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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy **Date:** March 2014

Appropriation/Budget Activity 1319: <i>Research, Development, Test & Evaluation, Navy / BA 1: Basic Research</i>					R-1 Program Element (Number/Name) PE 0601103N / <i>University Research Initiatives</i>							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	0.000	117.855	112.617	113.908	-	113.908	116.196	118.764	120.901	120.901	Continuing	Continuing
0000: <i>University Research Initiatives</i>	0.000	99.521	112.617	113.908	-	113.908	116.196	118.764	120.901	120.901	Continuing	Continuing
9999: <i>Congressional Adds</i>	0.000	18.334	-	-	-	-	-	-	-	-	-	18.334

The FY 2015 OCO Request will be submitted at a later date.

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 innovation, 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.

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	113.690	112.617	113.908	-	113.908
Current President's Budget	117.855	112.617	113.908	-	113.908
Total Adjustments	4.165	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.809	-			
• SBIR/STTR Transfer	-3.876	-			
• Rate/Misc Adjustments	0.001	-	-	-	-

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1319: Research, Development, Test & Evaluation, Navy / BA 1: Basic Research			PE 0601103N / University Research Initiatives			
• Congressional General Reductions			-11.151	-	-	-
Adjustments						
• Congressional Add Adjustments			20.000	-	-	-
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: 9999: Congressional Adds						
Congressional Add: University Research Program (Cong)						
Congressional Add Subtotals for Project: 9999						
Congressional Add Totals for all Projects						
Change Summary Explanation						
Technical: N/A						
Schedule: N/A						

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601103N / University Research Initiatives				Project (Number/Name) 0000 / University Research Initiatives			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
0000: University Research Initiatives	-	99.521	112.617	113.908	-	113.908	116.196	118.764	120.901	120.901	Continuing	Continuing
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
<p>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 innovation, 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.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2013	FY 2014	FY 2015	
Title: DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP)									17.342	22.226	22.596	
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 \$1.5M. 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. DURIP is a one year program.												
FY 2013 Accomplishments:												

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Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / University Research Initiatives	Project (Number/Name) 0000 / University Research Initiatives		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
- Continued competition for research instrumentation awards to universities. FY 2014 Plans: - Continue all efforts of FY 2013. FY 2015 Plans: - Continue all efforts of FY 2014.				
Title: MULTIDISCIPLINARY UNIVERSITY RESEARCH INITIATIVE (MURI) 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. MURI is a five year program. FY 2014 increased in funds to accommodate the increased number of new starts in FY 2014. FY 2013 Accomplishments: - Continued 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. - Continued MURI projects begun in prior years. FY 2014 Plans: - Continue all efforts of FY 2013. FY 2015 Plans: - Continue all efforts of FY 2014.		73.202	82.017	82.813
Title: PRESIDENTIAL EARLY CAREER AWARDS (PECASE) Description: PECASE awards are made to academic scientists early in their research careers for extremely prestigious, single-investigator research in areas of vital importance to the Navy. Awards provide national recognition and research grants of up to		8.977	8.374	8.499

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014
<p>\$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. PECASE is a five year program.</p> <p><i>FY 2013 Accomplishments:</i></p> <ul style="list-style-type: none"> - Selected six outstanding university researchers to receive the five-year PECASE research award to conduct research of importance to the Navy. - Continued PECASE programs begun in earlier years. <p><i>FY 2014 Plans:</i></p> <ul style="list-style-type: none"> - Continue all efforts of FY 2013, and award four new awards per OSD guidance. <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Continue all efforts of FY 2014, and award four new awards per OSD guidance. 			
Accomplishments/Planned Programs Subtotals		99.521	112.617
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			
E. Performance Metrics			
<p>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.</p>			

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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
9999: Congressional Adds	-	18.334	-	-	-	-	-	-	-	-	-	18.334

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification
 This project shows Congressional Adds to this Program Element.
 FY2013 Accomplishments. 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.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014
Congressional Add: University Research Program (Cong)	18.334	-
FY 2013 Accomplishments: 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.		
FY 2014 Plans: N/A		
Congressional Adds Subtotals	18.334	-

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

Remarks

D. Acquisition Strategy
 N/A

E. Performance Metrics
 This project shows Congressional Adds to this Program Element.