Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601103F: *University Research Initiatives*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	137.447	136.297	140.273	-	140.273	145.093	147.415	149.702	152.397	Continuing	Continuing
615094: *University Research Initiatives*	137.447	136.297	140.273	-	140.273	145.093	147.415	149.702	152.397	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 Director of Defense 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 Science, because it funds basic scientific study and experimentation.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	141.524	136.297	140.273	-	140.273
Current President's Budget	137.447	136.297	140.273	-	140.273
Total Adjustments	-4.077	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-0.008	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.069	-			
• Other Adjustments	-	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 615094: *University Research Initiatives*		
Congressional Add: *High Temperature Hydrogen Energy Production.*	0.797	-

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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Congressional Add: *Cyber Security for Control Networks Research.*	1.693	-
Congressional Add: *Cyber Security Research Program/Cyber Security Laboratory.*	1.195	-
Congressional Add: *Unmanned Aerial Systems Mission Planning and Operation Center.*	2.788	-
Congressional Add: *Cyber Innovation Center (CIC) Research and Development Seed Fund.*	0.797	-
Congressional Add: *Energy and Sensor Informatics Research and Transition.*	0.797	-
Congressional Add: *Frank R. Seaver Science and Engineering Initiative.*	1.753	-
Congressional Add Subtotals for Project: 615094	9.820	-
Congressional Add Totals for all Projects	9.820	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 1: *Basic Research*	R-1 ITEM NOMENCLATURE PE 0601103F: *University Research Initiatives*	PROJECT 615094: *University Research Initiatives*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
615094: *University Research Initiatives*	137.447	136.297	140.273	-	140.273	145.093	147.415	149.702	152.397	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 Director of Defense 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 Science, because it funds basic scientific study and experimentation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Major Thrust 1. ***Description:*** Promote fundamental, multi- and interdisciplinary science and engineering research projects. ***FY 2010 Accomplishments:*** Continued 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. 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 2011 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 2012 Base Plans:***	70.483	75.646	77.852	-	77.852

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
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 2012 OCO Plans:***					
Title: Major Thrust 2. ***Description:*** Support post-graduate, graduate, and undergraduate education in science and engineering disciplines at U.S. universities. ***FY 2010 Accomplishments:*** Awarding of fellowships within the highly competitive NDSEG program continued, as did competitive awards for graduate and undergraduate research experiences including those established under the Awards to Stimulate and Support Undergraduate Research Education (ASSURE) program. Continued funding for awards initiated under prior year Department of Defense programs. ***FY 2011 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. ***FY 2012 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. ***FY 2012 OCO Plans:***	42.614	45.250	46.571	-	46.571
Title: Major Thrust 3. ***Description:*** Enhance the scientific and engineering research through advanced education infrastructure and instrumentation at U.S. universities. ***FY 2010 Accomplishments:***	14.530	15.401	15.850	-	15.850

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Awarded grants on a competitive basis under the Defense University Research Instrumentation Program (DURIP) to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure that will enhance research and educational capabilities. ***FY 2011 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 2012 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 2012 OCO Plans:***					
Accomplishments/Planned Programs Subtotals	127.627	136.297	140.273	-	140.273

	FY 2010	FY 2011
Congressional Add: High Temperature Hydrogen Energy Production. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	0.797	-
Congressional Add: Cyber Security for Control Networks Research. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	1.693	-
Congressional Add: Cyber Security Research Program/Cyber Security Laboratory. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	1.195	-
Congressional Add: Unmanned Aerial Systems Mission Planning and Operation Center. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	2.788	-
Congressional Add: Cyber Innovation Center (CIC) Research and Development Seed Fund.	0.797	-

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	FY 2010	FY 2011
FY 2010 Accomplishments: Conducted Congressionally-directed effort. ***FY 2011 Plans:***		
Congressional Add: Energy and Sensor Informatics Research and Transition. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	0.797	-
Congressional Add: Frank R. Seaver Science and Engineering Initiative. ***FY 2010 Accomplishments:*** Conducted Congressionally-directed effort. ***FY 2011 Plans:***	1.753	-
Congressional Adds Subtotals	9.820	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Activity Not Provided: *Title Not Provided*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

N/A

E. 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.