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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense **Date:** March 2024

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 1: Basic Research</i>	R-1 Program Element (Number/Name) PE 0601120D8Z I <i>National Defense Education Program (NDEP)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	168.539	159.549	169.986	-	169.986	180.518	183.674	187.049	190.790	Continuing	Continuing
120: <i>National Defense Education Program (NDEP)</i>	0.000	168.539	159.549	169.986	-	169.986	180.518	183.674	187.049	190.790	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build Sustainable and Long-Term Advantage and Taking Care of People.

The National Defense Education Program (NDEP): (1) Fosters and enhances the Department of Defense's (DoD) ability to develop and access high-quality science, technology, engineering, and mathematics (STEM) talent vital to national defense, now and in the future; (2) Is executed by the Office of the Under Secretary of Defense for Research and Engineering (OUSDR&E); (3) Aligned to the Federal STEM Strategy, the NDEP addresses critical STEM education and talent development challenges using a continuous learning structure and evidence-based approaches; (4) Activities align with the Department's vision of a diverse STEM talent pool readily accessible to serve our Nation and evolve the Department's competitive edge; (5) DoD STEM and NDEP activities engage in assessment and evaluation practices as outlined by the Office of Management and Budget and the Government Accountability Office; and (6) Aligns to the DoD science, technology, engineering, and mathematics (STEM) Strategy in support of the National Defense Strategy and the DoD science and technology (S&T) modernization priorities.

Specifically, the NDEP is part of the broader Department-wide effort under DoD STEM, which works collectively with partners from academia, industry non-profit organizations, defense laboratories, and other government entities to: (1) build strong foundations for STEM literacy; (2) increase diversity, equity, and inclusion in STEM; and (3) prepare the STEM workforce of the future.

NDEP activities further support the DoD STEM effort in providing authentic learning experiences through a variety of education and outreach initiatives in the form of scholarships, internships, enrichment activities, competitions, and mentorships by leveraging partners from industry, academia, and other government organizations with a shared STEM mission. The DoD STEM programs span across all age groups, including kindergarten through twelfth grade (K-12) students and teachers and postsecondary, undergraduate, and graduate students.

The NDEP's portfolio includes: the Science, Mathematics, and Research for Transformation (SMART) program; STEM Education and Outreach efforts including the Defense STEM Education Consortium (DSEC); and specific Congressionally directed programs, to include the Manufacturing Engineering Education Program (MEEP) and broader NDEP funding opportunities in STEM education and workforce development. The SMART program awards highly competitive scholarships-for-service to undergraduate and graduate students in 24 STEM academic disciplines and hires the students, upon graduation, into DoD's workforce. As part of the SMART experience, scholars engage in internships that allow for relevant hands-on research and work experiences in DoD facilities, thereby enhancing their educational experience.

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SMART ensures the Department has a steady infusion of high-quality technical talent, prepared in areas of critical importance, and ready to apply their technical knowledge, skills, and abilities to fulfill the DoD mission. Since its inception in FY 2005, SMART has awarded approximately 4,700 scholarships to students pursuing undergraduate and graduate degrees. To date, nearly 3,000 students have completed their academic pursuit and transitioned into DoD employment with over 1,000 more currently pursuing their Science, Mathematics, and Research for Transformation (SMART)-funded degree. Over 2,000 participants have successfully completed the program through their DoD Service commitment.

The National Defense Education Program (NDEP) will continue to support the preparation of dependents of members of the armed forces for careers in Science, Technology, Education, and Math (STEM) as enacted under 10 USC 2192(b) in FY 2020.

STEM education and outreach activities and awardees through NDEP will continue to engage military connected students in collaboration with the Department of Defense Education Activity (DoDEA).

Additionally, where feasible, NDEP activities will also support the Supporting Veterans in STEM Careers Act, enacted in FY 2020. Science, technology, engineering, and mathematics (STEM) Education and Outreach is a multitude of cohesive and coordinated activities for PreK-16 students, teachers, and schools, especially those for underrepresented and underserved communities, to include military connected students. In March 2019, the Defense STEM Education Consortium (DSEC) was established to facilitate these efforts.

The DSEC is a consortium model approach that leverages a collaborative ecosystem/partnership between academia, industry, not-for-profit organizations, and government that aims to broaden STEM literacy and develop a diverse and agile workforce to power the United States' innovative defense infrastructure. The DSEC is a five-year, \$89.000 million investment, which comprises a diverse consortium of program partners and is designed to leverage evidence-based approaches to inspire and develop the U.S. science and technology future workforce. Finally, the DSEC is designed to evolve over time and has built-in Innovation Bloc (IB) funding which allows the consortium to address emerging issues in STEM education and potential gaps within the portfolio.

The DoD consistently seeks innovative scientific and technological solutions to address current and future military requirements. The Manufacturing Engineering Education Program (MEEP) will enhance existing or establish new education programs (or collection of programs), to better position the current and next generation manufacturing workforce to produce military systems and components that assure technological superiority for the Department.

The Biotechnology Education Program (BIOTECH) will establish new educational programs that align with BIOTECH Modernization priorities.

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B. Program Change Summary (\$ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	174.347	159.549	171.357	-	171.357
Current President's Budget	168.539	159.549	169.986	-	169.986
Total Adjustments	-5.808	0.000	-1.371	-	-1.371
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.791	-			
• Program Adjustments	-0.017	-	-1.714	-	-1.714
• Economic Assumptions	-	-	0.343	-	0.343

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 120: *National Defense Education Program (NDEP)*

Congressional Add: *SMART Diversification Activities*

Congressional Add: *Civil Society*

Congressional Add: *Manufacturing Engineering Education Program (MEEP)*

Congressional Add: *World Language Advancement and Readiness*

Congressional Add Subtotals for Project: 120

Congressional Add Totals for all Projects

	FY 2023	FY 2024
	1.933	-
	14.500	-
	14.500	-
	9.667	-
Congressional Add Subtotals for Project: 120	40.600	-
Congressional Add Totals for all Projects	40.600	-

Change Summary Explanation

A reduction of \$1.714 million in FY 2025 was applied to meet DoD overall funding reductions, which were spread to mitigate impact. Funding increase of \$0.343 million in FY 2025 for Economic Assumptions.

C. Accomplishments/Planned Programs (\$ in Millions)

	FY 2023	FY 2024	FY 2025
Title: Workforce Development - Science, Mathematics, and Research for Transformation (SMART) Defense Education Program	100.440	131.658	143.577
Description: SMART is a scholarship-for-service program that provides support to high performing U.S. graduate and undergraduate students in 24 academic science, technology, engineering, and mathematics (STEM) disciplines identified as areas of future workforce priorities for the DoD. SMART Scholars receive full tuition, a stipend, allotments for books and			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>health insurance, internships at a sponsoring DoD laboratory or agency, and guaranteed employment with the DoD upon degree completion. Students fulfill a one-for-one service commitment to the Department as a civilian employee for every year of scholarship provided.</p> <p>The disciplines awarded to align with the Department’s Science and Technology (S&T) priorities and emerging scientific research areas, such as: Aeronautical and Astronautical Engineering; Biomedical Engineering; Biosciences; Chemical Engineering; Chemistry; Civil Engineering; Cognitive, Neural, and Behavioral Sciences; Computer Science and Engineering; Cybersecurity; Data Science; Electrical Engineering; Environmental Sciences; Geosciences; Industrial and Systems Engineering; Information Sciences; Materials Science and Engineering; Mathematics; Mechanical Engineering; Naval Architecture and Ocean Engineering; Nuclear Engineering; Oceanography; Operations Research; Physics; and Software Engineering.</p> <p>Upon completion of their degree, students fulfill a service commitment to the Department on a one-to-one payback per year of education funded.</p> <p>Since FY 2005, the Science, Mathematics, and Research for Transformation (SMART) program has awarded approximately 4,700 scholarships to scholars engaging with 211 sponsoring facilities across the entire DoD, including the Army, Navy, Air Force and other DoD agencies. Over 90% of the participants have successfully completed, or are on track to complete, both their SMART-funded degree pursuit and their DoD employment agreement. Oversight of the SMART program falls under the purview of Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) with execution at the Component level.</p> <p>Two types of individuals participate in the program: (1) retention scholars who are current DoD employees; and (2) recruitment scholars who are students enrolled in undergraduate and graduate programs and represent new technical expertise for the Department. Internships provide Science, Mathematics, and Research for Transformation (SMART) scholars with the opportunity to engage in the DoD science and technology enterprise through research and work experiences in defense laboratories, thereby enhancing their educational experience and understanding the relevance of DoD research priority areas.</p> <p>Oversight of the SMART program falls under the purview of Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) with execution at the Component level.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> • Award 450-500 new scholars (projected). • Continue strategic HBCU/MI initiative to increase diversity of the applicant pool and awareness of research and STEM initiatives that meet DoD Component and Laboratory mission needs and the modernization priority areas. 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<ul style="list-style-type: none"> • Conduct an annual forum for current and prospective DoD sponsoring facilities (SFs) to highlight SMART program benefits, share best practices, and enhance technical engagement with scholars, HBCU/MIs, and OSD leadership. • Continue to optimize SMART Information Management System (SIMS) to identify process efficiencies in data collection, communication, and virtual engagement with scholars, SFs, SMART Advisory Council, program office and support staff. • Increase SEED research grant awards to scholars who have pursued a PhD through the Science, Mathematics, and Research for Transformation (SMART) program and are currently in the service commitment phase of their scholarship. <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> • Continue FY 2024 efforts. • Continue expansion of the SMART Diversity Initiative per the Sections 242 and 250 of the National Defense Authorization Act (NDAA) for FY 2021 by expanding strategic recruiting partnerships with affinity groups, non-profits, and academic institutions focused on serving underrepresented students in Science, Technology, Engineering, and Mathematics (STEM). • Increase Awards to 525-575 to meet DoD sponsoring facility demand. • Increase the number of awards for the SMART SEED grant. • Expand the SMART Creative Research and Engineering Advancing Technical Equity in STEM (CREATES) grant to support SMART scholar graduates of and collaborations with historically Black colleges and universities, minority institutions, or minority serving institutions in alignment with the SMART Diversity Initiative and Sections 242 and 250 of the NDAA for FY 2021. <p>FY 2024 to FY 2025 Increase/Decrease Statement: The increase of \$11.919 million will increase the number of SMART scholarships awarded in FY 2025 by 75-125 to 525-575 total scholarships to help meet the Department of Defense STEM workforce needs. It will also provide for a 25% increase in the number of SMART SEED and CREATES grant awards.</p>			
<p>Title: Science, Technology, Engineering, and Mathematics (STEM) Education and Outreach</p> <p>Description: The STEM Education and Outreach activities provides learners and educators across the pre-K to 16+ continuum unique experiences aimed to inspire, cultivate, and develop exceptional STEM talent poised to tackle evolving defense technological challenges.</p>	25.566	25.891	24.409

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2023	FY 2024	FY 2025
<p>In order to build a workforce that solves national defense needs and challenges, the DoD recognizes the necessity for increased participation of underserved groups in STEM activities and education programs.</p> <p>Investments are made to promote participation in national-level STEM programs and initiatives and provide authentic learning experiences for students and teachers across the globe.</p> <p>STEM Education and Outreach activities are aligned to the Department's STEM Strategic Plan, support the Federal STEM Education Strategic Plan, and enable the Department to have enduring access to STEM talent, now and into the future.</p> <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> • Continue to provide STEM Education and Outreach activities with emphasis on authentic hands-on experiences to students and teachers and evaluate the effectiveness of the increased outreach. • Continue to leverage Defense STEM Education Consortium (DSEC) partnerships, STEM ecosystems, and other government partnerships to amplify awareness and broaden reach. • Continue to participate in inter- and intra-departmental collaboration with stakeholders to achieve Federal and DoD STEM objectives. • Continue the experience of DoD supported STEM education and outreach opportunities to reach all populations, through consideration of the barriers faced by underserved and underrepresented populations. • Publish a five-year report on establishing baseline metrics and reporting on EAC efforts across the Department. <p>FY 2025 Plans:</p> <ul style="list-style-type: none"> • Continue strategic partnerships and collaboration under the Defense STEM Education Consortium to inspire and develop talent as early as K-12 and empower educators to provide meaningful STEM learning experiences. • Continue to cultivate and incentivize Components' innovative approaches to STEM talent development through intramural activities. <p>FY 2024 to FY 2025 Increase/Decrease Statement: The decrease of \$1.482 million is due to an anticipated reduction in costs under a new DSEC cooperative agreement award for the base year of the award.</p>				
Title: Biotechnology (BIOTECH) Education Program		1.933	2.000	2.000

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2023	FY 2024	FY 2025
<p>Description: In order to build a Biotechnology Education Program (BIOTECH) workforce that solves national defense needs and challenges, the DoD recognizes the importance of supporting domestic programs that motivate young people to pursue education and career opportunities in biotechnology.</p> <p>FY 2024 Plans: Support DoD and Federal STEM Education Strategy and Department’s BIOTECH Roadmap in building biotechnology literacy, diversity and inclusion and developing the future biotech workforce.</p> <p>FY 2025 Plans: Continue to support DoD and Federal STEM Education Strategy and Department’s BIOTECH Roadmap in building biotechnology literacy, diversity and inclusion in developing the future biotech workforce.</p> <p>FY 2024 to FY 2025 Increase/Decrease Statement: No change in FY 2025.</p>			
Accomplishments/Planned Programs Subtotals	127.939	159.549	169.986

	FY 2023	FY 2024
<p>Congressional Add: SMART Diversification Activities</p> <p>FY 2023 Accomplishments: The program will continue to support the requirements of Sections 242 and 250 of the FY 2021 NDAA and the Department’s strategic goals in Diversity, Equity, Inclusion, and Accessibility.</p> <p>Funding will be executed under the SMART cooperative agreement award to increase the number of scholarship awards, establish incentivized strategic partnerships with HBCU/MIs and affinity groups, and/or support new program initiatives to support historically underrepresented scholars during their service commitment phase.</p> <p>These efforts lend to the SMART Program’s strategic goal of diversifying the applicant and award pools, which will ultimately diversify the Department’s technical talent needed to address critical technologies now and in the future.</p>	1.933	-
<p>Congressional Add: Civil Society</p> <p>FY 2023 Accomplishments: Publish an open competition under the NDEP Broad Agency Announcement to identify, award, and work with universities with ethics and public affairs programs to promote civil society education and outreach, including among military and non-military communities.</p>	14.500	-
<p>Congressional Add: Manufacturing Engineering Education Program (MEEP)</p>	14.500	-

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	FY 2023	FY 2024
<p>FY 2023 Accomplishments: Publish an open competition under the NDEP Broad Agency Announcement to identify, award, and work with academia, industry, not-for-profit organization, local and/or state educational agencies to enhance existing programs in manufacturing engineering education to further the mission of the department; or the establishment of new programs in manufacturing engineering education as described under 10 U.S. Code 4843.</p> <p>Coordinate with DoD Manufacturing Technology Program’s Education and Workforce Development, and the DoD Industrial Base Analysis and Sustainment.</p>		
<p>Congressional Add: World Language Advancement and Readiness</p> <p>FY 2023 Accomplishments: Subject effort will be re-allocated to the Department of Defense Education Activity (DoDEA). DoDEA has executed World Language grants in 2019 upon enactment of the World Language Advancement and Readiness Act.</p>	9.667	-
Congressional Adds Subtotals	40.600	-

D. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A