Western Science

Department of Physics & Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Thursday, March 27, 2025 at 1:30pm in PAB 100

Dr. Frank N. von Hippel
Senior Research Physicist and Professor of Public and International Affairs emeritus
Program on Science and Global Security
Princeton University

"Reducing the Danger of Nuclear War – Canadian Physicists Can Help"

Physicists, starting with Albert Einstein and Niels Bohr, have contributed to the debate over nuclear weapons policy. The speaker was in the middle of things during the 1980s when Gorbachev/Yeltsin and Reagan/Bush responded to a public uprising against the nuclear arms race in the West and set the stage for 85% cuts in the combined U.S. and Soviet/Russian nuclear arsenals and for the end of nuclear testing.

Today, nuclear dangers are increasing again: Vladimir Putin has threatened nuclear use if NATO crosses an ill-defined line in support of Ukraine, and China is building up its nuclear forces as a result of the intensification of its confrontation with the U.S. over Taiwan's independence.

In 2020, the American Physical Society provided startup funding for a Physicists Coalition for Nuclear Threat Reduction. The Coalition now has 1300 U.S. physicist-members and is encouraging similar organizational efforts in other NATO countries starting with Canada and Germany.

Canada, as a member of NATO's Nuclear Planning Group has a vote on issues such as NATO's refusal to take nuclear first use off the "table" in its confrontation with Russia and would be grievously impacted by the climate and economic consequences of a large-scale nuclear war even if it were not targeted directly.

This lecture will introduce interested physicists to the technical and political background required to contribute to raising the level of the nuclear-weapons policy debate in Canada. It will cover the basics of nuclear weapons design and effects and U.S. and NATO choices with regard to some fraught policy choices including battlefield use, strategic targeting, nuclear testing and ballistic missile defense.

The speaker will be available both before and after the lecture for discussions with interested students, post-docs and faculty.