Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Health Agency											Date: March 2023	
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0602115DHA *I Applied Biomedical Technology*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	333.218	160.265	258.734	177.395	0.000	177.395	187.036	175.039	176.659	180.182	Continuing	Continuing
200A: *Congressional Special Interests*	130.175	87.496	84.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
216: *Anomalous Health Incidents (AHI)*	0.000	0.000	15.000	15.000	0.000	15.000	15.000	0.000	0.000	0.000	Continuing	Continuing
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	3.476	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
306D: *Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)*	7.480	4.142	4.385	4.473	0.000	4.473	4.567	4.658	4.752	4.847	Continuing	Continuing
372: *GDF - Applied Biomedical Technology*	123.729	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372A: *GDF - ABT (Combat Casualty Care)*	14.855	15.931	17.459	21.789	0.000	21.789	22.125	22.468	22.817	23.213	Continuing	Continuing
372B: *GDF - ABT (Military Operational Medicine)*	26.255	33.510	34.706	35.357	0.000	35.357	36.061	36.785	37.521	38.273	Continuing	Continuing
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	10.611	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	7.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372E: *GDF - ABT (Military Infectious Disease)*	8.607	18.305	18.995	15.396	0.000	15.396	15.804	16.220	16.644	17.037	Continuing	Continuing
372F: *GDF - ABT (Radiological Health Effects)*	0.966	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372G: *GDF - ABT (Medical Technology)*	0.000	0.000	83.464	85.380	0.000	85.380	93.479	94.908	94.925	96.812	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Health Agency	Date: March 2023
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0602115DHA *I Applied Biomedical Technology*

A. Mission Description and Budget Item Justification

This program element (PE) provides applied research funding to refine concepts and ideas into potential solutions for military health and performance problems, with a view toward evaluating technical feasibility. Research in this PE is designed to address areas of interest to the Secretary of Defense regarding Wounded Warriors, capabilities identified through the Joint Capabilities Integration and Development System, and sustainment of DoD and multi-agency priority investments in science, technology, research, and development. Medical research, development, test, and evaluation (RDT&E) priorities for the Defense Health Program (DHP) are guided by, and will support, the National Defense Strategy, the National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, Military Families, the National Strategy for Combating Antibiotic Resistance, and the National Strategy for Biodefense.

Program development and execution is peer-reviewed and coordinated with all of the Military Services, appropriate Defense agencies or activities and other federal agencies, to include the Department of Veterans Affairs and, the Department of Health and Human Services. Funds in the PE support studies and investigations leading to candidate solutions that may involve use of animal models for testing in preparation for initial human testing. As research efforts mature, the most promising efforts will transition to technology development (PE 0603115) funding.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	74.024	174.009	177.395	0.000	177.395
Current President's Budget	160.265	258.734	177.395	0.000	177.395
Total Adjustments	86.241	84.725	0.000	0.000	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	88.721	84.725			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.480	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 200A: *Congressional Special Interests*		
Congressional Add: *462 - GDF - Restore Core Research Funding Reduction*	77.861	84.725
Congressional Add: *248 Congressional Add*	9.635	-
Congressional Add Subtotals for Project: 200A	87.496	84.725
Project: 372G: *GDF - ABT (Medical Technology)*		
Congressional Add: *Add input*	0.000	-
Congressional Add Subtotals for Project: 372G	0.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Defense Health Agency	Date: March 2023
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*	**R-1 Program Element (Number/Name)** PE 0602115DHA *I Applied Biomedical Technology*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add Totals for all Projects	87.496	84.725

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 200A / *Congressional Special Interests*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
200A: *Congressional Special Interests*	130.175	87.496	84.725	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This is a program increase due to GDF restoral in the FY22 enacted budget.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
Congressional Add: 462 - GDF - Restore Core Research Funding Reduction ***FY 2022 Accomplishments:*** This is a program increase due to GDF restoral in the FY22 enacted budget. ***FY 2023 Plans:*** This is a program increase due to GDF restoral in the FY23 enacted budget.	77.861	84.725
Congressional Add: 248 Congressional Add ***FY 2022 Accomplishments:*** Congressional Add	9.635	-
Congressional Adds Subtotals	87.496	84.725

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 216 / *Anomalous Health Incidents (AHI)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
216: *Anomalous Health Incidents (AHI)*	0.000	0.000	15.000	15.000	0.000	15.000	15.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Anomalous Health Incidents (AHI) are unexplained medical symptoms that occur after being potentially exposed to certain auditory or sensory disturbances. It can be further described as experiencing a sudden onset of perceived loud sounds, sensations of head pressure or vibrations, head or ear pain, hearing loss or ringing, dizziness, unsteady gait, visual disturbances, or cognitive deficit.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Anomalous Health Incidents (AHI) ***Description:*** Anomalous Health Incidents (AHI) are unexplained medical symptoms that occur after being potentially exposed to certain auditory or sensory disturbances. It can be further described as experiencing a sudden onset of perceived loud sounds, sensations of head pressure or vibrations, head or ear pain, hearing loss or ringing, dizziness, unsteady gait, visual disturbances, or cognitive deficit. ***FY 2023 Plans:*** Our research will further examine why AHIs occur, who is at-risk, and what the short- and long-term health effects are. Program development and execution is peer-reviewed and coordinated with DoS, DoD, the Intelligence Community, and other federal entities as they continue to investigate AHIs through numerous interagency efforts. ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** N/A	0.000	15.000	15.000	0.000	15.000
Accomplishments/Planned Programs Subtotals	0.000	15.000	15.000	0.000	15.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 216 / *Anomalous Health Incidents (AHI)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 306B / *Advanced Diagnostics & Therapeutics Research & Development (AF)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	3.476	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides applied research funding needed to increase efficiency and efficacy of care across the spectrum of Advanced Diagnostics and Therapeutics requirements to improve and enhance clinical Diagnosis, Identification, Quantification and Mitigation (DIQM) methods, technique protocols, guidelines and practices for all Department of Defense (DoD) wounded, ill, and/or injured beneficiaries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Advanced Diagnostics & Therapeutics Research & Development (AF)	0.000	0.000	0.000	0.000	0.000
Description: This project provides applied research funding needed to perform research in the area of diagnostic assay development / refinement for diseases of operational significance. Project funds seek to promote 'omic'-informed personalized medicine with an emphasis on targeted prevention, diagnosis, and treatment. The delivery of pro-active, evidence-based, personalized medicine will improve health in Warfighters and beneficiaries by providing care that is specific to the situation and patient, to include preventing disease or injury, early and accurate diagnosis, and selection of appropriate and effective treatment. Personalized medicine will reduce morbidity, mortality, mission impact of illness / injury, and healthcare costs while increasing health and wellness of the AF population and efficiency of the healthcare system. This applied research supports multiple focus areas, each of which represents an identified barrier / gap which must be addressed for successful implementation of 'omic-informed personalized medicine.					
FY 2023 Plans: N/A					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306B / *Advanced Diagnostics & Therapeutics Research & Development (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
306D: *Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)*	7.480	4.142	4.385	4.473	0.000	4.473	4.567	4.658	4.752	4.847	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides applied research to define and develop medical attribute-linked solutions to better address Air Force operational readiness and mission effectiveness. This research develops approaches aimed at increasing the understanding of full spectrum factors impacting health and performance across Air Force operating environments, to include critical Air Force-supported mission areas of air and space superiority, aeromedical evacuation, communications and intelligence systems, global information operations, reconnaissance and electronic-combat aircraft. Includes research in operationally relevant Air and Space environments pertaining to Biomedical Impact of Air and Space, Biotechnology for Health and Performance, Cognitive and Physiological Performance, and Health and Performance Sensing and Assessment. This project supports needs outlined in Air Force (AF) and Air Force Medical Service (AFMS) strategic documents. Research within this project includes but is not limited to the following: understand the physical and cognitive attributes most important for human performance in air and space operations, facilitate medical readiness maintenance in air and space operations with military labor support, understand the patient validation requirements for a rocket cargo capability, determine how personal health monitoring devices may be used to support scalable medical command and control in air and space operations, develop modules for the human and weapon system which incorporates medical readiness factors into the kill-chain, develop science and technology to prevent and treat chronic health issues associated with air and space operations with minimal labor resourcing, understand value-driven medical readiness requirements for tip-of-spear operators, and investigate physio-cognitive sensor technology to inform medical readiness and human performance boundary status.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)	4.142	4.385	4.473	0.000	4.473
Description: Applied research to develop approaches to increase the understanding of the underlying medical and biological mechanisms of health in air and space operational environments that link to optimizing mission performance and readiness. Research will identify metrics of physical, cognitive, behavioral, physiological, sensory and motor attributes. This will shape medically relevant screening, risk-assessment, retention and return-to-duty criteria through data driven risk analysis and mitigation actions, and enhance the delivery of Air Force operational care.					
FY 2023 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Enhance knowledge base regarding medical equipment performance in cold region environment. Enhance medical understanding for cognitive sustainment of airman and guardians to include a deeper understanding of physiologic degradation and limitations by defining, measuring, and forecasting key aerospace-linked physiologic/anatomic characteristics which tie to operator readiness and performance. Develop physical and physio-cognitive assessments via wearables embedded with physiological sensors and rapid assessments to determine readiness for Air Force mission sets. Investigate new screening tests and methods, which leverage neuroscience tools to optimize operator alignment and facilitate return-to-duty decisions. Incorporate physiological estimates of fatigue, cognitive load and effectiveness of countermeasures into war-gaming exercises. Measure critical aircrew biodynamic and chronic health-related parameters to inform model design and aircraft design mitigation strategies. Evaluate potential injured patient transit capabilities. Develop microbiome-gut-brain in vitro model systems to determine how gut microbiota impacts energy homeostasis during temperature extremes during air and space operations. Evaluate thermal burden impacts on cognition. Examine telemedicine, telemonitoring, and telementoring (TM3) network threats, develop courses of action and a network proof-of-concept design for a peer-engagement operation. Explore real-time decision support tools for use in communication-denied environments. Design sensor platforms to continuously measure hydration, kidney/ muscle function, etc. and assess patient state and response to interventions for mass casualty response and/or en route care. Further evaluation of genetic predisposition to hypoxia induced cognitive decrement.					
FY 2024 Base Plans: Inform emerging sensor and artificial intelligence development using knowledge gained in FY 2023. Examine relationship between medical screening tests and simulated performance and capability of physiological metrics which signal changes in performance related to workload and fatigue. Validate link between physical/physio-cognitive assessments and evidence-based interventions to promote behavioral changes to enhance readiness, health, and performance. Incorporate real-world parameter estimates from performance-related datasets and demonstrate performance modeling including appropriate decrements. Understand the etiology of repetitive sub-acute accelerative loading on human soft tissues leading to chronic injury and disease. Quantify effect of cold and heat stress on gut microbiome. Perform Africa, South Pacific, and Arctic TM3 network threat assessment, design courses of action, and develop proof-of-concept for austere, electromagnetic constrained environment.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Advanced Diagnostics & Therapeutics Research & Development - Medical and Operational Biosciences (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase is due to inflation.					
Accomplishments/Planned Programs Subtotals	4.142	4.385	4.473	0.000	4.473

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Acquisition Strategy not required for Budget Activities 1, 2, 3, or 6 per DoD Financial Management Regulation (FMR) Volume 2B, Chapter 5, Paragraph 4.2.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372 / *GDF - Applied Biomedical Technology*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372: *GDF - Applied Biomedical Technology*	123.729	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Guidance for Development of the Force - Applied Biomedical Technology: Applied biomedical technology research will focus on refining concepts and ideas into potential solutions for military problems and conducting analyses of alternatives to select the best potential solution for further advanced technology development. Applied research is managed by the Joint Program Committees in the following areas: 1- Military Infectious Diseases applied research is developing protection and treatment capabilities for military relevant emerging infectious diseases and wound infections. 2- Military Operational Medicine applied research goals are to develop medical countermeasures against operational stressors, prevent and treat musculoskeletal, neurosensory, and psychological injuries during training and operations, and to maximize health, performance and readiness of Service members. 3- Combat Casualty Care applied research is focused on optimizing survival and recovery in injured Service members across the spectrum of care from point of injury through en route and facility care.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: GDF Applied Biomedical Technology	0.000	0.000	0.000	0.000	0.000
Description: Focus is on refining concepts and ideas into potential solutions to military problems and conducting analyses of alternatives to select the best potential solution for further advanced technology development. Evaluate technical feasibility of potential solutions to military health issues. Implement models into data or knowledge and test in a laboratory environment. Technology Transition and Milestone A packages will be developed to facilitate product transition. ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372 / *GDF - Applied Biomedical Technology*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Acquisition Strategy not required for Budget Activities 1, 2, 3, or 6 per DoD Financial Management Regulation (FMR) Volume 2B, Chapter 5, Paragraph 4.2.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372A / *GDF - ABT (Combat Casualty Care)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372A: *GDF - ABT (Combat Casualty Care)*	14.855	15.931	17.459	21.789	0.000	21.789	22.125	22.468	22.817	23.213	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports applied research with the goal of optimizing Warfighter survival and recovery from combat-related injury in current and future operational scenarios by driving medical innovation through development of knowledge and materiel solutions for the management of combat-related trauma. Applied biomedical research will focus on refining concepts and ideas into potential solutions for military problems and conducting analysis of alternatives to select the best potential solutions for further advanced technology development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Combat Casualty Care	15.931	17.459	21.789	0.000	21.789
Description: Combat Casualty Care applied research activities are focused on care in the areas of prolonged field care; pre-hospital tactical combat casualty care; battlefield traumatic brain injury/neurotrauma and burn injury. ***FY 2023 Plans:*** Will continue Combat Casualty Care applied research activities focused on establishing preclinical and clinical effects of prolonged care technologies, early interventions for acute traumatic brain injury, and innovative products for resuscitation and immediate stabilization of combat casualties in a scenario of multi-domain operations. ***FY 2024 Base Plans:*** Efforts will continue to focus on combat casualty care applied research to include establishing preclinical and clinical effects of prolonged care technologies, early interventions for acute traumatic brain injury, and innovative products for resuscitation and immediate stabilization of combat casualties in a scenario of multi-domain operations. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372A / *GDF - ABT (Combat Casualty Care)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase supports combat casualty care applied research to enable combined injury care during joint all domain operations.					
Accomplishments/Planned Programs Subtotals	15.931	17.459	21.789	0.000	21.789

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372B / *GDF - ABT (Military Operational Medicine)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372B: *GDF - ABT (Military Operational Medicine)*	26.255	33.510	34.706	35.357	0.000	35.357	36.061	36.785	37.521	38.273	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports applied research with the goal of maximizing the health, readiness, and performance of Service members and their families by the development of effective biomedical countermeasures against operational stressors, and prevention and treatment of physical and psychological injuries during training and operations. Applied biomedical research will focus on refining concepts and ideas into potential solutions for military problems and conducting analysis of alternatives to select the best potential solutions for further advanced technology development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Military Operational Medicine	33.510	34.706	35.357	0.000	35.357
Description: Studies, investigations, and non-system specific technology effort focus on injury prevention and recovery; optimized cognition and fatigue management; psychological health and resilience; and performance in extreme environments. Activities will continue to focus on injury prevention and recovery related to blunt, blast, and accelerative injuries; injury prevention and recovery related to musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience.					
FY 2023 Plans: Efforts will continue to focus on injury prevention and recovery related to blunt, blast, and accelerative injuries, as well as musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; performance nutrition and weight balance; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience.					
FY 2024 Base Plans: Efforts will continue to focus on military operation medicine applied research related to blunt, blast, and accelerative injuries, neurosensory injuries, as well as musculoskeletal injury; fatigue, cognitive health and performance; human operator health and performance in complex systems; performance nutrition and weight					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372B / *GDF - ABT (Military Operational Medicine)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
balance; operational systems toxicology for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Increase due to inflation.					
Accomplishments/Planned Programs Subtotals	33.510	34.706	35.357	0.000	35.357

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372C / *GDF - ABT (Medical Simulation & Training/Health Informatics)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	10.611	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Conduct studies and experimentation to meet a military medical need. Efforts are directed toward expanding and applying knowledge to develop or improve devices, systems, processes or methods that support medical simulation to increase military medical personnel's knowledge, skills and abilities to deliver combat casualty care support to manage patient injury and illness and to conduct patient movement from point of injury through role of care four.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics)	0.000	0.000	0.000	0.000	0.000
Description: Studies, investigations, and non-system specific technology efforts focused on tissue models, technologies that simulate medical condition progress over time, technologies that simulate injury, technologies that replicate warfighter bio-physiology, and, technologies that simulate high-fidelity combat casualty care scenarios. Activities will continue to focus on tissue models that accurately simulate the feel, pliability, flexibility, and responsiveness of live tissue; technologies that simulate the degradation or worsening of a medical condition over time, as well as simulate the improvement of a medical condition over time; technologies that simulate injury, especially hemorrhage, fractures, and ocular damage; technologies that accurately reflect warfighter bodily characteristics and are rugged enough to simulate patient care and movement throughout the entire continuum of care; technologies that simulate combat scenarios to provide realistic environments; and technologies that simulate patient movement through the continuum of care.					
FY 2023 Plans: N/A					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372C / *GDF - ABT (Medical Simulation & Training/Health Informatics)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372D / *GDF - ABT (Clinical and Rehabilitation Medicine)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	7.064	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Clinical and rehabilitative medicine activities for products to transition to technology development in the areas of neuromusculoskeletal injury, pain management, regenerative medicine, and sensory systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Clinical and Rehabilitation Medicine	0.000	0.000	0.000	0.000	0.000
Description: Applied research in neuromusculoskeletal injuries to advance the diagnosis, treatment and rehabilitation outcomes after Service-related injuries continues to progress. Targets for therapies to alleviate acute, chronic, and battlefield pain. Continue to focus efforts on developing solutions to repair, reconstruct or regenerate tissue lost or damaged due to traumatic injury, as well as, optimize restoration and rehabilitation of hearing and balance. ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372D / *GDF - ABT (Clinical and Rehabilitation Medicine)*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372E / *GDF - ABT (Military Infectious Disease)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372E: *GDF - ABT (Military Infectious Disease)*	8.607	18.305	18.995	15.396	0.000	15.396	15.804	16.220	16.644	17.037	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports applied research toward the goal of preventing and treating infectious disease threats to eliminate their impacts on operational readiness. Applied biomedical research will focus on refining concepts and ideas into potential solutions for military problems and conducting analysis of alternatives to select the best potential solutions for further advanced technology development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Military Infectious Diseases	18.305	18.995	15.396	0.000	15.396
Description: Multi-year studies in wound infections continue to address the ability to predict infection and better treatment options for infections with multidrug-resistant (MDR) bacterial pathogens. Novel and innovative therapeutics and delivery technologies for combat wounds. ***FY 2023 Plans:*** Will continue to focus on supporting wound infections and EID countermeasures development. ***FY 2024 Base Plans:*** Efforts will continue to focus on development of countermeasures against emerging infectious diseases threats and novel and innovative therapeutics and delivery technologies for wound infections. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** Decrease reflects planned maturations of technology to address emerging infectious diseases and wound infections.					
Accomplishments/Planned Programs Subtotals	18.305	18.995	15.396	0.000	15.396

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372E / *GDF - ABT (Military Infectious Disease)*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372F / *GDF - ABT (Radiological Health Effects)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372F: *GDF - ABT (Radiological Health Effects)*	0.966	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports applied research with the goal of pursuing the development of Food and Drug Administration (FDA) approved drugs, biologicals, and diagnostics (e.g., biodosimetry) to increase survival and decrease incapacity after acute radiation exposures.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Radiological Health Effects	0.881	0.000	0.000	0.000	0.000
Description: Research will support discovery of one to two Medical Countermeasures (MCMs) candidates to development toward Technology Readiness Level 6 (TRL-6) in support of transition to the advanced developer. In addition to identifying MCM candidates, this research will provide a fundamental understanding of the effects of radiation exposure. MCM identification will also be supported by the development and characterization on animal models to support FDA compliance, and also the identification and characterization of biomarkers to identify druggable targets and to support characterization of the mechanism of action of candidate MCMs. ***FY 2023 Plans:*** N/A ***FY 2024 Base Plans:*** N/A ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	0.881	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372F / *GDF - ABT (Radiological Health Effects)*

C. Other Program Funding Summary ($ in Millions)

Remarks

Radiological Health Effects has been moved under Combat Casualty Care.

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency			Date: March 2023
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 372G / *GDF - ABT (Medical Technology)*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
372G: *GDF - ABT (Medical Technology)*	0.000	0.000	83.464	85.380	0.000	85.380	93.479	94.908	94.925	96.812	Continuing	Continuing

A. Mission Description and Budget Item Justification

Applied Research described here focuses on the application of knowledge gained through basic research to refine drugs, vaccines, medical devices, diagnostics, medical practices/procedures, and other preventive measures essential to the protection and sustainment of Warfighter health. Research is conducted in the following principal areas: Combat Casualty Care, Military Operational Medicine, and Military Infectious Diseases.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: GDF - ABT (Biomedical Technology)	0.000	83.464	85.380	0.000	85.380
Description: Programmatic transfer in accordance with the 711/737 US Army Medical Research and Development Command transfer to Defense Health Agency in support of Medical Systems, Advanced Technology & Development from Army PEs 0602787A, 0602115A and 0602148A. This project supports application of knowledge gained through basic research to refine drugs, vaccines, medical devices, diagnostics, medical practices/procedures, and other preventive measures essential to the protection and sustainment of Warfighter health. ***FY 2023 Plans:*** Efforts will focus on Applied Research in support of Medical Technology. ***FY 2024 Base Plans:*** Efforts will focus on Applied Research in support of Medical Technology related to Autonomous Care and Evacuation, Aviation Medicine, Brain Trauma, Burn Injury, Combined Injury, Endemic and Emerging Infectious Diseases, En Route Care, Health in Extreme Environments, Neuromusculoskeletal Injury Prevention & Treatment, Psychological Health Prevention & Treatment, Prolonged Care, Tactical Combat Casualty Care, Sustainment of Expeditory Medical Skills, Sustained Medical Readiness, Warfighter Protection & Survivability and Wound Management. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Defense Health Agency		Date: March 2023
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372G / *GDF - ABT (Medical Technology)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Increase due to inflation.					
Accomplishments/Planned Programs Subtotals	0.000	83.464	85.380	0.000	85.380

	FY 2022	FY 2023
Congressional Add: Add input ***FY 2022 Accomplishments:*** N/A	0.000	-
Congressional Adds Subtotals	0.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A