Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force											Date: March 2024	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601103F / *University Research Initiatives*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	191.797	182.372	143.372	0.000	143.372	98.091	107.526	119.875	138.624	Continuing	Continuing
615094: *University Research Initiatives*	-	191.797	182.372	143.372	0.000	143.372	98.091	107.526	119.875	138.624	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 technological superiority. Research topics include, but are not limited to, transformational and high-priority technologies such as nanotechnology, sensor networks, artificial intelligence and information fusion, smart materials and structures, quantum materials and processes for sensing, communication and computing, 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 Under 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 interdisciplinary efforts. Efforts in this program have been coordinated through the Department of Defense Science and Technology Executive Committee process to harmonize efforts and eliminate duplication.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science and technology capabilities. The use of program funds in this PE would be in addition to the civilian pay expenses budgeted in program elements 0601102F, 0602020F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602298F, 0602602F, 0602605F, 0602788F, and 1206601SF.

Funds in this program element may be used to investigate specified science advancements in air, cyber, and/or multidomains.

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.

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Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103F / *University Research Initiatives*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	206.192	182.372	158.784	0.000	158.784
Current President's Budget	191.797	182.372	143.372	0.000	143.372
Total Adjustments	-14.395	0.000	-15.412	0.000	-15.412
• 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	0.000	0.000			
• SBIR/STTR Transfer	-7.547	0.000			
• Other Adjustments	-6.848	0.000	-15.412	0.000	-15.412

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 615094: *University Research Initiatives*		
Congressional Add: *Program increase: Defense university research instrumentation program*	28.902	0.000
Congressional Add: *CPF-GHz-THz Antenna Systems*	4.817	0.000
Congressional Add Subtotals for Project: 615094	33.719	0.000
Congressional Add Totals for all Projects	33.719	0.000

Change Summary Explanation

Decrease in FY 2025 is due to Space-focused basic research transferring to 3620F: Research, Development, Test & Evaluation, Space Force; Program Element 0601103SF, University Research Initiatives; Project 610002: University Research Initiatives - Space.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Multidisciplinary University Research Initiative	85.362	96.372	77.785	0.000	77.785
Description: Promote fundamental, multi- and interdisciplinary science and engineering research projects involving multiple principal investigators. ***FY 2024 Plans:*** Enhance the program and fund competitive research grants at U.S. universities that focus on significantly expanding the basic knowledge of Department of the Air Force-relevant science and technology areas. Focus					

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force	Date: March 2024
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103F / *University Research Initiatives*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
on complex research efforts not normally achievable in smaller funded, single investigator awards. Support and recognize superior academic researchers in the early stages of their careers through the Presidential Early Career Award for Scientists and Engineers program. Fund the existing multi-year, multidisciplinary awards and receive proposals from universities to fund next round of multidisciplinary research grants. The FY 2024 Multidisciplinary University Research topics are: Plasmon-Controlled Single-Atom Catalysis; A New Mathematical Paradigm for Integrating Data, Models, Decisions; AlN Semiconductors for High-Power Electronics; Compositionally Complex Ceramics (CCCs) via Knowledge-Guided Pyrolysis for Hypersonics; Piezoelectric Materials Interfaced with Semiconductors for Integrated Quantum Systems; Space-Based Characterization of Arctic Permafrost Dynamics; Modeling and Measuring Multilevel Resonance; Fundamental Limits of Passive Heterodyne Photodetection of Incoherent, Broadband Sources; and Tensor Networks and Low-Rank Methods for High-Dimensional Computing. ***FY 2025 Base Plans:*** - Continue enhancing the program and continue funding competitive research grants at U.S. universities that focus on significantly expanding the basic knowledge of Department of the Air Force-relevant science and technology areas. - Continue to focus on complex research efforts not normally achievable in smaller funded, single investigator awards. - Continue to support and recognize superior academic researchers in the early stages of their careers through the Presidential Early Career Award for Scientists and Engineers program. - Continue funding the existing multi-year, multidisciplinary awards and receive proposals from universities to fund next round of multidisciplinary research grants. - Note: In FY 2025 and beyond some multidisciplinary university research initiative efforts will be accomplished in 3620F: Research, Development, Test & Evaluation, Space Force; Program Element 0601103SF, University Research Initiatives; Project 610002: University Research Initiatives - Space. ***FY 2025 OCO Plans:*** Not Applicable ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decreased compared to FY 2024 by 18.587 million. Funding decreased due to movement of effort to USSF program as shown in FY 2025 plans, and due to Air Force funding re-prioritization.					
Title: Science and Engineering Education	56.908	62.000	51.362	0.000	51.362

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Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103F / *University Research Initiatives*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Description: Support post-graduate, graduate, and undergraduate education in science and engineering disciplines at U.S. universities. ***FY 2024 Plans:*** Enhance the program and continue to award highly competitive National Defense Science and Engineering Graduate fellowships. Support competitive awards for graduate and undergraduate research experiences, including those established under the Awards to Stimulate and Support Undergraduate Research Experiences program. Fund awards initiated under prior year DoD programs. ***FY 2025 Base Plans:*** - Continue enhancing the program and continue to award highly competitive National Defense Science and Engineering Graduate fellowships. - Continue to support competitive awards for graduate and undergraduate research experiences, including those established under the Awards to Stimulate and Support Undergraduate Research Experiences program. - Continue funding for awards initiated under prior year DoD programs. ***FY 2025 OCO Plans:*** Not Applicable ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decreased compared to FY 2024 by $10.638 million. Funding decreased due to decreased emphasis in this effort.					
Title: Research Instrumentation ***Description:*** Enhance scientific and engineering research through advanced education infrastructure and instrumentation at U.S. universities. ***FY 2024 Plans:*** Enhance the program and award grants on a competitive basis under the Defense University Research Instrumentation Program to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities. ***FY 2025 Base Plans:***	15.808	24.000	14.225	0.000	14.225

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
- Continue enhancing the program and award grants on a competitive basis under the Defense University Research Instrumentation Program to U.S. universities to acquire state-of-the-art, high technology instrumentation and infrastructure to enhance research and educational capabilities. - Note: In FY 2025 and beyond some research instrumentation efforts will be accomplished in 3620F: Research, Development, Test & Evaluation, Space Force; Program Element 0601103SF, University Research Initiatives; Project 610002: University Research Initiatives - Space. ***FY 2025 OCO Plans:*** Not Applicable ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decreased compared to FY 2024 by $9.775 million. Funding decreased due to movement of effort to USSF program as shown in FY 2025 plans, and decreased emphasis in this effort.					
Accomplishments/Planned Programs Subtotals	158.078	182.372	143.372	0.000	143.372

	FY 2023	FY 2024
Congressional Add: Program increase: Defense university research instrumentation program ***FY 2023 Accomplishments:*** Conducted Congressionally directed effort. ***FY 2024 Plans:*** Not Applicable	28.902	0.000
Congressional Add: CPF-GHz-THz Antenna Systems ***FY 2023 Accomplishments:*** Conducted Congressionally directed effort. ***FY 2024 Plans:*** Not Applicable	4.817	0.000
Congressional Adds Subtotals	33.719	0.000

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

Not Applicable