

# Call for Presentation Abstracts

## ISYP Third Nuclear Age Conference

31 October-2 November 2022, in Berlin

New Age, New Thinking: Challenges of a Third Nuclear Age

[International Student/Young Pugwash \(ISYP\)](#) and its partners invite students and young professionals from around the world to participate in an interdisciplinary conference on the national, regional, and international drivers and implications of the “Third Nuclear Age”. This conference will provide early career individuals with a unique opportunity to assess the impact of developments in nuclear and conventional weapons technology on the global nuclear order. These advances, combined with a shift to multipolarity, raise challenging questions about nuclear arms control, disarmament, non-proliferation, and deterrence strategy. The conference will allow participants to explore these questions and engage in dialogue across national divides, in accordance with the goals of ISYP.

Each participant will deliver a presentation during the Third Nuclear Age Conference. After the conference, participants will submit papers to the organizers, integrating feedback received at the conference. ISYP will support participants in developing/revising papers and submitting them for publication in outlets including the [Bulletin of the Atomic Scientists](#).

## Application process

ISYP and its partners invite students and young professionals under the age of 35 to submit applications for the *ISYP Third Nuclear Age Conference*. We encourage applications that cover one of the four themes described below. To apply, please complete the online application form ([insert hyperlink](#)).

The application requires an abstract of a proposed presentation (max. 300 words) and a personal statement (max. 200 words). The presentation abstract can be for a current work in progress, or a piece specifically developed in response to this call. The personal statement should outline your potential contribution to the conference, your professional or academic experience, and the benefits you expect to gain as a result of participation. Successful applicants will be invited to join the *ISYP Third Nuclear Age Conference* in Berlin and present at one of the sessions. \*<sup>1</sup>

Please note that conference participants will be asked to submit a completed paper of high academic standard following the conference, but need not to do so beforehand. ISYP and its partners plan to select papers to be considered for publication in the *Bulletin of Atomic Scientists*. ISYP and the *Bulletin* will offer a writing workshop that will include guidance for prospective *Bulletin* authors.

Applications must be submitted no later than August 31, 2022, midnight CEST. Successful applicants will be contacted in September 2022.

If you have any questions regarding the application process, please contact the ISYP leadership team via email at [office@isyp.org](mailto:office@isyp.org).

## Context and relevance

During the Cold War, or the “First Nuclear Age,” the confrontation between two nuclear superpowers shaped nuclear policy thinking and practice—including concepts of deterrence as well as systems for arms control and non-proliferation. Much of this thinking persisted after the Cold War, despite the

---

<sup>1</sup> The organizers will do their utmost to host the event in-person. However, in light of the ongoing COVID-19 pandemic, the organizers may be forced to postpone the event.

transition from the First Nuclear Age to a “Second Nuclear Age,” which saw changing energy needs and further nuclear proliferation.

Now, in the “Third Nuclear Age,” unfolding multipolarity combines with advances in “strategic non-nuclear weapons.” This broad term includes advanced delivery vehicles, high-precision strike weapons, and missile defence systems. In addition, new dual-use technologies are finding applications in the nuclear weapons field. In particular, automation, advanced sensors, radars, and space-based technologies improve weapons performance as well as intelligence and early warning capabilities. Growing digitalization of systems enables control and decision-making in real-time. Research and development of nuclear reactor technologies are also advancing, with fourth generation reactors under development, and small-modular reactors designed to be built in factories and shipped to site. The latter may bring new proliferation and diversion challenges.

These technological advancements provide strategic benefits but also harbour significant risks. They have the potential to fuel perceptions of vulnerability and facilitate escalation from a conventional to a nuclear conflict. Nuclear cooperation can help address energy needs, but it can also trigger dual-use and proliferation concerns. Convergence of technologies renders nuclear and non-nuclear capabilities intricately intertwined—a trend that pre-dated current events but is gaining traction in the Third Nuclear Age. It is important to both (a) assess risks posed by such developments from a technical perspective, and (b) gauge policymakers' perceptions of those risks (merited or not).

The diplomatic structures that maintained stability in previous eras are struggling to adjust to the 21st century. The war in Ukraine and growing geopolitical tensions further cement this deadlock. While the New Strategic Arms Reduction Treaty (New START) remains, the Nuclear Non-Proliferation Treaty (NPT) faces stern challenges ahead of its long-awaited Review Conference. At the onset of this Third Nuclear Age, new thinking and approaches are needed to prevent conflict and increase stability.

## Themes

This conference call invites participants to submit presentation abstracts on the advent of the Third Nuclear Age. In particular, we encourage presentation abstracts along the following themes:

### **1. Nuclear Arms Control and Disarmament**

Considering New START, the NPT, several intergovernmental initiatives and the TPNW, nuclear arms control and disarmament appears brittle and fragmented. Still, technological progress provides opportunities for verification and ensuring compliance. Presentations can discuss the legacy and current state of play, identifying political and technical approaches to strengthening existing regimes and pathways towards new nuclear arms control and disarmament measures. This theme also includes interim measures, such as confidence-building initiatives.

### **2. Nuclear Technologies and Nonproliferation**

Governments around the globe are turning to nuclear power to help achieve their aims—from decreasing reliance on fossil fuels to powering military vehicles. Novel reactor designs may support those aims, but they also raise new questions regarding safety, waste and non-proliferation. We invite presentations on developments in nuclear power technologies and their implications, considering challenges and opportunities for nuclear security, safeguards and nonproliferation.

### **3. Delivery Vehicles and Launch Technologies**

The range and sophistication of delivery vehicles and launch technologies for nuclear warheads is increasing, as is the number of states who possess them. This includes dual-capable aircraft, ground- and sea-launch systems, and missile technologies for defensive and offensive purposes. We invite presentations on the proliferation of these weapons systems, their technical features, deployments, and perceptions of opportunities and risks. Presentations may also consider the legacy of export control regimes and other arrangements for regulation, identifying options to strengthen regimes and implement new approaches.

A number of emerging technologies can have strategic effects when integrated into military operations and systems. This includes, but is not limited to, advanced communication technologies, artificial intelligence (including machine learning), and quantum computing and sensing. Presentations may discuss characteristics of these technologies and their effect on(in-)stability. We encourage participants to discuss whether/when certain technologies are destabilizing—for technical or psychological reasons. We also invite participants to identify avenues to mitigate the risk of nuclear conflict.

## Conference outputs

The Third Nuclear Age Conference will produce two material outputs: papers written by the attendees and a conference report drafted by the organizers.

Participants are required to write and submit papers following the completion of the conference, based on their conference talks. ISYP and the [Bulletin of the Atomic Scientists](#) will support participants in writing said high-quality papers. The *Bulletin's* editor-in-chief, John Mecklin, has agreed to lead a writing workshop for conference participants at the conference. This workshop will take place either virtually or in person, depending on funding availability. The *Bulletin* will publish participants' papers that meet their editorial standard either within the [Voices of Tomorrow](#) section or as “regular” articles. Depending on the number of selected papers, the *Bulletin* may publish them as a collection.

The Third Nuclear Age Conference will convene under Chatham House rule. The organizers plan to compile a summary of conference presentations and discussions, which will be shared with conference partners and published on the ISYP website.

## Conference objectives

The Third Nuclear Age Conference aims to increase the range of perspectives represented in nuclear policy discussions—and ultimately, in decision-making. By tackling hard questions in a multidisciplinary, international, and intergenerational context, this conference will enrich conversation and debate around the current nuclear age.

First: Today, in the Third Nuclear Age, a multidisciplinary approach is vital for explaining problem drivers and identifying solutions. Many new questions require technical expertise and careful definitions of terms; others require the nuances of social science perspectives. Thus, the Third Nuclear Age Conference will convene participants from a variety of disciplines and experiences—including hard scientists, political scientists and international relations practitioners. The organizers will encourage individuals from universities, think tanks and governments to apply.

Second: International exchange is another prerequisite for comprehensive discussions in the Third Nuclear Age. Such exchange will encourage a focus on multipolarity, with consideration of both Eurocentric and non-Eurocentric issues. We will strive to select participants who are sensitive to cultural differences, laying the foundation for respectful and constructive exchange. We will also consider gender balance and representation of marginalized groups, to ensure a diversity of opinions.

Third: We aim to promote intergenerational exchange, in a setting with mostly early-career participants. The conference will both elevate perspectives of these early-career individuals and draw on the knowledge of senior experts. Early-career participants' presentations will provide the basis for in-depth

Finally, the Third Nuclear Age Conference aims to empower young individuals as *Leaders of Tomorrow*. ISYP exists to challenge beliefs and belief systems while promoting dialogues across divides. In-person conferences provide unique opportunities for rigorous exchange, while also building cross-national, long-lasting personal relationships. Such experiences can shape participants' thinking beyond policy ideas, facilitating critical reflection.

## About ISYP

International Student/Young Pugwash (ISYP) is an international network of several hundred early-career individuals who are interested in the nexus of international security, ethics and science. These include issues of conventional arms, nuclear weapons and other weapons of mass destruction, regional and international security, advanced technologies, and the significant humanitarian and security challenges presented by climate change. ISYP is affiliated with but independent of [Pugwash Conferences on Science and World Affairs](#). ISYP's network includes several established national chapters across the globe.

ISYP's community is diverse, spanning a range of nationalities, geographic locations, and disciplines of work and study. In particular, ISYP seeks to actively engage young individuals with technical and natural science backgrounds. ISYP's working assumption is that the security issues of our time are multi-dimensional, requiring diverse and innovative thinking to mitigate and solve challenges.

## Funders and Partners

The Heinrich Böll Foundation, Foreign and Security Policy Division

The *Bulletin of Atomic Scientists*

The German Foundation for Peace Research and the University of Duisburg-Essen (TBC)

*Others TBC / fundraising pending*