Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army											Date: February 2015	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601103A *I University Research Initiatives*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	-	76.682	89.776	72.603	-	72.603	72.741	72.914	74.305	74.780	-	-
D55: *University Research Initiative*	-	73.457	67.258	69.573	-	69.573	69.665	69.784	71.118	71.530	-	-
D58: *URI ACTIVITIES (CA)*	-	-	20.000	-	-	-	-	-	-	-	-	-
V72: *Minerva*	-	3.225	2.518	3.030	-	3.030	3.076	3.130	3.187	3.250	-	-

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 U.S. 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.

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

Work on this project is performed by the U.S. Army Research Laboratory (ARL) located in Research Triangle Park, NC.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103A / *University Research Initiatives*

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	79.317	69.808	73.136	-	73.136
Current President's Budget	76.682	89.776	72.603	-	72.603
Total Adjustments	-2.635	19.968	-0.533	-	-0.533
• Congressional General Reductions	-	-0.032			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.635	-			
• Adjustments to Budget Years	-	-	-0.533	-	-0.533

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2014	FY 2015
Project: D58: *URI ACTIVITIES (CA)*		
Congressional Add: *Program Increase*	-	20.000
Congressional Add Subtotals for Project: D58	-	20.000
Congressional Add Totals for all Projects	-	20.000

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 1	R-1 Program Element (Number/Name) PE 0601103A / *University Research Initiatives*	Project (Number/Name) D55 / *University Research Initiative*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
D55: *University Research Initiative*	-	73.457	67.258	69.573	-	69.573	69.665	69.784	71.118	71.530	-	-

Note

Not applicable for this item.

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 US 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.

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

Work on this project is performed by the U.S. Army Research Laboratory (ARL) located in Research Triangle Park, NC.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: Multidisciplinary University Research Initiative (MURI)	54.829	50.584	53.136
Description: MURI programs are typically 5 years in length at a cost of $1.25M/yr.			
FY 2014 Accomplishments: Supported MURI awards made in prior years and initiated eight FY14-start MURI awards critical to supporting the future force. Effective transition mechanisms included collaboration among principal investigators, participation by 6.2/6.3 program managers in MURI program reviews, and communication of the MURI research results to the U.S. ARL, the U.S. Army Research Development and Engineering Centers (RDECs), the U.S. Army Engineer Research and Development Center (ERDC), the U.S.			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 1	**R-1 Program Element (Number/Name)** PE 0601103A / *University Research Initiatives*	**Project (Number/Name)** D55 / *University Research Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Army (Medical Research and Materiel Command (MRMC), the U.S. Army Research Institute for Behavioral and Social Sciences (ARI) and industry. ***FY 2015 Plans:*** Provide support for MURI awards made in prior years and start six to eight new FY15 MURI awards critical to supporting the future force. Effective transition mechanisms include collaboration among principal investigators, participation by 6.2/6.3 program managers in MURI program reviews, and communication of the MURI research results to the ARL, RDECs, ERDC, MRMC, ARI and industry. ***FY 2016 Plans:*** Will provide support for MURI awards made in prior years and will start six to eight new FY16 MURI awards critical to supporting the future force. Effective transition mechanisms include collaboration among principal investigators, participation by 6.2/6.3 program managers in MURI program reviews, and communication of the MURI research results to the ARL, RDECs, ERDC, MRMC, ARI and industry.			
Title: Presidential Early Career Awards for Scientists and Engineers (PECASE) ***Description:*** Supports PECASE investigators started in prior years. ***FY 2014 Accomplishments:*** Selected four new awardees and supported prior year's awardees. ***FY 2015 Plans:*** Continue support for prior year awardees and selection of four new awards. ***FY 2016 Plans:*** Will continue support for prior year awardees and select four new awards.	5.231	4.500	4.478
Title: Defense University Research Instrumentation Program (DURIP) ***Description:*** Supports basic research through competitive grants for research instrumentation. ***FY 2014 Accomplishments:*** Awarded competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research critical to Army transformation. ***FY 2015 Plans:***	13.397	12.174	11.959

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 1	**R-1 Program Element (Number/Name)** PE 0601103A / *University Research Initiatives*	**Project (Number/Name)** D55 / *University Research Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Award competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research critical to Army transformation. ***FY 2016 Plans:*** Will award competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research critical to Army transformation.			
Accomplishments/Planned Programs Subtotals	73.457	67.258	69.573

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 1	R-1 Program Element (Number/Name) PE 0601103A / *University Research Initiatives*	Project (Number/Name) D58 / *URI ACTIVITIES (CA)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
D58: *URI ACTIVITIES (CA)*	-	-	20.000	-	-	-	-	-	-	-	-	-

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for University Research Initiatives.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015
Congressional Add: Program Increase	-	20.000
FY 2015 Plans: Congressional increase for University Research Initiatives		
Congressional Adds Subtotals	-	20.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 1	R-1 Program Element (Number/Name) PE 0601103A / *University Research Initiatives*	Project (Number/Name) V72 / *Minerva*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
V72: *Minerva*	-	3.225	2.518	3.030	-	3.030	3.076	3.130	3.187	3.250	-	-

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project supports the Minerva Research Initiative (MRI), a university-based social science research program initiated by the Secretary of Defense in FY09. It focuses on areas in the social sciences that are of strategic importance to U.S. national security policy which have not been substantially pursued in the past. The Minerva research effort will be performed to understand the internal military-political dynamics of repressive regimes, the vulnerabilities of regimes and institutions to various kinds of disruption and instability, the nature of crowd dynamics, group violence, community belief structures, the potential to influence public opinion and attitudes in diverse cultures, cultural effects on network security and military operations, the influence of technology on military capabilities of potential adversaries and allies, and other intersections of social-cultural issues with military activities and national security. Predictive models and other analysis tools will be developed. Leveraging the expertise in the social sciences within the academic community is needed to provide understanding of the roots of terrorist organizations and the challenges and opportunities for military operations in a culturally diverse environment. Better understanding at a fundamental level and new computational tools will provide a beneficial impact on war fighting capabilities at the national policy, military strategy, operational, and tactical levels, and will enhance the capabilities of intelligence activities at all levels. All research results are open source.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: The Minerva Research Initiative (MRI)	3.225	2.518	3.030
Description: The MRI is a university-based social science research program initiated by the Secretary of Defense. It focuses on areas in the social sciences of strategic importance to U.S. national security policy. It seeks to increase the Department's intellectual capital in the social sciences and improve its ability to address future challenges and build bridges between the Department and the social science community. Minerva will bring together universities, research institutions, and individual scholars and support multidisciplinary and cross-institutional projects addressing specific topic areas determined by the Department.			
FY 2014 Accomplishments: Completed the university consortium projects started in FY09; supported new and ongoing Minerva social science research of strategic importance to the Army and U.S. national security policy; focused research efforts on understanding group belief			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 1	**R-1 Program Element (Number/Name)** PE 0601103A / *University Research Initiatives*	**Project (Number/Name)** V72 / *Minerva*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
formation, factors causing or influencing social change and violence, societal resilience, theories of deterrence, and new approaches to conflict and cooperation. ***FY 2015 Plans:*** Test theories on the direct and indirect effects of characteristics of natural resources on violence and state stability, which may ultimately provide predictive models of the relationship between natural resources and conflict, and providing options for anticipating and mitigating the acceleration of violence around the globe; and perform social scientific surveys with neuroscientific brain imaging to reveal the role of moral values in social mobilization which in the long term may provide effective strategies and policies in reducing organized violence and preventing its contagion. ***FY 2016 Plans:*** Will design and validate new quantitative models to identify the antecedents of civil unrest and violence, which will generate new predictive models of the relationship between social systems, natural systems, and sociopolitical instability worldwide, enabling enhanced Army capacity to detect emerging political instabilities; develop integrated geo-coded databases and time series data sets from existing archives to serve as experimental test beds for developing and validating predictive theories to identify potential hotspots for violence and instability that will aid in Army development of strategies for early intervention and reduction of sociopolitical violence.			
Accomplishments/Planned Programs Subtotals	3.225	2.518	3.030

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A