Exhibit R-2, PB 2011 Army RDT&E Budget Item Justification

R-1 ITEM NOMENCLATURE

**APPROPRIATION/BUDGET ACTIVITY**2040: Research, Development, Test & Evaluation, Army

PE 0601103A: *University Research Initiatives* 

**DATE:** February 2010

BA 1: Basic Research

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	<b>Total Cost</b>
Total Program Element	87.485	99.400	91.161	0.000	91.161	96.143	110.107	117.552	125.908	0	818.917
D55: University Research Initiative	74.577	78.012	75.911	0.000	75.911	76.405	84.881	90.335	96.703	Continuing	Continuing
D58: URI ACTIVITIES (CA)	8.920	14.524	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
D66: MEDICAL UNIVERSITY RESEARCH INITIATIVES (CA)	3.988	4.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
V72: MINERVA	0.000	2.487	15.250	0.000	15.250	19.738	25.226	27.217	29.205	Continuing	Continuing

#### A. Mission Description and Budget Item Justification

The objective of this program element (PE) is to support Army efforts in the Multidisciplinary University Research Initiative (MURI) program, the Defense University Research Instrumentation Program (DURIP) and the Presidential Early Career Awards for Scientists and Engineers (PECASE) program by funding basic research in a wide range of scientific and engineering disciplines pertinent to maintaining the U.S. land combat technology superiority. Army MURI program 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. Project D58 funds for specific congressional special interest items. The cited work is consistent with the Department of Defense Research and Engineering Strategic Basic Research Plan, the Army Science and Technology Master Plan, the Army Modernization Strategy. Work on this project is performed extramurally by the Army Research Laboratory (ARL), Research Triangle Park, NC.

Exhibit R-2, PB 2011 Army RDT&E Budget Item Justification		<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
2040: Research, Development, Test & Evaluation, Army	PE 0601103A: University Research Initiatives	
BA 1: Basic Research		

# **B. Program Change Summary (\$ in Millions)**

	<u>FY 2009</u>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
Previous President's Budget	89.632	88.421	94.161	0.000	94.161
Current President's Budget	87.485	99.400	91.161	0.000	91.161
Total Adjustments	-2.147	10.979	-3.000	0.000	-3.000
<ul> <li>Congressional General Reductions</li> </ul>		-8.021			
<ul> <li>Congressional Directed Reductions</li> </ul>					
<ul> <li>Congressional Rescissions</li> </ul>		0.000			
<ul> <li>Congressional Adds</li> </ul>		19.000			
<ul> <li>Congressional Directed Transfers</li> </ul>					
<ul> <li>Reprogrammings</li> </ul>	0.363	0.000			
<ul> <li>SBIR/STTR Transfer</li> </ul>	-2.510	0.000			
<ul> <li>Adjustments to Budget Years</li> </ul>	0.000	0.000	-3.000	0.000	-3.000

# **Change Summary Explanation**

FY10 Congressionally directed increases.

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research							PROJECT D55: University Research Initiative				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
D55: University Research Initiative	74.577	78.012	75.911	0.000	75.911	76.405	84.881	90.335	96.703	Continuing	Continuing

### A. Mission Description and Budget Item Justification

Exhibit R-2A, PB 2011 Army RDT&E Project Justification

The objective of this project is to support 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 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. The cited work is consistent with the Department of Defense Research and Engineering Strategic Basic Research Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan. Work on this project is performed by the Army Research Laboratory (ARL) located in Research Triangle Park, NC.

#### B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	60.820	56.788	58.453	0.000	58.453
Multidisciplinary University Research Initiative (MURI). In FY09, MURI topics were Disruptive Fibers for Flexible Armor, Network-based Hard/Soft Information Fusion, Tailored Stress-Wave Mitigation, Integrated Quantum Circuits, Adaptive Structural Materials, Transformational Optics, Emergent Phenomena at Complex Oxide Interfaces, Application of Systems Biology to Regenerative Medicine, Mechanisms of Bacterial Spore Germination, Opportunistic Sensing, and Cyber Situation Awareness. In FY10, the program supports MURI, with 10 new awards planned that are critical to the Army's future operating capabilities. In FY11, support for MURI awards made in prior years will continue and 9 new MURI awards critical to future operating capabilities will be initiated. 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 Army Research Laboratory, the Research, Development, and Engineering Centers, and industry.					

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification	<b>DATE:</b> February 2010						
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initia	iatives	PROJECT D55: University Research Initiative				
B. Accomplishments/Planned Program (\$ in Millions)			1				
2. Trecomplishments Translating and (\$\psi\$ m \text{ Amons})		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011	
FY 2009 Accomplishments: FY 2010 Plans: FY 2010  Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO							
Program #2  Presidential Early Career Awards for Scientists and Engineers (PECASE): in prior years. In FY09, selected fifteen new investigators for PECASE awayear number of awards. In FY10, continued with fifteen new awards. In FY PECASE awards and select 12 additional PECASE awardees.  FY 2009 Accomplishments: FY 2010 Plans: FY 2010 Base FY 2011 Plans: FY 2011 Base	ards, an increase of twelve over prior	1.938	2.837	4.291	0.000	4.291	

Exhibit R-2A, PB 2011 Army RDT&E Project Justification

**DATE:** February 2010

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APPROPRIATION/BUDGET ACTIVITY				PROJECT D55: University Personnels Initiative						
2040: Research, Development, Test & Evaluation, Army	PE 0601103A: University Research In	tiatives	D55: University Research Initiative							
BA 1: Basic Research										
B. Accomplishments/Planned Program (\$ in Millions)										
				Base FY	OCO	Total				
		FY 2009	FY 2010	2011	FY 2011	FY 2011				
OCO FY 2011 Plans:										
FY 2011 OCO										
			12.001							
Program #3		11.819	13.001	13.167	0.000	13.16				
Defense University Research Instrumentation Program (DURIP): In										
for research instrumentation. In FY10 and FY11, fund competitive g										
universities' capabilities to conduct world class research critical to A	Army transformation.									
FY 2009 Accomplishments:										
FY 2009										
FY 2010 Plans:										
FY 2010										
Base FY 2011 Plans:										
FY 2011 Base										
OCO FY 2011 Plans:										
FY 2011 OCO										
Program #4		0.000	3.202	0.000	0.000	0.00				
The Minerva Research Initiative (MRI) is a university-based social	science research program initiated by the									
Secretary of Defense. It focuses on areas in the social sciences of str										
policy. It seeks to increase the Department's intellectual capital in the										
address future challenges and build bridges between the Department										
will bring together universities, research institutions, and individual										
and cross-institutional projects addressing specific topic areas determ										
been solicited that address the following topics: (1) Chinese Military										
	,									

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Exhibit K 271, 1 B 2011 1 miny RD 1 CE 11 Of CC t distinctution	Exhibit R-2A, PB 2011 Army RDT&E Project Justification				<b>DATE:</b> February 2010					
	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiatives  PROJECT			Γ ersity Research Initiative						
B. Accomplishments/Planned Program (\$ in Millions)										
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011				
Programs, (2) Studies of the Strategic Impact of Religious and Cultural Changes (3) Iraqi Perspectives Project, (4) Studies of Terrorist Organization and Ideologi Understanding Dimensions of National Security, Conflict, and Cooperation. Wi awards initiated in FY09 which are continuing in FY10. In FY11 this effort is c Project V72.  FY 2009 Accomplishments: FY 2010 Plans: FY 2010 Plans: FY 2011 Base	ies, (5) New Approaches to ithin the Army there were four									
OCO FY 2011 Plans: FY 2011 OCO										
Program #5  Small Duviness Innovative Descend / Small Duviness Technology Transfer Program	#0 PP G	0.000	2.184	0.000	0.000	0.000				
Small Business Innovative Research/Small Business Technology Transfer Progress FY 2009 Accomplishments: FY 2010 Plans:	rams									
FY 2010										

**DATE:** February 2010

75.911

0.000

75.911

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Int	<b>R-1 ITEM NOMENCLATURE</b> PE 0601103A: <i>University Research Initiatives</i>		PROJECT D55: University Research Initiative			
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011	
Base FY 2011 Plans: FY 2011 Base							
OCO FY 2011 Plans: FY 2011 OCO							

Accomplishments/Planned Programs Subtotals

74.577

78.012

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

Exhibit R-2A, PB 2011 Army RDT&E Project Justification

N/A

### **D.** Acquisition Strategy

N/A

### **E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, PB 2011 Army RDT&E Project Justification								<b>DATE:</b> February 2010			
APPROPRIATION/BUDGET AC 2040: Research, Development, Test of BA 1: Basic Research		rmy		R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiatives			PROJECT D58: URI A	CT V ACTIVITIES (CA)			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost

0.000

0.000

0.000

0.000

0.000 | Continuing | Continuing

0.000

### A. Mission Description and Budget Item Justification

D58: URI ACTIVITIES (CA)

Congressional Interest Item funding provided for University Research Initiatives.

8.920

14.524

0.000

### **B.** Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	1.595	0.000	0.000	0.000	0.000
Low Temperature Vehicle Perfomance Research. This Congressional Interest Item conducted basic research on very low temp behavior of military diesel engines.					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Program #2	1.595	1.591	0.000	0.000	0.000
Hi-tech Eyes for the Battlefield. In FY09 this Congressional Interest Item project developed a novel, lightweight, and adaptive image sensor architecture that derives its performance not from the size of the optical elements but					

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification	Exhibit R-2A, PB 2011 Army RDT&E Project Justification					
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiati	PROJECT D58: URI AC	CTIVITIES (CA)			
B. Accomplishments/Planned Program (\$ in Millions)						
	1	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
from the power of the signal processing and the adaptability of its parts. Control of the instantaneous fields of view from an array of micro-imagers dimensional array of micro-mirrors.						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #3		1.595	0.000	0.000	0.000	0.000
Nanosystems Through Optical Biosensors. This Congressional Interest Ite application of nanotechnology to the detection and manipulation of biolog and the development of nanoengineered materials and systems for advance membranes).	gical materials (i.e. biohazard sensing)					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
			1			1

Exhibit R-2A, PB 2011 Army RDT&E Project Justification				<b>DATE:</b> February 2010			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Ini				CTIVITIES (CA)		
B. Accomplishments/Planned Program (\$ in Millions)			'				
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011	
Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO							
Program #4  Electrofluidic Chromatophores for Adaptive Camouflage. This Condisplay elements based on electro-wetting.  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010	gressional Interest Item developed reflective	1.743	0.000	0.000	0.000	0.000	
Base FY 2011 Plans: FY 2011 Base  OCO FY 2011 Plans: FY 2011 OCO  Program #5  Columbia College Chicago Construct Program. In FY00 this Congr	receional Interset Item developed intersetive	0.797	1.592	0.000	0.000	0.000	
Columbia College Chicago Construct Program. In FY09 this Congr simulations to train individuals to solve problems as a team, making involving knowledge and skills that can be developed systematically production.	the move from solo effort to teamwork						

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification				DATE: Febr	uary 2010		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Init				CTIVITIES (CA)		
B. Accomplishments/Planned Program (\$ in Millions)	,						
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011	
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
Base FY 2011 Plans: FY 2011 Base							
OCO FY 2011 Plans: FY 2011 OCO							
Program #6		1.595	0.796	0.000	0.000	0.000	
Open Source Intelligence for Force Protection and Intelligence. In supported the collection, data mining, and data distribution of open a tactical advantage. Currently, this technology supports the US Bo can address military requirements across the globe.	source information that can be used to achieve						
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
Base FY 2011 Plans: FY 2011 Base							

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research In	itiatives	PROJECT D58: URI AC	PROJECT D58: URI ACTIVITIES (CA)		
B. Accomplishments/Planned Program (\$ in Millions)			I			
•		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
OCO FY 2011 Plans: FY 2011 OCO						
Program #7		0.000	0.995	0.000	0.000	0.000
Antennas for Unmanned Aerial Vehicles. This is a Congressional In	terest Item.					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #8		0.000	0.796	0.000	0.000	0.000
Science, Technology, Engineering, Mathematics (STEM) at Coppin Interest Item.	State University. This is a Congressional					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification				<b>DATE:</b> Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Init	iatives	PROJECT D58: URI ACTIVITIES (CA)			
B. Accomplishments/Planned Program (\$ in Millions)	<u> </u>		I			
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #9		0.000	1.591	0.000	0.000	0.000
Laboratory for Engineered Human Protection (LEHP). This is a C	Congressional Interest Item.					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #10		0.000	1.591	0.000	0.000	0.000
Collaboration Skills for Time Critical Teams. This is a Congressi	ional Interest Item.					
FY 2009 Accomplishments: FY 2009						

Exhibit R-2A, PB 2011 Army RDT&E Project Justification			DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	<b>R-1 ITEM NOMENCLATURE</b> PE 0601103A: <i>University Research Initiatives</i>	PROJECT D58: URI A	PROJECT D58: URI ACTIVITIES (CA)		
B. Accomplishments/Planned Program (\$ in Millions)		I			
	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Program #11	0.000	1.592	0.000	0.000	0.000
Cooperative Developmental Energy Program. This is a Congressi	onal Interest Item.				
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Program #12	0.000	1.592	0.000	0.000	0.000
Manufacturing Lab for Next Generation Engineers. This is a Con-	gressional Interest Item.				

Exhibit R-2A, PB 2011 Army RDT&E Project Justification				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiati	ives	PROJECT D58: URI ACTIVITIES (CA)			
B. Accomplishments/Planned Program (\$ in Millions)						
	ı	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #13		0.000	2.388	0.000	0.000	0.000
Molecular Electronics for Flash Memory Protection. This is a Congression	al Interest Item.					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Accor	nplishments/Planned Programs Subtotals	8.920	14.524	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		<b>DATE:</b> February 2010		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	<b>R-1 ITEM NOMENCLATURE</b> PE 0601103A: <i>University Research Initiatives</i>	PROJECT D58: URI A	CTIVITIES (CA)	
C. Other Program Funding Summary (\$ in Millions)  N/A				
D. Acquisition Strategy N/A				
E. Performance Metrics  Performance metrics used in the preparation of this justification material may	be found in the FY 2010 Army Performance Budget Ju	stification Bo	ook, dated May 2010.	

Exhibit R-2A, PB 2011 Army RDT&E Project Justification								DATE: Febi	ruary 2010			
APPROPRIATION/BUDGET ACTI 2040: Research, Development, Test & I BA 1: Basic Research		ту			R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiatives D66: MEDIC INITIATIVES					VERSITY RESEARCH		
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
D66: MEDICAL UNIVERSITY RESEARCH INITIATIVES (CA)	3.988	4.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	

### A. Mission Description and Budget Item Justification

Congressional Interest Item funding provided for Medical University Research Initiatives.

### **B.** Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	1.994	1.592	0.000	0.000	0.000
Burn and Shock Trauma Institute. This is a Congressional Interest Item.					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
Base FY 2011 Plans: FY 2011 Base					
OCO FY 2011 Plans: FY 2011 OCO					
Program #2	1.994	0.000	0.000	0.000	0.000
DoD International Diabetes Research Initiative. This is a Congressional Interest Item.					

Exhibit R-2A, PB 2011 Army RDT&E Project Justification				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	<b>R-1 ITEM NOMENCLATURE</b> PE 0601103A: <i>University Research Ini</i>	itiatives	PROJECT D66: MEDIC INITIATIVE	CAL UNIVERSITY RESEAR (CA)		<i>СН</i>
B. Accomplishments/Planned Program (\$ in Millions)			'			
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #3		0.000	0.398	0.000	0.000	0.00
Military Family Coping Patterns. This is a Congressional Interest Item.						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #4		0.000	2.387	0.000	0.000	0.00

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Exhibit R-2A, PB 2011 Army RDT&E Project Justification			<b>DATE:</b> February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0601103A: University Research Initiatives	D66: <i>MEDIO</i>	CAL UNIVERSITY RESEARCH
BA 1: Basic Research		INITIATIVE	S (CA)

## **B.** Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Battlefield Exercise and Combat Related Spinal Cord Injury Research. This is a Congressional Interest Item.					
FY 2009 Accomplishments:					
FY 2009					
FY 2010 Plans:					
FY 2010					
Base FY 2011 Plans:					
FY 2011 Base					
OCO FY 2011 Plans:					
FY 2011 OCO					
Accomplishments/Planned Programs Subtotals	3.988	4.377	0.000	0.000	0.000

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

N/A

## **D.** Acquisition Strategy

N/A

### **E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

**DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research				R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initiatives				PROJECT V72: MINERVA				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
V72: MINERVA	0.000	2.487	15.250	0.000	15.250	19.738	25.226	27.217	29.205	Continuing	Continuing	

### A. Mission Description and Budget Item Justification

Exhibit R-2A, PB 2011 Army RDT&E Project Justification

The objective of this project is to support the Minerva Research Initiative (MRI), a university-based social science research program initiated by the Secretary of Defense in FY09 to develop a fundamental understanding of the perceptions, attitudes and beliefs of foreign cultures. The overall goals of the initiative are to foster basic social science research on topics of U.S. national strategic importance; to increase the Department's intellectual capital in the social sciences; and to build bridges between the Department and the academic social science community. In FY11, this project consolidates efforts that were initiated under PE 61103, Project D55. Existing grants on the studies of the strategic impact of religious and cultural change in the Muslim world; Iraqi perspectives; Studies of terrorist organizations and ideologies; and new approaches to understanding dimensions of national security, conflict and cooperation from that project will be continued in FY11. The cited work is consistent with the Director, Defense Research and Engineering Strategic Basic Research Plan, the Army Modernization Strategy, the Army Science and Technology Master Plan, as well as the requirements of the Army Culture and Foreign Language Strategy. Work in this project will be executed by the Army Research Office.

### **B.** Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	0.000	2.418	12.000	0.000	12.000
Minerva Research Initiative: In FY10, solicited topics focusing on social science and cultural issues affecting US military warfighting capabilities, the relationship of foreign military and technology capabilities, national and military implications of foreign religious and cultural changes, foreign perspectives of US policy and strategy, terrorist organizations and ideologies, and other issues related to the national security implications of conflict and cooperation. Expand in-house capabilities in order to manage these new areas of social science research within the Department of Defense.In FY 11, will extend research areas to new topics, such as new theories of deterrence and the national security implications of energy and climate change. Will continue to develop in-house social science capabilities necessary to integrate results from the extramural program into the planning, programming and management processes of the DoD as well as to tap university-based expertise in cutting edge social scientific research areas.					

Exhibit R-2A, PB 2011 Army RDT&E Project Justification			<b>DATE:</b> February 2010			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 1: Basic Research	R-1 ITEM NOMENCLATURE PE 0601103A: University Research Initia	PROJECT V72: MINER	RVA			
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						
Program #2		0.000	0.000	3.250	0.000	3.250
In FY11, will continue research initiated under PE 0601103, Project D55 compact of religious and cultural change in the Muslim world; Iraqi perspect and ideologies; and new approaches to understanding dimensions of nation	ives; Studies of terrorist organizations					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
Base FY 2011 Plans: FY 2011 Base						
OCO FY 2011 Plans: FY 2011 OCO						

Exhibit R-2A, PB 2011 Army RDT&E Project Justification

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 1: Basic Research

R-1 ITEM NOMENCLATURE

PE 0601103A: University Research Initiatives

PROJECT

V72: MINERVA

### **B.** Accomplishments/Planned Program (\$ in Millions)

			Base FY	OCO	Total
	FY 2009	FY 2010	2011	FY 2011	FY 2011
Program #3	0.000	0.069	0.000	0.000	0.000
Small Business Innovative Research/Small Business Technology Transfer Programs					
FY 2009 Accomplishments:					
FY 2009					
FY 2010 Plans:					
FY 2010					
Base FY 2011 Plans:					
FY 2011 Base					
OCO FY 2011 Plans:					
FY 2011 OCO					
Accomplishments/Planned Programs Subtotals	0.000	2.487	15.250	0.000	15.250

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

N/A

## **D.** Acquisition Strategy

N/A

### **E. Performance Metrics**

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.