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

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 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	-	85.148	84.697	66.981	-	66.981	-	-	-	-	-	-
AB3: <i>MURI/PECASE/DURIP</i>	-	63.148	64.697	66.981	-	66.981	-	-	-	-	-	-
D55: <i>University Research Initiative</i>	-	22.000	-	-	-	-	-	-	-	-	-	-
D58: <i>URI ACTIVITIES (CA)</i>	-	-	20.000	-	-	-	-	-	-	-	-	-

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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	87.858	67.148	68.487	-	68.487
Current President's Budget	85.148	84.697	66.981	-	66.981
Total Adjustments	-2.710	17.549	-1.506	-	-1.506
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.710	-2.451			
• Adjustments to Budget Years	-	-	-1.506	-	-1.506

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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Project: D58: <i>URI ACTIVITIES (CA)</i>		
Congressional Add: <i>Program increase</i>	-	20.000
Congressional Add Subtotals for Project: D58	-	20.000
Congressional Add Totals for all Projects	-	20.000

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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 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
AB3: <i>MURI/PECASE/DURIP</i>	-	63.148	64.697	66.981	-	66.981	-	-	-	-	-	-

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 2020	FY 2021	FY 2022
Title: Multidisciplinary University Research Initiative	52.839	52.117	54.345
Description: The 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 5 years in length at a cost of \$1.25 million each per year.			
FY 2021 Plans: Provide continued support for MURI awards made in prior years and initiate six to eight new FY21 MURI efforts that will enable advances in select interdisciplinary basic science and/or engineering research areas determined to be of critical importance to national defense.			
FY 2022 Plans: Will provide support for MURI awards made in prior years and assess and initiate six to eight FY 2022 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 2021 to FY 2022 Increase/Decrease Statement:			

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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 / MURI/PECASE/DURIP		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
Funding change reflects planned lifecycle of this effort.				
Title: Presidential Early Career Awards for Scientists and Engineers Description: Supports PECASE investigators started in prior years as well as new award recipients. FY 2021 Plans: Evaluate and award competitive grants for new award recipients to conduct world class research and enhance educational capabilities critical to Army transformation. FY 2022 Plans: Will support prior year awardees and assess and recommend four new PECASE candidates. FY 2021 to FY 2022 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.		1.503	4.686	4.735
Title: Defense University Research Instrumentation Program Description: Supports basic research through competitive grants for research instrumentation. FY 2021 Plans: Evaluate and award competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research and enhance educational capabilities critical to Army transformation. 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. FY 2021 to FY 2022 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort.		8.806	7.894	7.901
Accomplishments/Planned Programs Subtotals		63.148	64.697	66.981
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) D55 / <i>University Research Initiative</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
<i>D55: University Research Initiative</i>	-	22.000	-	-	-	-	-	-	-	-	-	-

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 (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 Project provides a foundation for applied research initiatives at the Army laboratories and research, development and engineering centers.

FY20 realignments are due to financial restructuring in support of Army Modernization Priorities

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 2020	FY 2021	FY 2022
Title: Basic Research Program Increase	22.000	-	-
Accomplishments/Planned Programs Subtotals	22.000	-	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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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
D58: <i>URI ACTIVITIES (CA)</i>	-	-	20.000	-	-	-	-	-	-	-	-	-

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 2020	FY 2021
<i>Congressional Add:</i> Program increase	-	20.000
<i>FY 2021 Plans:</i> Congressional Increase. Basic research to support University Research Initiatives.		
Congressional Adds Subtotals	-	20.000

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

N/A

Remarks

D. Acquisition Strategy

N/A