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Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 3: Advanced Technology Development (ATD)					R-1 Program Element (Number/Name) PE 0603729N / Warfighter Protection Adv Tech							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	0.000	34.894	4.789	4.878	-	4.878	4.877	4.878	4.879	4.977	Continuing	Continuing
2914: Warfighter Protection Adv Tech	0.000	4.481	4.789	4.878	-	4.878	4.877	4.878	4.879	4.977	Continuing	Continuing
9999: Congressional Adds	0.000	30.413	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.413

A. Mission Description and Budget Item Justification

The efforts described in this Program Element (PE) are based on investment directions as defined in the Naval S&T Strategic Plan approved by the S&T Corporate Board (20 Jan 2015). This strategy is based on needs and capabilities from Navy and Marine Corps guidance and input from the Naval Research Enterprise (NRE) stakeholders (including the Naval enterprises, the combatant commands, the Chief of Naval Operations (CNO), and Headquarters Marine Corps). It provides the vision and key objectives for the essential science and technology efforts that will enable the continued supremacy of U.S. Naval forces in the 21st century. The Strategy focuses and aligns Naval S&T with Naval missions and future capability needs that address the complex challenges presented by both rising peer competitors and irregular/asymmetric warfare.

This program supports the development and demonstration of field medical equipment and technologies to improve warfighter safety and to enhance personnel performance under adverse conditions. Navy investment in these areas is essential because Navy/USMC mission needs are not adequately addressed by the civilian sector or other Federal agencies.

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

B. Program Change Summary (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	36.299	4.789	4.878	-	4.878
Current President's Budget	34.894	4.789	4.878	-	4.878
Total Adjustments	-1.405	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.206	0.000			
• SBIR/STTR Transfer	-1.198	0.000			
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

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<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u> Project: 9999: <i>Congressional Adds</i> Congressional Add: <i>CW Bill Young Marrow Donor Program</i>		FY 2016	FY 2017
		30.413	0.000
Congressional Add Subtotals for Project: 9999		30.413	0.000
Congressional Add Totals for all Projects		30.413	0.000
<u>Change Summary Explanation</u> Technical: Not applicable. Schedule: Not applicable.			

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 3					R-1 Program Element (Number/Name) PE 0603729N / Warfighter Protection Adv Tech				Project (Number/Name) 2914 / Warfighter Protection Adv Tech			
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2914: Warfighter Protection Adv Tech	0.000	4.481	4.789	4.878	-	4.878	4.877	4.878	4.879	4.977	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports the development and demonstration of field medical equipment, diagnostic capabilities and treatments; technologies to improve warfighter safety and to enhance personnel performance under adverse conditions; and systems to prevent occupational injury and disease in hazardous, deployment environments. Navy investment in these areas is essential because Navy/USMC mission needs are not adequately addressed by the civilian sector or other Federal agencies. For example, civilian emergency medicine does not address casualty stabilization during long transit times to definitive care. The National Institutes for Health (NIH) focuses on the basic science of disease processes and not product development. Programs are coordinated with other Services through the Armed Services Biomedical Research Evaluation and Management (ASBREM) Committee to prevent duplication of effort.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: NAVAL NOISE-INDUCED HEARING LOSS (NIHL)	4.481	4.789	4.878	0.000	4.878
Description: The goal of this program is to reduce the incidence of NIHL by nearly 100%. This program employs a total systems engineering approach that includes advancements in medical technology, jet engine physics, personal protective equipment, and mitigation analyses.					
FY 2016 Accomplishments: NOISE INDUCED HEARING LOSS					
- Continued advanced research in medical prevention and treatment of NIHL and tinnitus (ringing in the ears).					
- Continued advanced research to reduce noise at the source, jet engine quieting and flight deck noise reduction.					
- Continued advanced research to improve personal protective equipment technology.					
- Continued advanced research to study the incidence and susceptibility of NIHL and tinnitus, and to evaluate mitigation strategies.					
REGENERATIVE MEDICINE					
- Continued program with Army, in regenerative medicine (Armed Forces Institute of Regenerative Medicine (AFIRM II)).					
FY 2017 Plans:					
- Continue all efforts of FY 2016.					
FY 2018 Base Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
NOISE INDUCED HEARING LOSS Conduct advanced research in medical prevention and treatment of NIHL and tinnitus. Investigate the incidence and susceptibility of NIHL and tinnitus, and evaluate mitigation strategies. Study the reduction of noise at the source, jet engine quieting and flight deck noise reduction and improve personal protective equipment technology.						
REGENERATIVE MEDICINE Conduct advanced research in regenerative medicine with the Armed Forces Institute of Regenerative Medicine (AFIRM).						
FY 2018 OCO Plans: N/A						
Accomplishments/Planned Programs Subtotals		4.481	4.789	4.878	0.000	4.878
C. Other Program Funding Summary (\$ in Millions)						
N/A						
Remarks						
D. Acquisition Strategy						
N/A						
E. Performance Metrics						
Efforts within this PE are measured at two levels. At the lower level, each is measured against technical and financial milestones on a monthly basis. Annually, each project is reviewed in depth for technical and transition performance by the Chief of Naval Research (CNR).						

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COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
9999: Congressional Adds	0.000	30.413	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.413
<p>A. Mission Description and Budget Item Justification Congressional Interest Items not included in other Projects.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2016	FY 2017			
<p>Congressional Add: CW Bill Young Marrow Donor Program</p> <p>FY 2016 Accomplishments: National Marrow Donor Program (NMDP) will continue to expand participation of transplant centers increasing the enrollment of volunteer donors to the national registry. Hospitals that participate in both the NMDP Network of treatment centers as well as the NDMS managed by the Department of Health and Human Services.</p> <p>Scientific Advances: Continue improvements in accuracy of the NMDP scientific and clinical matching system, Haplogic III and linked to the NMDP clinical data system (Phoenix).</p> <p>FY 2017 Plans: N/A</p>								30.413	0.000			
Congressional Adds Subtotals								30.413	0.000			
<p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p>												
<p>D. Acquisition Strategy N/A</p>												
<p>E. Performance Metrics Congressional Interest Items not included in other Projects.</p>												