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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 1: <i>Basic Research</i>				PE 0601103N: <i>University Research Initiatives</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	104.088	133.157	113.690	-	113.690	112.636	113.908	116.196	118.764	Continuing	Continuing
0000: <i>University Research Initiatives</i>	104.088	113.157	113.690	-	113.690	112.636	113.908	116.196	118.764	Continuing	Continuing
9999: <i>Congressional Adds</i>	-	20.000	-	-	-	-	-	-	-	0.000	20.000

A. Mission Description and Budget Item Justification

This program includes support for multidisciplinary basic research in a wide range of scientific and engineering disciplines that enable the U.S. Navy to maintain technological superiority, and for university research infrastructure to acquire research instrumentation needed to maintain and improve the quality of university research important to the Navy. Multidisciplinary University Research Initiative (MURI) efforts involve teams of researchers investigating high priority topics and opportunities that intersect more than one traditional technical discipline. For many military problems this multidisciplinary approach serves to stimulate innovations, accelerate research progress and expedite transition of results into Naval applications. The Defense University Research Instrumentation Program (DURIP) supports university research infrastructure essential to high quality Navy relevant research. The instrumentation program complements other Navy research programs by supporting the purchase of high cost research instrumentation that is necessary to carry out cutting-edge research. The program supports Presidential Early Career Awards for Scientists and Engineers (PECASE), single investigator research efforts performed by outstanding academic scientists and engineers early in their research careers. This program provides the knowledge base, scientific concepts, and technological advances for the maintenance of Naval power and national security.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	108.679	113.157	121.996	-	121.996
Current President's Budget	104.088	133.157	113.690	-	113.690
Total Adjustments	-4.591	20.000	-8.306	-	-8.306
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.118	-			
• SBIR/STTR Transfer	-2.920	-			
• Program Adjustments	-	-	-9.399	-	-9.399
• Rate/Misc Adjustments	-	-	1.093	-	1.093
• Congressional General Reductions Adjustments	-0.553	-	-	-	-

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

Project: 9999: *Congressional Adds*

Congressional Add: *University Research Program (Cong)*

	FY 2011	FY 2012
	-	20.000
Congressional Add Subtotals for Project: 9999	-	20.000
Congressional Add Totals for all Projects	-	20.000

Change Summary Explanation

Technical: N/A

Schedule: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 1: Basic Research				R-1 ITEM NOMENCLATURE PE 0601103N: University Research Initiatives				PROJECT 0000: University Research Initiatives			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0000: University Research Initiatives	104.088	113.157	113.690	-	113.690	112.636	113.908	116.196	118.764	Continuing	Continuing
A. Mission Description and Budget Item Justification											
This project includes support for multidisciplinary basic research in a wide range of scientific and engineering disciplines that are important for maintaining the technological superiority of the U.S. Navy and for university research infrastructure to acquire instrumentation needed to maintain and improve the quality of university research important to the Navy. MURI efforts involve teams of researchers investigating high priority topics that intersect more than one traditional technical discipline. For many military problems this multidisciplinary approach serves to stimulate innovations, accelerate research progress and expedite transition of results into Naval applications. The DURIP project supports university research infrastructure essential to high quality Navy relevant research. The instrumentation project complements other Navy research programs by supporting the purchase of high cost research instrumentation that is necessary to carry out cutting-edge research. The PECASE project supports single-investigator research efforts performed by outstanding academic scientists and engineers early in their research careers. This project provides the knowledge base, scientific concepts, and technological advances for the maintenance of Naval power and national security.											
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2011	FY 2012	FY 2013	
Title: DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP)								16.200	18.994	19.438	
Description: DURIP funds are provided to universities to purchase relatively high cost research instrumentation that is normally not included in single-investigator type research grants. Individual grants range from \$50K to \$1M. The DURIP program is an Office of the Secretary of Defense (OSD) interest item and OSD directs that funding for the DURIP efforts be awarded after OSD announces the awardees, which typically takes place towards the second half of the fiscal year. In turn, universities need to purchase the instrumentation and take delivery before any billings are generated. It frequently takes several months for delivery and billing to be completed.											
FY 2012 program increases provide for an increased number of grants. In past years, more outstanding proposals have been received than could be funded.											
FY 2011 Accomplishments: - Conducted competition for 64 research instrumentation awards to universities.											
FY 2012 Plans: - Conduct competition for research instrumentation awards to universities.											
FY 2013 Plans: - Conduct competition for research instrumentation awards to universities.											
Title: MULTIDISCIPLINARY UNIVERSITY RESEARCH INITIATIVE (MURI)								82.908	87.067	88.193	

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2011	FY 2012
<p>Description: Research efforts include high priority topics that intersect more than one traditional discipline. MURI topics are selected to address Naval Science and Technology (S&T) Focus Areas as described in the Naval S&T Strategic Plan. The MURI program is an OSD interest item and OSD directs that funding for the MURI efforts be awarded after OSD announces the awardees, which typically takes place towards the second half of the fiscal year. Since the MURI program funds academic researchers, execution of the efforts typically ramps up during the summer academic break months. MURI projects make significant contributions to Navy and DoD objectives by; speeding up scientific programs by cross-fertilization of ideas, hastening the transition of basic research to practical applications, and training students in cross-disciplinary approaches to science and engineering research of importance to DoD.</p> <p>FY 2011 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted competition for new MURI awards to address selected high priority Naval S&T areas, transformational initiatives, and grand challenges, including strategically important DoD research areas. Nine high priority research topics were identified for publication in a BAA to solicit proposals. These topics addressed Soil Blast Modeling and Simulation, Knowledge Representation and Reasoning for Decentralized Autonomous Systems, III-Nitride Terahertz Electronics - Scaling Strategies beyond Silicon, Charge Transport in DNA Molecular Wire, Coupled Human-landscape Interactions in Low-lying Coastal Environments, Integrated Oceanographic, Atmospheric, and Acoustic Physics, Improved Meteorological Modeling in Mountainous Terrain, Bacterial or Cellular Controllers for Device Autonomy, Nano Science based High-speed Fabrication of Full Function Hybrid Flexible Electronic Systems, Atomic-scale Interphases: Exploring New Material States. - Continued MURI projects begun in prior years. <p>FY 2012 Plans:</p> <ul style="list-style-type: none"> - Conduct competition for new MURI awards to address selected high priority Naval S&T areas, transformational initiatives, and grand challenges, including strategically important DoD research areas. Approximately eight high priority research topics will be identified for publication in a BAA to solicit proposals. - Continue MURI projects begun in prior years. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Conduct competition for new MURI awards to address selected high priority Naval S&T areas, transformational initiatives, and grand challenges, including strategically important DoD research areas. Approximately eight high priority research topics will be identified for publication in a BAA to solicit proposals. - Continue MURI projects begun in prior years. 			
Title: PRESIDENTIAL EARLY CAREER AWARDS (PECASE)		4.980	7.096
Description: PECASE awards are made to academic scientists early in their research career for extremely prestigious single-investigator research in areas of vital importance to the Navy. Awards provide national recognition and research grants of up to			6.059

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2011	FY 2012	FY 2013
\$200K per year for five years. OSD, with policy and oversight responsibility for the PECASE program, directed that the number of PECASE awards be set at four new awards per year.					
FY 2012 funding increase reflects need to cover 15 PECASE awardees chosen in FY2008. The decrease in funding from FY2012 to FY2013 reflects the effect of ASD(R&E)'s direction to fund only four new PECASE starts per year.					
<i>FY 2011 Accomplishments:</i> - Selected six outstanding university researchers received the five-year PECASE research award to conduct research of importance to the Navy. - Continued PECASE programs begun in earlier years.					
<i>FY 2012 Plans:</i> - Select six outstanding university researchers to receive the five-year PECASE research award to conduct research of importance to the Navy. - Continue PECASE programs begun in earlier years.					
<i>FY 2013 Plans:</i> - Select four outstanding university researchers to receive the five-year PECASE research award to conduct research of importance to the Navy. - Continue PECASE programs begun in earlier years.					
Accomplishments/Planned Programs Subtotals			104.088	113.157	113.690
C. Other Program Funding Summary (\$ in Millions) N/A					
D. Acquisition Strategy Not applicable.					
E. Performance Metrics This University Research Initiative seeks to improve the quality of defense research conducted by universities and supports the education of engineers and scientists in disciplines critical to national defense needs. The initiative is a collection of specialized research programs performed by academic research institutions. Individual project metrics are tailored to the needs of specific applied research and advanced development programs. Example metrics include extending the life of Thermal Barrier Coatings for transition to the Enterprise and Platform Enablers Future Naval Capability program. It is projected that the life time of Thermal Barrier Coating on Turbine Blades can be doubled. The National Research Council of the National Academies of Science and Engineering's Congressionally directed "Assessment of Department of Defense Basic Research" concluded that the DoD is managing its basic research program effectively.					

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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
9999: Congressional Adds	-	20.000	-	-	-	-	-	-	-	0.000	20.000

A. Mission Description and Budget Item Justification

This project shows Congressional Adds to this Program Element.

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

	FY 2011	FY 2012
<i>Congressional Add:</i> University Research Program (Cong)	-	20.000
<i>FY 2012 Plans:</i> Facilitate waivers to augment limits for Defense University Research Instrumentation Program (DURIP) competition proposals for the acquisition of major equipment to augment current or develop new research capabilities in support of defense relevant research, and to increase all competitive based university research programs.		
Congressional Adds Subtotals	-	20.000

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

N/A

D. Acquisition Strategy

Not applicable.

E. Performance Metrics

This project shows Congressional Adds to this Program Element.