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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Office of the Secretary Of Defense **Date:** March 2023

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
0400: Research, Development, Test & Evaluation, Defense-Wide / BA 1: Basic Research					PE 0601120D8Z / National Defense Education Program (NDEP)							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	140.061	174.347	159.549	-	159.549	171.357	182.008	185.207	188.612	Continuing	Continuing
120: National Defense Education Program (NDEP)	-	140.061	174.347	159.549	-	159.549	171.357	182.008	185.207	188.612	Continuing	Continuing

**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 21 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.

Since its inception as a pilot program in FY 2005, SMART has awarded approximately 4,200 scholarships to students pursuing undergraduate to doctoral studies. To date, nearly 2,800 students have completed their academic pursuit and transitioned into DoD employment with over 1,000 more currently pursuing their SMART-funded

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degree. Over 2,000 participants have successfully completed the program through their DoD Service commitment. SMART ensures the Department has a steady infusion of high-quality technical talent, prepared in areas of critical importance to DoD, and ready to apply their technical knowledge, skills, and abilities to fulfill DoD's mission.

The NDEP will continue to support the preparation of dependents of members of the armed forces for careers in STEM as enacted under 10 USC 2192(b) in FY 2020.

STEM education and outreach activities and awardees through NDEP Congressional Adds 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 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	144.841	132.347	142.716	-	142.716
Current President's Budget	140.061	174.347	159.549	-	159.549
Total Adjustments	-4.780	42.000	16.833	-	16.833
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	42.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.758	-			
• Program Adjustments	-0.022	-	16.833	-	16.833

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

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

Congressional Add: *Civics Education*

Congressional Add: *SMART Diversification Activities*

Congressional Add: *STEM Programs*

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

	<b>FY 2022</b>	<b>FY 2023</b>
	2.000	-
	2.000	2.000
	14.000	-
	15.000	15.000
	-	15.000
	-	10.000
Congressional Add Subtotals for Project: 120	33.000	42.000
Congressional Add Totals for all Projects	33.000	42.000

**Change Summary Explanation**

FY 2024 funding increase is comprised of a realignment of \$3.106 million to support the Historically Black Colleges and Universities/ Minority Serving Institutions program, which is a priority of the Under Secretary of Defense for Research and Engineering (USD(R&E)); \$0.149 million to support departmental priorities; increase of \$19.300 for workforce development in Science, Mathematics and Research for Transformation (SMART) and \$0.788 for economic assumptions.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Title:</b> Workforce Development - Science, Mathematics, and Research for Transformation (SMART) Defense Education Program	84.063	103.900	131.658

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
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**Description:** Description: SMART is a scholarship-for-service program that provides support to high performing U.S. graduate and undergraduate students in 21 academic science, technology, engineering, and mathematics (STEM) disciplines identified as areas of future workforce priorities for the DoD.

The disciplines 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 and Computational Sciences/Computer Engineering; 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; and Physics.

Upon completion of their degree, students fulfill a service commitment to the Department on a one-to-one payback per year of education funded.

Since FY 2005, the SMART program has awarded approximately 3,400 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.

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 an 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.

**FY 2023 Plans:**

- Award 350-400 new scholars (projected).
- Implement strategic Historically Black Colleges and Universities/ Minority Serving Institutions (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.

<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Increase SEED research grant awards to scholars who have pursued a PhD through the SMART program and are currently in the service commitment phase of their scholarship.</li> </ul> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>• Award 450-500 new scholars (projected).</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The increase of \$27.758 million allows the program to increase the number of scholarships to be awarded in FY 2024 by an additional 150 scholarships which will help meet the DoD's workforce needs.</p> <p>In addition, the increase will allow the program to support upwards of 50 existing and new successful SMART SEED grants allowing PhD scholars during their employment obligation phase, as well as provide opportunities to establish strategic partnerships aimed at broadening diversity among program applicants.</p>				
<b>Title:</b> Science, Technology, Engineering, and Mathematics (STEM) Education and Outreach		20.998	26.447	25.891

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<p><b>Description:</b> 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> <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><b>FY 2023 Plans:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Continue to leverage Defense STEM Education Consortium (DSEC) partnerships, STEM ecosystems, and other government partnerships to amplify awareness and broaden reach.</li> <li>• Continue to participate in inter- and intra-departmental collaboration with stakeholders to achieve Federal and DoD STEM objectives.</li> <li>• Continue to expand 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.</li> <li>• Publish a five-year report on establishing baseline metrics and reporting on EAC efforts across the Department.</li> </ul> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Continue to leverage Defense STEM Education Consortium (DSEC) partnerships, STEM ecosystems, and other government partnerships to amplify awareness and broaden reach.</li> </ul>			

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<ul style="list-style-type: none"> <li>• Continue to participate in inter- and intra-departmental collaboration with stakeholders to achieve Federal and DoD STEM objectives.</li> <li>• 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.</li> <li>• Publish a five-year report on establishing baseline metrics and reporting on EAC efforts across the Department.</li> </ul> <p><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> The decrease of \$0.556 million is due to an anticipated reduction in contract support costs.</p>			
<p><b>Title:</b> Biotechnology (BIOTECH) Education Program</p> <p><b>Description:</b> 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><b>FY 2023 Plans:</b> Support DoD and Federal Science, Technology, Engineering, and Mathematics (STEM) Education Strategy and Department's Biotechnology (BIOTECH) Roadmap in building biotechnology literacy, diversity and inclusion, and developing the future biotech workforce.</p> <p><b>FY 2024 Plans:</b> 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><b>FY 2023 to FY 2024 Increase/Decrease Statement:</b> No change for FY 2024.</p>	2.000	2.000	2.000
<b>Accomplishments/Planned Programs Subtotals</b>	107.061	132.347	159.549

<b>Congressional Add:</b> Civics Education	<b>FY 2022</b>	<b>FY 2023</b>
<b>FY 2022 Accomplishments:</b> Section 234 of the National Defense Authorization Act (NDAA) for FY 2020 established a pilot program to enhance educational offerings that address critical thinking and media literacy;	2.000	-

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		<b>FY 2022</b>	<b>FY 2023</b>
voting and other forms of political and civic engagement; understanding the U.S. law, history, and Government; and interest in employment and careers in public service.			
Funding was applied to outreach activities to amplify the public’s awareness of Science, Technology, Engineering, and Mathematics (STEM) careers in the Department.			
<b>Congressional Add:</b> SMART Diversification Activities		2.000	2.000
<b>FY 2022 Accomplishments:</b> The program increase will support the requirements of Sections 242 and 250 of the NDAA for FY 2021 and the Department’s strategic goals in Diversity, Equity, Inclusion, and Accessibility.			
Funding was used to increase the number of scholarship awards, establish incentivized strategic recruiting partnerships with Historically Black Colleges and Universities/ Minority Serving Institutions (HBCU/MI) and affinity groups, and/or support new program initiatives to support underrepresented scholars during their service commitment phase.			
These efforts lend to the Science, Mathematics, and Research for Transformation (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.			
<b>FY 2023 Plans:</b> 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.			
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.			
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.			
<b>Congressional Add:</b> STEM Programs		14.000	-
<b>FY 2022 Accomplishments:</b> Pursued projects in partnership with organizations with an established history of providing scholarships to students pursuing an education in these fields.			
<b>Congressional Add:</b> Civil Society		15.000	15.000

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	FY 2022	FY 2023
<b>FY 2022 Accomplishments:</b> Identified and worked with universities with ethics and public affairs programs to promote civil society education and outreach, including among military and non-military communities.		
<b>FY 2023 Plans:</b> 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.		
<b>Congressional Add:</b> Manufacturing Engineering Education Program (MEEP) <b>FY 2023 Plans:</b> 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.  Coordinate with DoD Manufacturing Technology Program's Education and Workforce Development, and the DoD Industrial Base Analysis and Sustainment.	-	15.000
<b>Congressional Add:</b> World Language Advancement and Readiness <b>FY 2023 Plans:</b> 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.	-	10.000
<b>Congressional Adds Subtotals</b>	33.000	42.000

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

N/A

**Remarks**

**E. Acquisition Strategy**

N/A