



UNITED STATES AIR FORCE  
CENTER FOR STRATEGIC  
DETERRENCE STUDIES

NEWS AND ANALYSIS

Issue 1490

Oct 11, 2021

Welcome to [USAF Center for Strategic Deterrence Studies](#) News and Analysis. As part of the CSDS mission to develop [U.S. Air Force](#), [Department of Defense](#), and other [government](#) leaders to advance the state of knowledge, policy, and practices within strategic defense issues involving nuclear, biological, and chemical weapons, we offer the government and civilian community a source of contemporary discussions.

## Feature Report

[“Scientific Risk Assessment of Genetic Weapons Systems”](#). James Martin Center for Nonproliferation Studies; Sep. 23, 2021.

"This Occasional Paper assesses the potential for precision medicine to be diverted to develop a population-specific genetic weapon system, examines relevant state capabilities and motivations to pursue such an effort, and offers policy recommendations to manage the dual-use implications of this emerging biomedical field while still preserving its potential benefit for human welfare." [Read Paper](#).

## Nukes and Deterrence, Counter-WMD, and Arms Control in News and Research

### NUCLEAR WEAPONS AND DETERRENCE

- [F-35 Completes Final Test for Nuclear-Capable B61 Series Weapons](#) (Air Force Magazine)

The next step is nuclear operational certification to ensure training and validation of maintenance and air crews at desired wing locations where nuclear-capable F-35 missions exist.

- [Air Force Pick Pledges to Tackle F-35 Sustainment Costs, Back Nuclear Modernization](#) (Defense News)

Hunter said he supports the Ground Based Strategic Deterrent program, which is set to replace the Minuteman III intercontinental ballistic missile, and the Long Range Standoff Weapon program.

- [Navy Secretary’s New Strategic Guidance Focuses on Deterring China from Invading Taiwan](#) (Defense News)

He called it a “complicated kabuki dance” to deal with three fiscal years at once, but he said all three efforts keep China at the forefront.

- [Nuclear Operations and Counter-Homeland Conventional Warfare: Navigating Between Nuclear Restraint and Escalation Risk](#) (Texas National Security Review)

Two developments over the past 20 years have made thinking about the nuclear great powers’ nuclear thresholds and capabilities for conducting counter-homeland conventional strikes more important.

- [Transparency in the U.S. Nuclear Weapons Stockpile](#) (State Department)

The United States is releasing newly declassified information on the U.S. nuclear weapons stockpile to update the information previously released in September 2017.

### COUNTER-WMD

- [Protective Biosystems: Parasites to Fight Chemical and Biological Weapons](#) (Global Biodefense)

The program "is exploring the use of new transgenic commensal organisms—specifically hookworms and schistosomes—to secrete therapeutics specifically targeting chemical and biological threats."

- [Air Force Might Look at Hawaii for Updated Radar Aircraft](#) (Honolulu Star-Advertiser via Stars and Stripes)

The aircraft would be a replacement for older E-3 Sentry Airborne Warning and Control System, or AWACS, jets with a 30-foot rotating radar dome atop the fuselage.

- [Lawrence Livermore Develops Promising Antidote for Nerve Agent Exposure](#) (Lawrence Livermore National Laboratory)

Chemical weapon nerve agents typically function by blocking the transmission of messages from the central nervous system, composed of the brain and the spinal cord, to the peripheral nervous system.

## US ARMS CONTROL

- [Nuclear Arms Control After the Biden-Putin Summit](#) (Congressional Research Service)

The first round of these talks occurred July 28, 2021; the second round occurred Sept. 30, 2021.

- [Debate on ‘No First Use’ of Nukes Mushrooms in Washington](#) (Defense News)

Declaring that nuclear weapons are only to answer nuclear weapons would worry Asian allies fearful of China and North Korea, pushing South Korea toward fielding its own nuclear arms, Albuquerque said.

- [The Global Nuclear Security Architecture: Closing Gaps to Build Greater Assurance, Accountability, and Action](#) (NTI)

Addressing these challenges and building on the progress that has already been made requires sustained political attention and consistent prioritization of focus and resources on nuclear security.

## COMMENTARY

- [Addressing Biocrises after COVID-19: Is Deterrence an Option?](#) (War on the Rocks)

"Determining if biological attacks can be deterred requires a quick review of two topics: First, what are the basic tenets of deterrence, and second, how does this theory apply to biological threats?"

- [Go Bold or Go Home: The Nuclear Posture Review Must Give Biden Real Options](#) (National Interest)

"The NPR must position President Biden to right-size America's nuclear forces and pursue arms control negotiations."

- [More Than Submarines: Implications of AUKUS in the Air Domain](#) (Council on Foreign Relations)

"Through cooperative, diplomatic actions, the U.S. will likely enhance its capability to compete strategically in the Indo-Pacific."

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