

# How Mission Integration & Experimentation is Enabling Capability Development

## CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM (CBDP)

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# Evolving Threat



*“China intends to grow its domestic bioeconomy to \$3.3 trillion by 2025.”*

*“China most likely possesses capabilities relevant to chemical and biological warfare (CBW) that pose a threat to U.S., allied, and partner forces as well as civilian populations.”*

*“Russia’s CBW threat is expanding.”*

*“Iran very likely aims to continue R&D of chemical and biological agents for offensive purposes”*

*“North Korea maintains its CBW capabilities and may use such weapons in a conflict or in an unconventional or clandestine attack against the United States or its allies”*

## ANNUAL THREAT ASSESSMENT OF THE U.S. INTELLIGENCE COMMUNITY



**The Verge** Menu +  
SCIENCE / TECH / ARTIFICIAL INTELLIGENCE  
**AI suggested 40,000 new possible chemical weapons in just six hours** / 'For me, the concern was just how easy it was to do'

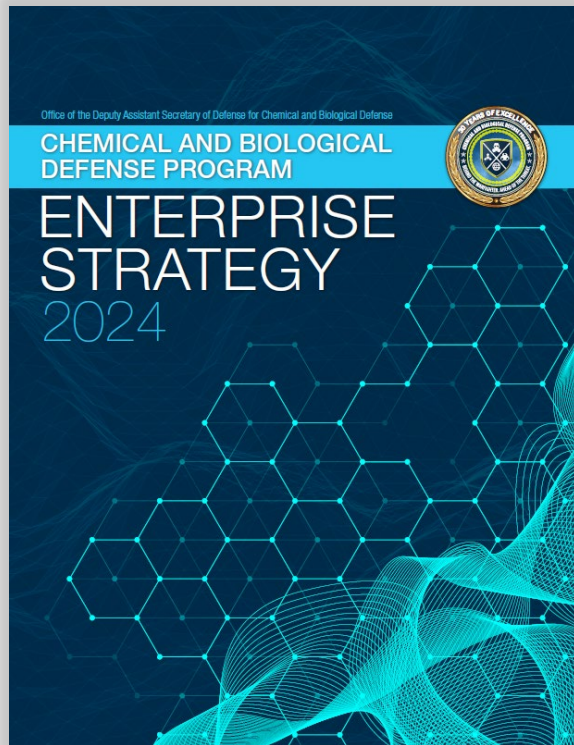
**The New Bioweapons**  
How Synthetic Biology Could Destabilize the World

Science  
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**Could chatbots help devise the next pandemic virus?**

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SYNTHETIC BIOLOGY  
**Synthetic biology could enable bioweapons development**  
A new National Academies report names and classifies the kinds of biological weapons that could emerge from techniques like CRISPR gene editing and DNA synthesis



# Acquisition Reform



**Generate CBD Advantages**



**Deliver at Speed and Scale**



**Optimize the Enterprise**



**Leverage Partnerships**



PRESIDENTIAL ACTIONS

## MODERNIZING DEFENSE ACQUISITIONS AND SPURRING INNOVATION IN THE DEFENSE INDUSTRIAL BASE

Executive Orders | April 9, 2025

- *“Accelerate defense procurement and revitalize the defense industrial base to restore peace through strength”*
- *“first preference for commercial solutions.”*
- *“promote streamlined acquisitions under the Adaptive Acquisition Framework”*
- *“Complete a comprehensive review of the Joint Capabilities Integration and Development System within 180 days of the date of this order, with the goal of streamlining and accelerating acquisition”*

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The Chemical and Biological Defense Program (CBDP) Experimentation Strategy will:

- Expand and align CBDP experimentation efforts
- Prioritize experimentation based on operational need and alignment to Service concepts
- Institute a “campaign of learning” to build a cohesive body of knowledge across experiments
- Integrate experiments into existing Combatant Command and Service exercises
- Ensure efficient use of experimentation resources

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**Performance Baselines**  
Experiments assess performance of current doctrine and fielded capabilities in the given mission context.



**Improved Requirements**  
Experiments drive concept design and aid development of threat-informed, concept-aligned and operationally relevant capability requirements.



**Holistic Solution Packages**  
Experiments identify combinations of solutions that effectively and efficiently deliver integrated layered CB defenses to the warfighter.



**Accelerated Fielding**  
Experiments identify the most impactful near and mid-term solutions in development for potential prioritization and accelerated delivery.



**S&T Gamechangers**  
Experiments are a catalyst for innovation, leveraging emerging technologies to provide paradigm-breaking solutions to the warfighter.



# CBDP CAPSTONE CAPABILITIES

Matching Capabilities To Threats, Ensuring Warfighter Lethality

## STRATEGIC PRIORITY

Deliver **threat-informed, operationally relevant** chemical and biological defense capabilities at **speed and scale**.

## INTEGRATED LAYERED DEFENSE

Employing CB defense capabilities across portfolios, time, and space so the **Joint Force can deter or defeat** advanced chemical and biological weapons during competition, crisis, and conflict.

### INTEGRATED EARLY WARNING

- A collection of capabilities that provide the Warfighter **with battlespace awareness** and **decision advantage**.
- *Example capabilities:* Sensor integration, identification and characterization tools, CJADC2.

### INDIVIDUAL PROTECTION

- Protective ensembles that enable the Warfighter to **fight through** and **limit operational impact** of CBW use.
- *Example capabilities:* Rapid prototyping of novel textiles, suits, and masks

### MEDICAL RAPID RESPONSE SYSTEM

- Medical countermeasures and platforms that enable the Warfighter to **fight through** and **rapidly recover** from CB weapons.
- *Example capabilities:* Broad-spectrum MCMs, diagnostics, repurposed therapeutics, novel prophylactics

### CONTAMINATION MITIGATION

- Innovative decontaminants that have potential to **increase the speed and decrease the scale** necessary to perform decontamination activities.
- *Example capabilities:* Light-weight, tactically flexible applicators and decontaminants, autonomous decontamination

**ENABLERS:** High Performance Computing, Experimentation, Rapid Prototyping, AI/ML



# Integrated Experimentation Campaigns





# Questions