

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force										Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 1: Basic Research					R-1 Program Element (Number/Name) PE 0601103F I University Research Initiatives							
COST (\$ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	132.526	145.044	147.923	0.000	147.923	150.158	154.054	157.135	160.278	Continuing	Continuing
615094: University Research Initiatives	-	132.526	145.044	147.923	0.000	147.923	150.158	154.054	157.135	160.278	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 competitive scholarship program. 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 Department of Defense (DoD) Science and Technology (S&T) Executive Committee process to harmonize efforts and eliminate duplication.

This program is in Budget Activity 1, Basic Research because this budget activity includes scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Base</b>	<b>FY 2018 OCO</b>	<b>FY 2018 Total</b>
Previous President's Budget	141.754	145.044	147.923	0.000	147.923
Current President's Budget	132.526	145.044	147.923	0.000	147.923
Total Adjustments	-9.228	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-4.253	0.000			
• SBIR/STTR Transfer	-4.975	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force		Date: May 2017		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 1: Basic Research		R-1 Program Element (Number/Name) PE 0601103F I University Research Initiatives		
Change Summary Explanation Decreases in FY 2016 reflects reprogramming to support Research and Development Projects, 10 U.S.C. Section 2358.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2016	FY 2017	FY 2018
Title: Multidisciplinary University Research Initiative  Description: Promote fundamental, multi- and interdisciplinary science and engineering research projects involving multiple principle investigators.  FY 2016 Accomplishments: Selected seven new projects for award under the Multidisciplinary University Research Initiative (MURI) program to fund 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. Sponsored grants under the Presidential Early Career Award for Scientists and Engineers (PECASE) program to support and recognize superior academic researchers in the early stages of their careers. Continued funding of multi-disciplinary programs initially awarded in prior years.  FY 2017 Plans: Fund 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 careers through the PECASE program. Continue funding of multi-disciplinary programs initially awarded in prior years.  FY 2018 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 careers through the PECASE program. Continue funding of multi-disciplinary programs initially awarded in prior years.		73.554	82.207	83.839
Title: Science and Engineering Education  Description: Support post-graduate, graduate, and undergraduate education in science and engineering disciplines at U.S. universities.  FY 2016 Accomplishments: Selected 60 new fellows for the highly competitive National Defense Science and Engineering Graduate (NDSEG) fellowships. Continued to support competitive awards for graduate and undergraduate research experiences, including those established		43.998	48.337	49.296

# UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> FY 2018 Air Force		<b>Date:</b> May 2017		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 1: Basic Research</i>		<b>R-1 Program Element (Number/Name)</b> PE 0601103F / <i>University Research Initiatives</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
under the Awards to Stimulate and Support Undergraduate Research Experiences (ASSURE) program. Continued funding for awards initiated under prior year DoD programs.				
<b>FY 2017 Plans:</b> Award highly competitive NDSEG fellowships. Support competitive awards for graduate and undergraduate research experiences, including those established under the ASSURE program. Continue funding for awards initiated under prior year DoD programs.				
<b>FY 2018 Plans:</b> 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 DoD programs.				
<b>Title:</b> Research Instrumentation		14.974	14.500	14.788
<b>Description:</b> Enhance scientific and engineering research through advanced education infrastructure and instrumentation at U.S. universities.				
<b>FY 2016 Accomplishments:</b> Selected 59 proposals on a competitive basis for award under the Defense University Research Instrumentation Program (DURIP) to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities.				
<b>FY 2017 Plans:</b> 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.				
<b>FY 2018 Plans:</b> 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.				
<b>Accomplishments/Planned Programs Subtotals</b>		132.526	145.044	147.923
<b>D. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>E. Acquisition Strategy</b>				
N/A				

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force		Date: May 2017
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I</i> BA 1: <i>Basic Research</i>	<b>R-1 Program Element (Number/Name)</b> PE 0601103F <i>I University Research Initiatives</i>	

## 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.