Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Chemical and Biological Defense Program	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605502BP / *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	26.967	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.967
SB6: *Small Business Innovative Research (SBIR)*	-	26.967	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.967

A. Mission Description and Budget Item Justification

The overall objective of the Chemical Biological Defense (CBD) Small Business Innovative Research (SBIR) program is to improve the transition or transfer of innovative CBD technologies between Department of Defense (DoD) components and the private sector for mutual benefit. The CBD SBIR program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	26.967	0.000	0.000	-	0.000
Total Adjustments	26.967	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	0.000	-			
• SBIR/STTR Transfer	26.967	-			
• Other Adjustments	0.000	-	-	-	-

Change Summary Explanation

Funding: FY21 (+$26.967 Million): Funding transferred and applied to Small Business Innovative Research program.

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502BP / *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	Project (Number/Name) SB6 / *Small Business Innovative Research (SBIR)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
SB6: *Small Business Innovative Research (SBIR)*	-	26.967	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.967
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Business Innovative Research (SBIR) Program is a Congressionally mandated program established to increase the participation of small business in federal research and development (R&D). Currently, each participating Government agency must reserve 3.2% of its extramural R&D for SBIR awards to competing small businesses. The goal of the SBIR Program is to invest in the innovative capabilities of the small business community to help meet Government R&D objectives while allowing small companies to develop technologies and products which they can then commercialize through sales back to the Government or in the private sector.

The Small Business Technology Transfer (STTR) Program like SBIR, is a Government-wide program, mandated by the Small Business Research and Development Enhancement Act of 1992, Public Law (PL) 102-564. STTR was established as a companion program to the SBIR Program and is executed in essentially the same manner; however, there are several distinct differences. The STTR Program provides a mechanism for participation by university, Federally-Funded Research and Development Centers (FFRDCs), and other non-profit research institutions. Specifically, the STTR Program is designed to provide an incentive for small companies and research at academic institutions and non-profit research and development institutions to work together to move emerging technical ideas from the laboratory to the marketplace to foster high-tech economic development and to advance U.S. economic competitiveness. Each STTR proposal must be submitted by a team which includes a small business (as the prime contractor for contracting purposes) and at least one research institution, which have entered into a Cooperative Research and Development Agreement for the purposes of the STTR effort. Furthermore, the project must be divided up such that the small business performs at least 40% of the work and the research institution(s) performs at least 30% of the work. The remainder of the work may be performed by either party or a third party. The budget is separate from the SBIR budget and is significantly smaller (0.45% of the extramural R&D budget vs. 3.2% for the SBIR Program).

The overall objective of the CBD SBIR/STTR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment. The executive agent for the SBIR/STTR portion of the CBDP is the Army Research Office-Washington.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) SBIR/STTR	26.967	0.000	0.000
Description: Small Business Innovative Research/Small Business Technology Transfer			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 6	**R-1 Program Element (Number/Name)** PE 0605502BP / *SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)*	**Project (Number/Name)** SB6 / *Small Business Innovative Research (SBIR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
- Detection ($5.8 million): prototype development and test & evaluation for bio-aerosol point detection and identification; Plume Characterization and Differentiation in Multimodal Threat Sensing; Remote LIBS + Laser Induced Thermal (Infrared) Emission (LITE) for in-situ Surface Contaminant Mapping & Identification. - Protection ($6.6 million): Engineered Beads for Chem-Bio Defense Personal Protective Equipment; Military Working Dog Decontamination Kit; On-site Treatment of Contaminated Equipment. - Physiological Monitoring ($2.2 million): Development of a Non-Invasive Device to Measure Changes in Intra-Cranial Pressure resulting from Viral or Bacterial Infections of the Central Nervous System. - Medical Therapeutics/Countermeasures ($5.9 million): Development of Small Molecule Therapeutics for Emerging Viral Agents; Optimized platforms for proper glycosylation and sialylation of recombinant human butyrylcholinesterase; Long Duration, Novel Opioid Medical Countermeasure for Intramuscular Injection; Marburg Virus Prophylactic Medical Countermeasures. - Medical CONOPS and Enhancements for Austere Environments ($1.1 million): Design, Testing and Production of Shatter Resistant Autoinjector Formula Containers. - Medical Diagnostics ($1.5 million): Circulating Diagnostic Markers of Infectious Disease. ***FY 2023 Plans:*** - Detection (estimated funding, $7.7 million): Addressing Surface-Enhanced Raman Scattering Substrate Development; Addressing Millimeter Wave Imaging with Metamaterials; Addressing Opioid Contamination Identification for Military Surfaces. - Protection (estimated funding, $7.7 million): Addressing CBRN Gloves with Improved Tactility and Touch-Screen Capability; Addressing On-Demand Generation of Hydrogen Peroxide for Vaporous Decontamination Systems; Addressing Plasma Decontamination of Biological Warfare Agents. - Medical Pretreatments (estimated funding, $2.2 million) - Medical Diagnostics (estimated funding, $2.2 million) - Medical Therapeutics Chemical/Biological Countermeasures (estimated funding, $5.5 million)			
Accomplishments/Planned Programs Subtotals	26.967	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A