hybrid format: EC and CC would be in person, the rest on-line.

Resolution 10, regarding endorsed conferences

Taking into account the Endorsement of Conferences allows conference organizers to reflect on their promotional material their association with IUPAP without necessarily having to secure IUPAP financial sponsorship, noting that the relatively more flexible mechanism of Conference Endorsement currently runs/evolves time-independent without a submission deadline, and

considering that currently Conference Endorsement can only be channeled through IUPAP Commissions, it is proposed the 30th IUPAP GA resolves as follows:

1. Extend the function/duty/responsibility of recommending approval of Endorsement of Conferences to include all IUPAP Working Groups in addition to the Commissions and Affiliated Commissions;
2. Mandate the IUPAP Council to consider imposing (as an administrative management tool) two submission time deadlines per year in the event where a drastic increase is observed/experienced in the volume of Conference Endorsement Applications