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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army **Date:** April 2022

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 1: Basic Research</i>	R-1 Program Element (Number/Name) PE 0601103A / <i>University Research Initiatives</i>
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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	-	84.697	91.241	70.775	-	70.775	71.842	72.491	72.516	72.496	0.000	536.058
AB3: <i>MURI/PECASE/DURIP</i>	-	64.697	66.241	70.775	-	70.775	71.842	72.491	72.516	72.496	0.000	491.058
D58: <i>URI ACTIVITIES (CA)</i>	-	20.000	25.000	-	-	-	-	-	-	-	0.000	45.000

A. Mission Description and Budget Item Justification

This Program Element (PE) supports the Multidisciplinary University Research Initiative (MURI), the Defense University Research Instrumentation Program (DURIP), and the Presidential Early Career Awards for Scientists and Engineers (PECASE) program. The MURI program funds university based basic research in a wide range of scientific and engineering disciplines pertinent to maintaining land combat technology superiority. Army MURI efforts involve teams of researchers investigating high-priority, transformational topics that intersect more than one traditional technical discipline (e.g., Intelligent Luminescence for Communication, Display, and Identification). For many complex problems, this multidisciplinary approach serves to accelerate research progress and expedite transition of results to application. The DURIP provides funds to acquire major research equipment to augment current, or devise new, research capabilities in support of Army transformational research. The PECASE program funds single-investigator research efforts performed by outstanding academic scientists and engineers early in their independent research careers.

Work in this PE provides a foundation for applied research initiatives at the Army laboratories and research, development and engineering centers.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	84.697	66.981	0.000	-	0.000
Current President's Budget	84.697	91.241	70.775	-	70.775
Total Adjustments	0.000	24.260	70.775	-	70.775
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	25.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	70.775	-	70.775
• FFRDC Transfer	-	-0.740	-	-	-

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

Project: D58: *URI ACTIVITIES (CA)*

Congressional Add: *Program increase*

Congressional Add: *Defense University Research Instrumentation Program*

Congressional Add Subtotals for Project: D58

Congressional Add Totals for all Projects

	FY 2021	FY 2022
	20.000	-
	-	25.000
Congressional Add Subtotals for Project: D58	20.000	25.000
Congressional Add Totals for all Projects	20.000	25.000

Change Summary Explanation

Fiscal Year 2023 (FY23) funding increase reflects the fact that the FY22 President's Budget request did not include out-year funding.

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Appropriation/Budget Activity 2040 / 1					R-1 Program Element (Number/Name) PE 0601103A / <i>University Research Initiatives</i>				Project (Number/Name) AB3 / <i>MURI/PECASE/DURIP</i>			
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
AB3: <i>MURI/PECASE/DURIP</i>	-	64.697	66.241	70.775	-	70.775	71.842	72.491	72.516	72.496	0.000	491.058

A. Mission Description and Budget Item Justification

This Project supports the Multidisciplinary University Research Initiative (MURI), the Defense University Research Instrumentation Program (DURIP), and the Presidential Early Career Awards for Scientists and Engineers (PECASE) program. The MURI program funds university based basic research in a wide range of scientific and engineering disciplines pertinent to maintaining land combat technology superiority. Army MURI efforts involve teams of researchers investigating high-priority, transformational topics that intersect more than one traditional technical discipline. For many complex problems, this multidisciplinary approach serves to accelerate research progress and expedite transition of results to application. The DURIP provides funds to acquire major research equipment to augment current, or devise new, research capabilities in support of Army transformational research. The PECASE program funds single-investigator research efforts performed by outstanding academic scientists and engineers early in their research careers. Work in this Project provides a foundation for applied research initiatives at the Army laboratories and centers.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

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

	FY 2021	FY 2022	FY 2023
Title: Multidisciplinary University Research Initiative	52.117	51.762	57.506
Description: The Multidisciplinary University Research Initiative (MURI) program is a tri-service Department of Defense (DoD) program that supports extra-mural teams whose basic research efforts intersect more than one traditional science and engineering discipline. A multidisciplinary team effort, usually from several collaborating universities, can accelerate research progress in areas particularly suited to this approach by cross- fertilization of ideas, hasten the transition of basic research findings to practical applications, and help to train students in science, technology and/or engineering in areas of importance to DoD. MURI programs are typically five years in length at a cost of \$1.25 million each per year.			
FY 2022 Plans: Will provide support for MURI awards made in prior years and assess and initiate six to eight Fiscal Year 2022 (FY22) MURI new starts to enable advances in select interdisciplinary basic science and/or engineering research areas determined to be of critical importance to national defense.			
FY 2023 Plans: Will provide support for MURI awards made in prior years and initiate six to eight FY23 MURI new starts to enable advances in select interdisciplinary basic science and/or engineering research areas determined to be of critical importance to national defense			
FY 2022 to FY 2023 Increase/Decrease Statement:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
Funding change reflects planned lifecycle of this effort.				
<p>Title: Presidential Early Career Awards for Scientists and Engineers</p> <p>Description: Supports Presidential Early Career Awards for Scientists and Engineers (PECASE) investigators started in prior years as well as new award recipients.</p> <p>FY 2022 Plans: Will support prior year awardees and assess and recommend four new PECASE candidates.</p> <p>FY 2023 Plans: Will support prior year awardees and assess and recommend four new PECASE candidates in FY23.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.</p>		4.686	4.510	4.986
<p>Title: Defense University Research Instrumentation Program</p> <p>Description: Supports basic research through competitive grants for research instrumentation.</p> <p>FY 2022 Plans: Will assess and award competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research and enhance educational capabilities critical to Army transformation and modernization.</p> <p>FY 2023 Plans: Will assess and award competitive grants for research instrumentation to enhance universities' capabilities to conduct world-class research and enhance educational capabilities critical to Army transformation and modernization.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.</p>		7.894	7.525	8.283
<p>Title: FY2022 SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2022 Plans: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>		-	2.444	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred in accordance with Title 15 USC ?638			
Accomplishments/Planned Programs Subtotals	64.697	66.241	70.775

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Appropriation/Budget Activity 2040 / 1					R-1 Program Element (Number/Name) PE 0601103A / <i>University Research Initiatives</i>				Project (Number/Name) D58 / <i>URI ACTIVITIES (CA)</i>			
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
D58: <i>URI ACTIVITIES (CA)</i>	-	20.000	25.000	-	-	-	-	-	-	-	0.000	45.000

Note

Congressional Interest Item.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for University Research Initiatives.

The cited work is consistent with the Under Secretary of Defense for Research and Engineering priority focus areas and the Army Modernization Strategy.

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

	FY 2021	FY 2022
Congressional Add: Program increase	20.000	-
FY 2021 Accomplishments: Congressional Increase. Basic research to support University Research Initiatives.		
Congressional Add: Defense University Research Instrumentation Program	-	25.000
FY 2022 Plans: Congressional Interest Item funding provided for Defense University Research Instrumentation Program		
Congressional Adds Subtotals	20.000	25.000

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

N/A

Remarks

D. Acquisition Strategy

N/A