
Conference 2027 outline: climate change action and sustainable development

- A possible name for the conference would be: *Physics for regenerative development: equitable wellbeing on a healthy, lively planet*, or an equivalent.

Aims of the conference

- Provide a forum for the global physics community to engage with climate change action and sustainable development.

1. Process

- a. A call for expressions of interest is organised by Working Group 21.
- b. The conference may be offered to IUPAP Executive as a possible International Conference on Physics in conjunction with the call for an International Physics Conference in conjunction with the General Assembly 2027. *In this case, the IUPAP Executive Committee would be involved in decisions.*
- c. Short-listed applicants will be asked for a more detailed bid.
- d. The bid must describe the expected conference structure in detail. There should be no surprises for the LOC in drawing up the bid.
- e. The IUPAP conference guidelines will be found at <https://iupap.org/conferences/conference-policies/>. This is a Working Group conference and does not need to abide by the process for Commission conferences, but does need to meet the requirements of the sections on Travel grants, Participation of Women in IUPAP-supported Conferences, criteria by which applications are assessed.
- f. WG21 may call for an oral presentation from short-listed applicants.
- g. The successful host will be decided by WG21 (and possibly the IUPAP Executive Committee (EC)).
- h. Organising and scientific committees are formed as below.

2. Committees

- a. An LOC is formed.
 - i. When the bid has been awarded to a country or territory, it is likely that a Bid Committee has been formed, which becomes the kernel of the LOC.
 - ii. The LOC chooses opening speakers (with the inclusion of the IUPAP President and the WG21 chair, and local dignitaries) and one plenary.
 - iii. The LOC is responsible for local fundraising.
- b. The International Organising Committee is WG21, possibly with members of the EC.
 - i. The IOC chooses the balance of the plenaries. It may work with the LOC, the Commissions, and the other IUPAP Working Groups if it chooses to call for nominations in the spirit of Inter-Commission collaboration.
 - ii. The IOC is responsible for global fundraising.
 - iii. The IOC may co-opt assistants.

- iv. The IOC should approve the appointment of a professional conference organising company if one is to be used.
- c. A Scientific Committee is formed.
 - i. Working Group 21 members, and possibly EC members, form the core of the Scientific Committee and may invite other members.
 - ii. The Scientific Committee is responsible for acceptance of abstracts and papers.
 - iii. The scientific scope will be agreed with the Scientific Committee.

3. Voice

This conference will be open to registration from any participant. (This is in contrast to some WG conferences, which have been by invitation.)

It is very easy for LMIC¹ voices to be dominated by high-income countries. A discussion is essential on how to make sure the voices of developing countries, island states, indigenous people, and the global South can be well heard.

WG21 is developing a system of “Climate contacts” across the world. Part of their function is specifically to be the main contact in an IUPAP member territory, or a country, for this conference.

4. General principles

WG21-sponsored meetings should find a viable path that takes the following into account:

- minimise carbon footprint; set an example for future conferences; take advantage of advances in technology for virtual presence,
- encourage meeting and the formation of partnerships and collaborations,
- encourage inclusivity; enhance the participation of developing countries, island states, and the global South.

5. Structure

1. The scope will match the WG21 call document.
2. The conference will be hybrid.
 - a. An in-person component offers the opportunity for collaborations and relationships to be built across the community. The first conference of this kind is important in forging links and exchanging experiences. A disadvantage is that it is less inclusive in terms of who can come.
 - b. A virtual component offers the opportunity for people to attend who do not have funding, cannot get a visa, are physically disabled, or who cannot travel because of family or other reasons. It is also a greener conference.
 - c. The advantages of completely virtual conferences were noted: a green conference, setting an example. Future conferences will consider the option.
 - d. There is funding to be raised for each aspect: travel in person, or organisation on line (“the future of conferencing”).
3. Hybrid conference
 - a. A hybrid conference requires proper technology and reliable internet throughout the conference. A good model is that in-person delegates bring a laptop and connect in the meeting rooms, wearing earphones.

¹ Low- and Lower Middle Income Countries, World Bank

- b. Time zones are a major problem. The best solution so far is that not all delegates attend all sessions, but recordings of all sessions are made available.
 - c. The Future of Conferences group in Australia carries out ongoing development in this area (a contact can be arranged).
 - d. Translation might be considered for some sessions, depending on cost. French and Spanish are likely to be top languages. Informal translation by another delegate should be arranged well ahead of the conference by a speaker who needs translation. Closed Captioning is sometimes requested by those who are hard of hearing.
 - e. It is vital for delegates to be able to meet and chat outside sessions. Gathertown provides a good place for online delegates to meet and set up one-on-one, or small party, chats.
 - f. The Future of Meetings resources may be considered².
4. Satellite conferences
- a. The LOC and IOC can discuss together the possibility of setting up “zone inclusive” satellite conferences at a few locations to which interested people can travel in their region. A small grant may be made for the support of such a satellite, depending on budget. Factors to consider are time zones and stable internet connectivity.
 - b. The IOC must make the expectations for satellite conferences clear.
 - c. Expenditure must be controlled; over-expenditure must be made up locally.
5. The conference will run for approximately 2 ½ days
- a. Day 0: reception in the evening
 - b. Day 1: official opening, sessions, evening session if desired
 - c. Day 2: sessions, afternoon tour if possible, evening session if desired
 - d. Day 3: short sessions and closing before midday.
6. Plenaries: 5-6 top speakers, ample time for questions.
7. Special sessions:
- a. An open call will be issued for Special Sessions. Climate contacts are included in the call. The sessions may function as a workshop or as a session for presentation of scientific papers.
 - b. The proposers will be responsible for organising the sessions and for their success.
 - c. The Scientific Committee will evaluate proposals and select the Special Sessions.
 - d. The infrastructure is supported by WG21.
 - e. Special Session papers, and summaries if required, will be included in the Proceedings.
8. Contacts (“Climate contacts”) will be set up by WG21 both in member territories and territories which are not members. The function of the Climate Contact is to communicate with the Working Group on one hand and with interested parties in their territory/Commission/Working Group on the other. A Climate Contact may choose to be responsible for convening a bid committee and submitting a conference Bid. They may choose to organise action through their local physical society. There is one contact for each:
- a. Commission and affiliated Commission, Working Group and Affiliated Working Group
 - b. Member territory

² <https://www.nature.com/articles/s41550-021-01325-z>
<https://youtu.be/TqCdsgTD1RA>
<https://youtu.be/LuN3A15mUw>
<https://www.nature.com/articles/s41550-022-01806-9>

- c. Any other country or territory wishing to participate in the conference, one per territory
 - d. The costs of participation of country contacts from LMIC³s, and possibly some UMIC⁴s, will be covered on acceptance of an application for support by a grant if there are sufficient funds (Travel Grant or Technology Grants, see below)
 - e. The WG21 members form the selection committee.
 - f. There is one contact in order to organise communications through the Working Group. These are otherwise overwhelming.
9. Papers
- a. Scientific abstracts will be submitted for review and acceptance. They may be organised in parallel or Special sessions, as oral or poster contributions, or posters with three-minute pitches.
 - b. Plenaries are asked to write a short summary paper. A member of the LOC may be assigned to work with the speaker to produce the paper.
 - c. Progress papers are written by country contacts and outline the progress of a country or territory in terms of climate change action and sustainable development.
 - d. Special session papers are written by the session participants and organisers, and speakers and facilitators may be included as authors.
 - e. All progress papers are posters, with a three-minute poster pitch. The poster pitch sessions need careful organisation and good diplomacy: the best practice so far is to ask for 3 slides, and change them automatically.
10. Proceedings
- a. Proceedings are essential for the community to move forward; they form a record of the state of the field and are an important gateway.
 - b. Proceedings also provide an opportunity for young delegates and those from developing countries to produce a paper for the proceedings.
 - c. Only those papers for which abstracts have been accepted, and which have been presented at the conference, are eligible for review for the proceedings.
 - d. The work required to produce the proceedings is large – comparable to the work of organising the conference, especially review and language editing. It is worth it in terms of IUPAP's aims and the WG21 mandate.
 - e. WG21 is responsible for finding funding for the proceedings, finding editors and publishers of the proceedings, and overseeing the process.
11. Output
- a. Proceedings
 - b. Recommendations to be considered by (1) IUPAP WG21, and (2) country contacts and delegates.
 - c. WG21 may put forward a General Assembly resolution based on the recommendations.
 - d. Conference reports are submitted by the LOC to WG21 and IUPAP.
 - e. Media releases; interviews during the conference.
 - f. Video recordings.

³ Low- and Lower Middle Income Countries, World Bank

⁴ Upper Middle Income Countries

12. Sponsors

- a. Sponsor acknowledgement is essential. Sponsors may require time to speak or space in which to exhibit, which will be organised by the LOC. Sponsor logos appear on banners and in proceedings. Letters of thanks are sent to the sponsors by the LOC.

13. Roles

- a. Early career physicists should be encouraged to be co-chairs of sessions.
- b. Local physics students should be encouraged to be helpers at the conference.
- c. Students and early career participants will need an organised space which they own and in which they can hold their own discussions.

14. Visas and timing

- a. Countries with easier visa regulations have an advantage, and electronic visas are very helpful.
- b. The call has to be issued unusually early for in-person or hybrid conferences, since for LMIC countries the sequence of events is: submit abstract, submit travel/technology grant application, abstract acceptance, grant acceptance, apply for visa.

15. Social programme and discussion time

- a. These are vital, and will be programmed in. Events in the virtual space can be planned in with Gathertown or a similar tool.

6. Funding

1. Given the extent of Travel and Technology Grants, and proceedings, it is essential to find sponsors. IUPAP will provide some funding which can assist in leveraging sponsorship.
2. Because developing countries (LMICs) are involved, travel or technology grants are needed.
 - a. Early fund raising is essential, and governs decisions on what grants can be afforded.
 - b. Funding for editing and production of proceedings is essential. Language and scientific writing editing may be needed.
 - c. Funding for the virtual part of the conference is needed, including videos that can be viewed by those in widely separated time zones.
 - d. In-person or in-person delegates at a hybrid meeting, Travel grants: for LMIC climate contacts, all costs should be covered except visa and ground travel in the home country. Costs include registration, air, ground travel at the destination, all meals at the conference. A call for applications is issued. If funds permit, other delegates applying in the same call may be funded. The Working Group is the selection committee. Selection depends on the budget available.
 - e. In-person or hybrid: all costs of plenary speakers are covered for economy class travel, with the exception of visa costs.
 - f. Virtual or hybrid: technology grants should be offered cover the cost of a router, or internet connection and data, or a big screen for use in a satellite conference at a local destination where people can gather and participate in the conference together.
 - g. Virtual and hybrid conferences, properly managed, can have significant costs.
 - h. Satellite conferences must have best possible interaction planned in from the beginning; an example is to make it possible for questions to be asked and answered live. A small grant for a meal may be made.
3. Sponsorship has to be organised unusually early, in view of decisions on travel/technology grants.

4. Budgeting, Proceeds and Debts

- a. The LOC provides an initial budget to the IOC for approval.
- b. The budget could be based on 250±50 participants.
- c. The LOC is responsible for monitoring expenditure and accounting and regularly updating the IOC.
- d. Any changes proposed by the LOC or IOC must be discussed with and agreed to by the IOC or LOC respectively.
- e. It is essential to have an extremely clear written agreement of who keeps any surplus. It is suggested that the LOC keeps any surplus of LOC fundraising and WG21 keeps IOC fundraising surplus.
- f. The potential for a conference debt must be very carefully managed.

5. IUPAP Conference Policies

- a. Conferences sponsored by IUPAP are expected to stick to the relevant policies, which can be found at <https://iupap.org/conferences/conference-policies/> . Relevant policies will be found under 'Criteria By Which Applications Are Assessed'.
- b. A WG21-sponsored conference does not fall under the Commission conference types.
- c. A report on the conference is expected within 4 months of the conference. In addition, the form at <https://iupap.org/conferences/conference-report-form/> , which gathers data used by IUPAP in evaluating conferences, should be completed within two months.

7. Dates

1. The conference itself should take place between October 2026 and December 2027.
2. Please note that proposed dates should be checked and agreed with WG21 and IUPAP, since a number of other IUPAP conferences and meetings take place during the year.

8. Contact

The Secretary of Working Group 21,
c/o the IUPAP Secretariat, secretariat@iupap.org.