Princeton University

Submission to the Secretary-General's report on Youth, disarmament and non-proliferation (A/RES/78/31)

Princeton University's Program on Science and Global Security (SGS) in October 2023 and October 2024 organized and hosted the Princeton School on Science and Global Security. Founded in 1974, the Program on Science and Global Security (SGS), based in the School of Public and International Affairs, conducts scientific, technical and policy research, analysis and outreach, and offers education to advance national and international policies for a safer and more peaceful world. It has a special focus on nuclear arms control, nonproliferation, and disarmament to reduce the dangers from nuclear weapons and nuclear power. It is one of the oldest and most highly regarded academic programs focused on technical and policy studies on nuclear issues in the world.

SGS in 2020 launched the Princeton School on Science and Global Security to train next-generation scientists and engineers from around the world in technical perspectives in on understanding, reducing, and ending the threat from nuclear weapons, a field we call nuclear disarmament science. The goal is to provide skills and insights that participants can use in their own research, encourage and inspire them to investigate new ideas to advance global security and create a safer and more peaceful world and to foster an international community of such researchers.

The meeting includes presentations on topics such as nuclear weapon effects, fissile materials, verification, emerging technologies such as AI and robotics and quantum and space systems, and missile defense. It also includes interactive learning experiences and tutorials, including how to understand and engage with nuclear weapon policy-making processes.

The 2024 School included twenty-two student participants from twelve countries. Presentations covered a diverse array of topics, including nuclear weapons arsenals, modernization, and policies in the United States, Russia, and China; nuclear weapon effects and nuclear war impacts; nuclear material and radiological contamination detection and monitoring, including the possible use of AI and robotics; nuclear weapon verification science; the safety of nuclear reactors in war zones and accidents at nuclear weapon facility accidents, nuclear weapons and reactors in space; disarmament education, and the role of physicists in nuclear policy processes.

The 2023 School included 17 student participants from seven countries. Presentations covered topics such as the U.S. strategic posture and the ethics of nuclear deterrence; strategic nuclear, conventional, and hypersonic weapons; computational modelling of nuclear weapons and nuclear forensics, neutrino detection and quantum sensing; the vulnerability of space-based systems; monitoring and verification of nuclear warheads, facilities and programs; humanitarian and ecological consequences of nuclear weapon testing, nuclear weapon use, and nuclear facility accidents; the Treaty on the Prohibition of Nuclear Weapons (TPNW).