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Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy **Date:** May 2021

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 1: Basic Research</i>	R-1 Program Element (Number/Name) PE 0601152N / <i>In-House Lab Independent Res</i>
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COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	18.337	19.030	0.000	-	0.000	-	-	-	-	-	-
0000: <i>In-House Lab Independent Res</i>	0.000	18.337	19.030	0.000	-	0.000	-	-	-	-	-	-

Note

Effective in FY 2022, In-house Laboratory Independent Research (ILIR) efforts and associated requirements are realigned from Program Element (PE) 0601152N, Project 0000 to PE 0601153N, Project 3465, and Science, Technology, Engineering and Math (STEM) efforts are realigned to PE 0601153N, Project 0000.

A. Mission Description and Budget Item Justification

The Office of Naval Research's (ONR) mission is to ensure the technological advantage of U.S. Naval forces. ONR fosters scientific research necessary for the discovery, development and delivery of new technologies. Naval laboratories funded by ONR provide cutting-edge solutions and to Navy and national challenges. The In-house Laboratory Independent Research (ILIR) program provides opportunities to strengthen the Naval Science and Engineering (S&E) workforce capabilities through basic research conducted at the Naval Warfare Centers and Laboratories. These research efforts address high risk/high payoff warfighter science and technological needs, as well as attract the next generation of researchers to consider employment within the Department of the Navy. ILIR also provides opportunities for advanced degrees, technical publications, presentations, and patents. The Science and Engineering Apprenticeship Program (SEAP) and the Naval Research Enterprise Intern Program (NREIP) summer programs encourage students to pursue science and engineering careers, further their education via mentoring by laboratory personnel, and participate in research, which can lead to employment within the Department of the Navy.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research, coordinated across the Naval Research Enterprise (NRE), and outlined in the Naval R&D Framework.

This Program Element (PE) funds Basic Research and systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. The work in this PE can be classified between Technology Readiness Level (TRL) 1 (basic principles observed and reported) and TRL 2 (technology concept and/or application formulation).

Due to the number of efforts in PE 0601152N, the programs described herein are representative of the work included in this PE.

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B. Program Change Summary (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	19.121	19.113	19.492	-	19.492
Current President's Budget	18.337	19.030	0.000	-	0.000
Total Adjustments	-0.784	-0.083	-19.492	-	-19.492
• Congressional General Reductions	-	-0.083			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.360	0.000			
• SBIR/STTR Transfer	-0.424	0.000			
• Program Adjustments	0.000	0.000	-19.492	-	-19.492
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Change Summary Explanation

Funding: The funding decrease in FY22 is due to In-house Laboratory Independent Research (ILIR) and Science, Technology, Engineering and Math (STEM) efforts realigned to PE 0601153N.

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Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601152N / <i>In-House Lab Independent Res</i>				Project (Number/Name) 0000 / <i>In-House Lab Independent Res</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
0000: <i>In-House Lab Independent Res</i>	0.000	18.337	19.030	0.000	-	0.000	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Office of Naval Research's (ONR) mission is to ensure the technological advantage of U.S. Naval forces. ONR fosters scientific research necessary for the discovery, development and delivery of new technologies. Naval laboratories funded by ONR provide cutting-edge solutions and to Navy and national challenges. The In-house Laboratory Independent Research program provides opportunities to strengthen the Naval Science and Engineering workforce capabilities through basic research conducted at the Naval Warfare Centers and Laboratories. These research efforts address high risk/high payoff warfighter science and technological needs, as well as attract the next generation of researchers to consider employment within the Department of the Navy. ILIR also provides opportunities for advanced degrees, technical publications, presentations, and patents. The Science and Engineering Apprenticeship Program (SEAP) and the Naval Research Enterprise Intern Program (NREIP) summer programs encourage students to pursue science and engineering careers, further their education via mentoring by laboratory personnel, and participate in research, which can lead to employment within the Department of the Navy.

This project sustains U.S. Naval S&T superiority, provides new technological concepts for the maintenance of naval power and national security, and mitigates scientific surprises, while exploiting scientific breakthroughs and providing options for new Future Naval Capabilities. It addresses the S&T research areas of the Naval Research and Development Framework for long term Navy and Marine Corps improvements. It is in consonance with future warfighting concepts and doctrine developed at the Naval Warfare Development Command and the Marine Corps Combat Development Command and enables technologies that significantly improve the Joint Chiefs of Staff's Future Joint Warfighting Capabilities.

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

	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: In-House Laboratory Independent Research (ILIR)	15.883	16.508	0.000	0.000	0.000
Description: The In-house Laboratory Independent Research program provides opportunities to strengthen the Naval Science and Engineering workforce capabilities through basic research conducted at the Naval Warfare Centers and Laboratories. These research efforts address high risk/high payoff warfighter science and technological needs, as well as attract the next generation of researchers to consider employment within the Department of the Navy. ILIR also provides opportunities for advanced degrees, technical publications, presentations, and patents.					
FY 2021 Plans: Further develop and maintain the Science and Engineering workforce by providing funding to Naval Warfare Centers and Laboratories to foster high risk/ high reward basic research initiatives of Naval interest. Each of the					

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
<p>Naval sites will evaluate existing research projects and propose new topics. All efforts will be selected based on warfighter needs, researcher capabilities, and science and technology alignment.</p> <p>FY 2022 Base Plans: N/A</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: The decrease from FY 2021 to FY 2022 is due to the realignment of resources and associated requirements from Program Element (PE) 0601152N, Project 0000 to PE 0601153N, Project 3465.</p>					
<p>Title: Science Technology Engineering and Math (STEM) Efforts at Navy Labs</p> <p>Description: This effort will support both the Science and Engineering Apprenticeship Program (SEAP) and the Naval Research Enterprise Intern Program (NREIP) summer programs to encourage participating students to pursue science and engineering careers, to further their education via mentoring by laboratory personnel and their participation in research, and to make them aware of Department of the Navy (DON) research and technology efforts, which can lead to employment within the DON. Participating students will spend eight to ten weeks during the summer doing research at approximately 19 to 20 DON laboratories.</p> <p>FY 2021 Plans: Provide opportunities for high school (SEAP) and college/ graduate students (NREIP) to participate in Navy and Marine Corps-relevant research at Naval Warfare Centers and Laboratories. Increase the number of participating sites, mentors, and interns from previous fiscal years. Distribute summary charts of each intern's work and accomplishments to Naval sites and conduct return-on-investment analysis to improve participant impact and future retention.</p> <p>FY 2022 Base Plans: N/A</p> <p>FY 2022 OCO Plans: N/A</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>	2.454	2.522	0.000	0.000	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
The decrease from FY 2021 to FY 2022 is due to the realignment of resources and associated requirements from Program Element (PE) 0601152N, Project 0000 to PE 0601153N.					
Accomplishments/Planned Programs Subtotals	18.337	19.030	0.000	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

Not applicable.