ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE
1 - Basic research	**0601103A - University Research Sciences (H)**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
Total Program Element (PE) Cost		82959	76984	68545	66507	67755	68974	70230
D55	University Research Initiative	71942	66240	68545	66507	67755	68974	70230
D58	URI ACTIVITIES (CA)	8144	6900	0	0	0	0	0
D62	BIOINFORMATICS RESEARCH (CA)	1916	0	0	0	0	0	0
D63	INST OF BIOENGINEERING AND NANOSCIENCE IN ADV MED	957	986	0	0	0	0	0
D66	MEDICAL UNIVERSITY RESEARCH INITIATIVES (CA)	0	2858	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project supports 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 includes funding for specific Congressional Interest URIs. The cited work is consistent with Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Department of Defense Basic Research Plan (BRP). Work on this project is performed extramurally by the Army Research Laboratory (ARL).

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B. Program Change Summary	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2006)	83959	67201	67510
Current BES/President's Budget (FY 2007)	82959	76984	68545
Total Adjustments	-1000	9783	1035
Congressional Program Reductions		-338	
Congressional Rescissions		-779	
Congressional Increases		10900	
Reprogrammings	-1000		
SBIR/STTR Transfer			
Adjustments to Budget Years			1035

Nine FY06 Congressional adds totaling $10900 were added to this PE.

FY06 Congressional adds with no R-2A (appropriated amount is shown):
($1000) Advanced Imaging Technology Research
($1400) Burn and Shock Trauma Research
($1000) High Resolution Analytical Transmission Electron Microscope
($1000) Institute of Bioengineering and Nanoscience in Advanced Medicine
($1400) Integrated Systems in Sensing, Imaging and Communications Research
($1200) Laboratory for Engineered Human Protection
($1400) Low Temperature Vehicle Research
($1500) Nanotechnology and Health Research
($1000) Phase 2 SmartResponsive Nanocomposite (SRN) Systems

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2006

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
1 - Basic research	**0601103A - University Research Sciences (H)**	**D55**

COST (In Thousands)		FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
D55	University Research Initiative	71942	66240	68545	66507	67755	68974	70230

A. Mission Description and Budget Item Justification: This Project supports the Multidisciplinary University Research Initiative (MURI) and the Defense University Research Instrumentation Program (DURIP). The MURI program funds university basic research in a wide range of scientific and engineering disciplines pertinent to maintaining the 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. This PE also supports Presidential Early Career Awards for Scientists and Engineers (PECASE). 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 Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Department of Defense Basic Research Plan (BRP). Work on this project is performed extramurally by the Army Research Laboratory (ARL).

Accomplishments/Planned Program	FY 2005	FY 2006	FY 2007
MURI - In FY05, continued supporting MURI awards made in prior years and made 8 new awards. Topic areas for the FY05 MURI research competition were Wireless Communications Networks, Autonomous and Semi-Autonomous Vehicle Swarms, Electronic Systems, Quantum Imaging, Network Battlefield Training, Materials Engineering, and Future Force Insensitive Munitions. Topic areas for the FY06 MURI research competition will be in Bio-integrating Structural and Neural Prosthetic Materials, Spatial-temporal Event Pattern Recognition, Self Assembling Metallic/Metalloid Cluster Materials, OMNI-Optical Materials with Negative Index, Monolithic Silicon Microbolometer Materials for Uncooled IR Detectors, Ultrafast Switching for Optical Imaging, Ultrafast, Non-equilibrium Laser-Material Interactions, and Urban Target Recognition by Ad-hoc Networks of Imaging Sensors and Low-cost, Non-imaging Sensors. In FY06 and FY07 will support MURI awards made in prior years and initiate new awards in research critical to the Army's Future Operating Capabilities with an emphasis on biomolecular electronics, bio-electrochemical sensors, and human engineering research for humans-in-automation systems.	57189	49381	53200
PECASE - Continue supporting those PECASE investigators started in prior years. In FY05, selected two new young investigators. In FY06 and FY07, plan to select two new young investigators each year.	1053	940	1029
DURIP - In FY05, the DURIP program awarded 63 competitive grants for the acquisition of research instrumentation under the Defense University Research Instrumentation Program (DURIP). In FY06, DURIP will continue instrumentation that enhances the research infrastructure and provides new research capabilities to enable scientific exploration and discovery in burgeoning areas vital to Army transformational technologies. In FY05 awarded, and in FY06, FY07 will continue to fund competitive grants for research instrumentation to enhance universities' capabilities to conduct world class research critical to Army Transformation.	13700	15919	14316
Total	71942	66240	68545