

UNCLASSIFIED

PE NUMBER: 0601103F
 PE TITLE: University Research Initiatives

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
---------------------------------------------------------	------------------------------

BUDGET ACTIVITY 01 Basic Research	PE NUMBER AND TITLE 0601103F University Research Initiatives
----------------------------------------------------	-------------------------------------------------------------------------------

Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	111.803	119.938	125.949	130.938	135.960	140.507	146.001	Continuing	TBD
5094 University Research Initiatives	111.803	119.938	125.949	130.938	135.960	140.507	146.001	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program supports defense-related basic research in a wide range of scientific and engineering disciplines pertinent to maintaining U.S. military technology superiority; enhances and promotes the education of U.S. scientists and engineers in disciplines critical to maintaining, advancing, and enabling future U.S. defense technologies; and 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 interdisciplinary efforts. Note: In FY 2008, Congress added \$2.4M for Battlespace Reducing Military Decision Cycles, \$1M for Frank R. Seaver Science and Engineering Complex, \$1M for High Temperature Hydrogen and the Space Education Consortium (SEC), \$2.4M for Secure Grid Research, and \$8M for University Research Initiatives. This program is in Budget Activity 1, Basic Science, because it funds scientific study and experimentation.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	115.035	104.304	101.850
(U) Current PBR/President's Budget	111.803	119.938	125.949
(U) Total Adjustments	-3.232	15.634	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.766	
Congressional Increases		16.400	
Reprogrammings			
SBIR/STTR Transfer	-3.232		

(U) Significant Program Changes:

Not Applicable.

C. Performance Metrics

(U) Under Development.

Exhibit R-2a, RDT&E Project Justification

DATE
February 2008

BUDGET ACTIVITY 01 Basic Research				PE NUMBER AND TITLE 0601103F University Research Initiatives			PROJECT NUMBER AND TITLE 5094 University Research Initiatives			
Cost (\$ in Millions)		FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5094	University Research Initiatives	111.803	119.938	125.949	130.938	135.960	140.507	146.001	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0		

- (U) **A. Mission Description and Budget Item Justification**
 This program supports defense-related basic research in a wide range of scientific and engineering disciplines pertinent to maintaining U.S. military technology superiority; enhances and promotes the education of U.S. scientists and engineers in disciplines critical to maintaining, advancing, and enabling future U.S. defense technologies; and 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 interdisciplinary efforts. Note: In FY 2008, Congress added \$2.4M for Battlespace Reducing Military Decision Cycles, \$1M for Frank R. Seaver Science and Engineering Complex, \$1M for High Temperature Hydrogen and the Space Education Consortium (SEC), \$2.4M for Secure Grid Research, and \$8M for University Research Initiatives. This program is in Budget Activity 1, Basic Science, because it funds scientific study and experimentation.
- | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|
| (U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u> | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
| (U) MAJOR THRUST: Promote fundamental, multi- and interdisciplinary science and engineering research projects. Topics will be selected in scientific research areas related to transformational and high priority technologies, such as nanotechnology, sensor networks, intelligence information fusion, smart materials and structures, efficient energy and power conversion, high energy materials for propulsion and control, and enhancing human performance. | 54.657 | 55.682 | 71.312 |
| (U) In FY 2007: Funded competitive research awards at U.S. universities to focus on underpinning Air Force-related technologies usually not achievable through typical 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). Continued funding of multi-disciplinary programs begun in prior years. | | | |
| (U) In FY 2008: Continue funding competitive research awards at U.S. universities to focus on underpinning Air Force-related technologies usually not achievable through typical single investigator awards. Continue to support and recognize superior academic researchers in the early stages of their career through PECASE. Continue funding of multi-disciplinary programs begun in prior years. | | | |
| (U) In FY 2009: Continue funding competitive research awards at U.S. universities to focus on underpinning Air Force-related technologies usually not achievable through typical single investigator awards. Support and recognize superior academic research through the PECASE. Continue funding of multi-disciplinary programs begun in prior years. | | | |
| (U) MAJOR THRUST: Support post-graduate, graduate, and undergraduate education in science and engineering disciplines at U.S. universities. National Defense Science and Engineering Graduate Program (NDSEG) Fellowships | 36.317 | 36.325 | 41.058 |

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification	DATE February 2008
------------------------------------------------------	------------------------------

BUDGET ACTIVITY 01 Basic Research	PE NUMBER AND TITLE 0601103F University Research Initiatives	PROJECT NUMBER AND TITLE 5094 University Research Initiatives
---------------------------------------------	------------------------------------------------------------------------	-------------------------------------------------------------------------

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>			
are awarded 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.			
(U) In FY 2007: Awarded highly competitive NDSEG fellowships. Supported competitive awards for graduate and undergraduate research experiences including those established under the Awards to Stimulate and Support Undergraduate Research Education program. Continued to fund for awards made under prior year Department of Defense programs.			
(U) In FY 2008: Continue to award highly competitive NDSEG fellowships. Continue to support competitive awards for graduate and undergraduate research experiences including those established under the Awards to Stimulate and Support Undergraduate Research Education program. Continue funding for awards made under prior year Department of Defense programs.			
(U) In FY 2009: Continue to award highly competitive NDSEG fellowships. Continue to support competitive awards for graduate and undergraduate research experiences including those established under the Awards to Stimulate and Support Undergraduate Research Education program. Continue funding for awards made under prior year Department of Defense programs.			
(U) MAJOR THRUST: Enhance the scientific and engineering research through advanced education infrastructure and instrumentation at U.S. universities.	13.180	11.636	13.579
(U) In FY 2007: Conducted the competition for U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities under the Defense University Research Instrumentation Program.			
(U) In FY 2008: Continue to conduct the competition for U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities under the Defense University Research Instrumentation Program.			
(U) In FY 2009: Continue to conduct the competition for U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities under the Defense University Research Instrumentation Program.			
(U) CONGRESSIONAL ADD: High Assurance Software Engineering.	1.743	0.000	0.000
(U) In FY 2007: Conducted research on the security issues in information technology architectures and components.			
(U) In FY 2008: Not Applicable.			
(U) In FY 2009: Not Applicable.			

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification			DATE February 2008		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE			
01 Basic Research	0601103F University Research Initiatives	5094 University Research Initiatives			
(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>		<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	
(U) CONGRESSIONAL ADD: Single Chip Multi-Modal Nansensors.		3.873	0.000	0.000	
(U) In FY 2007: Conducted research to develop single chip sensors for the detection of chemical and biological agents.					
(U) In FY 2008: Not Applicable.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: Partnership in Innovative Preparation for Educators and Students.		1.065	1.589	0.000	
(U) In FY 2007: Conducted multi-disciplinary research associated with information network for educators and students.					
(U) In FY 2008: Continue to conduct multi-disciplinary research associated with information network for educators and students.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: High Temperature Hydrogen Energy Production.		0.968	0.993	0.000	
(U) In FY 2007: Conducted research to develop methods for hydrogen production.					
(U) In FY 2008: Continue to conduct research to develop methods for hydrogen production.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: Battle Space Reducing Military Decision Cycle		0.000	2.385	0.000	
(U) In FY 2007: Not Applicable.					
(U) In FY 2008: Develop decision making tool that can result in rapid and effective analyses of battlefield situational elements and recommendation for response.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: Frank R. Seaver Science and Engineering Complex		0.000	0.993	0.000	
(U) In FY 2007: Not Applicable.					
(U) In FY 2008: Support the Frank R. Seaver Science and Engineering Complex in conducting basic research in science and engineering disciplines.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: Secure Grid Research		0.000	2.385	0.000	
(U) In FY 2007: Not Applicable.					
(U) In FY 2008: Conduct research on the security issues in information technology architectures and components.					
(U) In FY 2009: Not Applicable.					
(U) CONGRESSIONAL ADD: Univeristy Research Initiatives		0.000	7.950	0.000	
(U) In FY 2007: Not Applicable.					
(U) In FY 2008: Conduct university research and support post-graduate, and undergraduate education in science and engineering disciplines.		0.000	0.000	0.000	

Exhibit R-2a, RDT&E Project Justification

DATE

February 2008

BUDGET ACTIVITY
01 Basic Research

PE NUMBER AND TITLE
0601103F University Research
Initiatives

PROJECT NUMBER AND TITLE
5094 University Research Initiatives

(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) In FY 2009: Not Applicable			
(U) Total Cost	111.803	119.938	125.949

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	

(U) Related Activities:
 (U) PE 0601102F, Defense Research Sciences.
 This project has been coordinated through the Reliance 21 process to harmonize efforts and eliminate duplication.

(U) **D. Acquisition Strategy**
 Not Applicable.