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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 1: <i>Basic Research</i>	R-1 ITEM NOMENCLATURE PE 0601103F: <i>University Research Initiatives</i>
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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
Total Program Element	127.656	152.273	141.153	-	141.153	138.747	143.700	145.131	145.204	Continuing	Continuing
615094: <i>University Research Initiatives</i>	127.656	152.273	141.153	-	141.153	138.747	143.700	145.131	145.204	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports defense-related basic research in a wide range of scientific and engineering disciplines relevant to maintaining U.S. military technology superiority. Research topics include, but are not limited to, transformational and high priority technologies such as nanotechnology, sensor networks, intelligence information fusion, smart materials and structures, efficient energy and power conversion, and high-energy materials for propulsion and control. The program also enhances and promotes the education of U.S. scientists and engineers in disciplines critical to maintaining, advancing, and enabling future U.S. defense technologies. For example, the National Defense Science and Engineering Graduate (NDSEG) program awards fellowships to train U.S citizens in science and engineering disciplines of military importance under a joint tri-Service and Office of the Assistant Secretary of Defense for Research and Engineering competition. Finally, this program assists universities in establishing superior instrumentation capabilities needed to improve the quality of defense-related research and education. A fundamental component of this program is the recognition that future technologies and technology exploitations require highly coordinated and concerted multi- and inter-disciplinary efforts. Efforts in this program have been coordinated through the Reliance 21 process to harmonize efforts and eliminate duplication. This program is in Budget Activity 1, Basic Research, because it funds basic scientific study and experimentation.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	136.297	140.273	145.093	-	145.093
Current President's Budget	127.656	152.273	141.153	-	141.153
Total Adjustments	-8.641	12.000	-3.940	-	-3.940
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	12.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.000	-			
• SBIR/STTR Transfer	-3.945	-			
• Other Adjustments	-0.696	-	-3.940	-	-3.940

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

Project: 615094: *University Research Initiatives*
 Congressional Add: *Cyber Security Research*

FY 2011	FY 2012
-	12.000

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Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2011	FY 2012
Congressional Add Subtotals for Project: 615094	-	12.000
Congressional Add Totals for all Projects	-	12.000

Change Summary Explanation

FY11: Other Adjustments include: -0.696 General Congressional Reductions

FY12: Congress added \$12 million for Cyber Security Research.

Decrease in FY 2013 due to higher Department of Defense priorities.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Major Thrust 1.	72.765	77.852	78.341	-	78.341
Description: Promote fundamental, multi- and interdisciplinary science and engineering research projects.					
FY 2011 Accomplishments: Funded competitive research grants at U.S. universities that focus on significantly expanding the basic knowledge of Air Force-relevant science and technology areas, not normally achievable in smaller funded, single investigator awards. Supported and recognized superior academic researchers in the early stages of their career through the Presidential Early Career Award for Scientists and Engineers (PECASE) program. Continued funding of multi-disciplinary programs initially awarded in prior years.					
FY 2012 Plans: Continue funding competitive research grants at U.S. universities that focus on significantly expanding the basic knowledge of Air Force-relevant science and technology areas, not normally achievable in smaller funded, single investigator awards. Support and recognize superior academic researchers in the early stages of their career through the PECASE program. Continue funding of multi-disciplinary programs initially awarded in prior years.					
FY 2013 Base Plans: Continue funding competitive research grants at U.S. universities that focus on significantly expanding the basic knowledge of Air Force-relevant science and technology areas, not normally achievable in smaller funded, single investigator awards. Support and recognize superior academic researchers in the early stages of their career through the PECASE program. Continue funding of multi-disciplinary programs initially awarded in prior years.					
FY 2013 OCO Plans:					

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
N/A					
<p>Title: Major Thrust 2.</p> <p>Description: Support post-graduate, graduate, and undergraduate education in science and engineering disciplines at U.S. universities.</p> <p>FY 2011 Accomplishments: Awarded approximately 200 fellowships within the highly competitive NDSEG fellowships. Funded competitive awards for graduate and undergraduate research experiences, including those established under the Awards to Stimulate and Support Undergraduate Research Experiences (ASSURE) program designed to increase the number of high-quality undergraduate science and engineering majors. Continued funding for awards initiated under prior year Department of Defense programs.</p> <p>FY 2012 Plans: Continue to award highly competitive NDSEG fellowships. Continue to support competitive awards for graduate and undergraduate research experiences, including those established under the ASSURE program. Continue funding for awards initiated under prior year Department of Defense programs.</p> <p>FY 2013 Base Plans: Continue to award highly competitive NDSEG fellowships. Continue to support competitive awards for graduate and undergraduate research experiences, including those established under the ASSURE program. Continue funding for awards initiated under prior year Department of Defense programs.</p> <p>FY 2013 OCO Plans: N/A</p>	42.370	46.571	46.863	-	46.863
<p>Title: Major Thrust 3.</p> <p>Description: Enhance the scientific and engineering research through advanced education infrastructure and instrumentation at U.S. universities.</p> <p>FY 2011 Accomplishments: Awarded highly-competitive grants under the Defense University Research Instrumentation Program (DURIP) to U.S. universities. DURIP is designed to improve the capabilities of U.S. universities by providing grants for state-of-the-art, high technology instrumentation and infrastructure.</p> <p>FY 2012 Plans:</p>	12.521	15.850	15.949	-	15.949

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue to award grants on a competitive basis under the DURIP to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities. FY 2013 Base Plans: Continue to award grants on a competitive basis under the DURIP to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities. FY 2013 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	127.656	140.273	141.153	-	141.153

	FY 2011	FY 2012
Congressional Add: Cyber Security Research FY 2012 Plans: Conduct Congressionally-directed effort on cyber security.	-	12.000
Congressional Adds Subtotals	-	12.000

D. Other Program Funding Summary (\$ in Millions)						Cost To					
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Complete</u>	<u>Total Cost</u>
• N/A: N/A	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

E. Acquisition Strategy
N/A

F. Performance Metrics
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.