

## Science needs cooperation, not exclusion

In the aftermath of World War II, nations came together and formed the United Nations (UN) with the purpose, as stated in the first article of the UN charter<sup>1</sup>, "... to take effective collective measures for the prevention and removal of threats to the peace". With more than 100<sup>2</sup> ongoing wars and military conflicts, we are further away than ever from this ideal. This marks a significant failure of diplomacy to prevent those wars.

In a similar spirit as the UN, CERN was founded in 1954 to bring nations together through peaceful scientific collaboration. Remarkably, just one year after its foundation, cooperation between CERN and Soviet scientists began via the Joint Institute for Nuclear Research in Dubna and the Institute for High-Energy Physics in Serpukhov<sup>3</sup>. In 2014, on the occasion of CERN's 60th anniversary, the then Director-General Rolf Heuer wrote<sup>4</sup> that "CERN has more than fulfilled the hopes and dreams of advancing science for peace".

The invasion of Ukraine by the army of the Russian Federation at the end of February 2022 and the suffering inflicted on countless innocent civilians, including scientists, is against international law and must be condemned in the strongest terms. Despite pro-war statements from some Russian institutes, many Russian physicists oppose the war and immediately signed petitions against it. <sup>5</sup>

In March 2022, as a reaction to the war in Ukraine, many national Western science institutions put bans on their historical scientific cooperation with Russian institutions. This move unexpectedly also concerned international organizations such as CERN, whose Council - where the member states of CERN are represented - will stop the renewal of existing collaboration agreements with Russian and Belarusian Institutes.

Limiting international scientific collaboration is against the advancement of knowledge, which is not just a global public good but a powerful instrument for intercultural dialogue and peace - especially during times of crisis. If we take the UN charter seriously, we must ask which measures are appropriate for the prevention and removal of threats to the peace. After all, as one Ukrainian colleague put it, do sanctions against Russian science institutes help to stop the war?

After some two years of both economic and scientific sanctions, the answer would appear to be "no". While we have continued to work together with our Russian and Belarusian colleagues at CERN, and had many discussions among us within experimental collaborations, people with whom we worked together for decades now risk becoming excluded from their experiments and from CERN and other institutes.

When I came to CERN as a student in the early 1980s, I was fascinated by the open and international spirit. It was an unforgettable experience to be able to talk openly to scientists from the Soviet Union, the German Democratic Republic or other countries. I was excited to listen to different viewpoints and thrilled that science could offer a way to understand each other and to work for a better world.

Unfortunately, the discussion about sanctions in science and the sanctions themselves have contributed to an atmosphere of mistrust and fear. Today, I am shocked when hearing that young students are afraid of discussing political matters with their colleagues, and that they are not

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<sup>1</sup> <https://www.un.org/en/about-us/un-charter/full-text>

<sup>2</sup> <https://geneva-academy.ch/galleries/today-s-armed-conflicts>

<sup>3</sup> <https://cds.cern.ch/record/186009/files/CERN-75-07.pdf>

<sup>4</sup> <https://home.cern/news/opinion/cern/celebration-science-peace>

<sup>5</sup> <https://www.t-invariant.org/2022/02/we-are-against-war-en/>

accepted to summer schools because they were born and have studied in the wrong country. I am afraid that this next generation of scientists will remember how they were treated.

With the acceptance of sanctions in science -- sanctions which are not endorsed by UN agencies -- we allow the dominance of politics over scientific cooperation. It is fatal to impose a policy that has failed miserably in diplomacy on science, which has long provided the language to communicate and cooperate across all borders.

The Science4Peace forum, which was created in response to restrictions on scientific cooperation implemented as a result of Russia's invasion of Ukraine, convened a panel discussion in spring 2023 at which experts from different fields in science, ranging from IUPAP to particle physicists and climate researchers, expressed their opposition to sanctions in science. A subsequent report "Beyond a year of sanctions in science" released in November (arXiv: 2311.02141) concluded with a statement of the famous conductor Daniel Barenboim at a concert he gave with his East-West orchestra in Ramallah in 2005: "This is not going to bring peace, what it can bring is understanding, patience and courage to listen to the narratives of the other". Perhaps, we should take this also as our motto in science, and against exclusion and sanctioning of colleagues, even in difficult times.

**The Author**

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