Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Defense Health Agency											Date: April 2022	
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 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	494.078	72.573	162.745	174.009	0.000	174.009	161.901	171.340	174.319	175.923	Continuing	Continuing
200A: *Congressional Special Interests*	0.000	0.000	88.721	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
216: *Anomalous Health Incidents (AHI)*	0.000	0.000	0.000	15.000	0.000	15.000	0.000	0.000	0.000	0.000	Continuing	Continuing
246A: *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	11.824	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	20.113	0.151	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
306D: *Biomedical Impact and Readiness Optimization of Air & Space Operations (AF)*	6.080	4.064	4.299	4.385	0.000	4.385	4.473	4.567	4.658	4.751	Continuing	Continuing
372: *GDF - Applied Biomedical Technology*	399.163	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)*	0.000	14.855	15.151	17.459	0.000	17.459	18.789	19.125	19.468	19.817	Continuing	Continuing
372B: *GDF - ABT (Military Operational Medicine)*	0.000	26.255	26.779	34.706	0.000	34.706	35.357	36.061	36.785	37.523	Continuing	Continuing
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	0.000	10.611	10.826	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	0.000	7.064	7.204	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
372E: *GDF - ABT (Military Infectious Disease)*	0.000	8.607	8.779	18.995	0.000	18.995	18.396	18.804	19.220	19.644	Continuing	Continuing
372F: *GDF - ABT (Radiological Health Effects)*	0.000	0.966	0.986	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Defense Health Agency										Date: April 2022		
Appropriation/Budget Activity 0130: *Defense Health Program I* BA 2: *RDT&E*					R-1 Program Element (Number/Name) PE 0602115DHA *I Applied Biomedical Technology*							
372G: *GDF - ABT (Medical Technology)*	0.000	0.000	0.000	83.464	0.000	83.464	84.886	92.783	94.188	94.188	Continuing	Continuing
447A: *Military HIV Research Program (Army)*	56.898	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 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	72.573	74.024	174.009	0.000	174.009
Current President's Budget	72.573	162.745	174.009	0.000	174.009
Total Adjustments	0.000	88.721	0.000	0.000	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	88.721			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 200A: *Congressional Special Interests*		
Congressional Add: *462 - GDF - Restore Core Research Funding Reduction*	-	78.721
Congressional Add: *200A - Armed Forces Institute of Regenerative Medicine III*	-	10.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Defense Health Agency	Date: April 2022
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 2021	FY 2022
Congressional Add Subtotals for Project: 200A	-	88.721
Project: 216: *Anomalous Health Incidents (AHI)*		
Congressional Add: *Anomalous Health Incidents (AHI)*	0.000	0.000
Congressional Add Subtotals for Project: 216	0.000	0.000
Project: 372G: *GDF - ABT (Medical Technology)*		
Congressional Add: *Add input*	0.000	0.000
Congressional Add Subtotals for Project: 372G	0.000	0.000
Congressional Add Totals for all Projects	0.000	88.721

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
200A: *Congressional Special Interests*	0.000	0.000	88.721	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 2021	FY 2022
Congressional Add: 462 - GDF - Restore Core Research Funding Reduction ***FY 2022 Plans:*** This is a program increase due to GDF restoral in the FY22 enacted budget.	-	78.721
Congressional Add: 200A - Armed Forces Institute of Regenerative Medicine III ***FY 2022 Plans:*** Congressional Add	-	10.000
Congressional Adds Subtotals	-	88.721

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
216: *Anomalous Health Incidents (AHI)*	0.000	0.000	0.000	15.000	0.000	15.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Add input

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Anomalous Health Incidents (AHI) ***Description:*** Add input ***FY 2022 Plans:*** Add input ***FY 2023 Base Plans:*** Add input ***FY 2023 OCO Plans:*** Add input ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Add input	0.000	0.000	15.000	0.000	15.000
Accomplishments/Planned Programs Subtotals	0.000	0.000	15.000	0.000	15.000

	FY 2021	FY 2022
Congressional Add: Anomalous Health Incidents (AHI) ***FY 2021 Accomplishments:*** Add input ***FY 2022 Plans:*** Add input	0.000	0.000
Congressional Adds Subtotals	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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 2023 Defense Health Agency			Date: April 2022
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 246A / *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
246A: *Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army)*	11.824	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

At the President's direction in late 2013, a National Strategy was created to address the critical issue of antimicrobial resistance. This strategy was devised using an interagency approach and ultimately approved at the executive level (2014). Inherent in this work are DoD sponsored efforts to support the DoD's beneficiaries, but also complement national efforts to prevent, detect, and control illness and death related to infections caused by antibiotic-resistant bacteria. One critical need identified is for new therapeutics, to include antibiotics. This effort's focus is on the development of new/novel antibiotics, especially those targeting the most resistant and worrisome Gram negative bacterial pathogens, using existing expertise at the Walter Reed Army Institute of Research (WRAIR), and leveraging other WRAIR capabilities to evaluate viable candidate targets for advanced discovery. This project supports (both directly and indirectly) Global Health Security Agenda priorities to respond rapidly and effectively to biological threats of international concern.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Combating Antibiotic Resistant Bacteria (CARB) - WRAIR Discovery and Wound Program (Army) ***Description:*** Focus on continued establishment of in-house capabilities for an antibacterial drug discovery program directed toward military relevant drug-resistant bacteria that a) encompasses assessment of external products/candidates/leads that may meet DoD requirements, b) opens active intramural based discovery efforts of new potential products/candidates/leads for development, and c) fosters partnerships with external collaborators to develop/co-develop new potential antibacterial treatment therapeutics.	0.000	-	-	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

An Acquisition Strategy will be developed to support future Milestone B when a clinical development candidate is identified and reaches Technology Readiness Level (TRL)-6.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
306B: *Advanced Diagnostics & Therapeutics Research & Development (AF)*	20.113	0.151	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Advanced Diagnostics & Therapeutics Research & Development (AF) ***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.	0.151	-	-	-	-
Accomplishments/Planned Programs Subtotals	0.151	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Accomplishments: Mesenchymal Stem Cell (MSC)-derived exosomes were examined as modulators of 1) peripheral nerve regeneration and 2) repair from radiofrequency-induced auditory dysfunction. Raman microscopy was evaluated for the rapid detection of microbial water contamination.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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)*

D. Acquisition Strategy

Broad Area Announcements (BAA) and Intramural calls for proposals are used to award initiatives in this project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and / or regulatory approvals (IRB, etc.).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 306D / *Biomedical Impact and Readiness Optimization of Air & Space Operations (AF)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
306D: *Biomedical Impact and Readiness Optimization of Air & Space Operations (AF)*	6.080	4.064	4.299	4.385	0.000	4.385	4.473	4.567	4.658	4.751	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: in Biomedical Impact of Air and Space, Biotechnology for Health and Performance, Cognitive and Physiological Performance, and Health and Performance Sensing and Assessment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Biomedical Impact and Readiness Optimization of Air & Space Operations (AF)	4.064	4.299	4.385	0.000	4.385
Description: Applied research to develop approaches to increase the understanding of the underlying medical and biological mechanisms of health in operating environments that link to optimizing mission performance and readiness. Research will identify metrics of 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 2022 Plans: Develop models of health and performance relevant to Air Force operational environments using attribute-linked data to assess and mitigate risks impacting mission readiness. Continue to characterize relevant biomarkers, chemical, environmental and medical attributes that optimize mission performance. Continue to evaluate enroute care relevant safety issues and patient outcomes. Understand health impact of arctic operations.					
FY 2023 Base Plans: Enhance knowledge base regarding medical equipment performance in CREMO environment. Enhance medical understanding for cognitive sustainment of airman and guardians. Further evaluation of genetic predisposition to hypoxia induced cognitive decrement.					
FY 2023 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 306D / *Biomedical Impact and Readiness Optimization of Air & Space Operations (AF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increased funding due to realignment within Defense Health Program, Research, Development, Test and Evaluation (DHP RDT&E), Program Element (PE) 0602115DHA, from Project Codes 306B to 306D reflect deliberate focus on future readiness mission.					
Accomplishments/Planned Programs Subtotals	4.064	4.299	4.385	0.000	4.385

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Accomplishments: COVID-19 and viral detection within operational spaces, parametric high fidelity whole body human injury computational modeling, identification of operational vibration health risk mechanisms and mitigation strategies, quantified attributes associated with adaptations to stressors of high performance flight, and catalog the neural time course to recovery from hypoxic exposure.

D. Acquisition Strategy

Air Force Contracting, Interagency Agreements, and Inter-service Support Agreements with the U.S. Army, U.S. Navy, and the Department of Homeland Security are used to support ongoing scientific and technical efforts within this program. These agreements are supplemented with Broad Area Announcements (BAA) and Intramural calls for proposals, which are used to award initiatives in this project following determinations of scientific and technical merit, validation of need, prioritization, selection and any necessary legal and / or regulatory approvals (IRB, etc.).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372: *GDF - Applied Biomedical Technology*	399.163	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: GDF Applied Biomedical Technology ***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. ***FY 2022 Plans:*** N/A - $0 ***FY 2023 Base Plans:*** N/A - $0 ***FY 2023 OCO Plans:*** N/A - $0 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** N/A - $0	0.000	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	0.000	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 2023 Defense Health Agency		Date: April 2022
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)

Remarks

D. Acquisition Strategy

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.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372A: *GDF - ABT (Combat Casualty Care)*	0.000	14.855	15.151	17.459	0.000	17.459	18.789	19.125	19.468	19.817	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Joint Battlefield Healthcare (Formerly Combat Casualty Care)	14.855	15.151	17.459	0.000	17.459
Description: Joint Battlefield Healthcare (formerly Combat Casualty Care) applied research activities are focused on care the areas of prolonged field care; pre-hospital tactical combat casualty care; battlefield traumatic brain injury/neurotrauma; and burn injury. ***FY 2022 Plans:*** Conduct Joint Battlefield Healthcare (formerly 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 2023 Base Plans:*** Will continue Joint Battlefield Healthcare (formerly 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 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds moved from Project Code 372C to further support Combat Casualty Care applied research efforts.					
Accomplishments/Planned Programs Subtotals	14.855	15.151	17.459	0.000	17.459

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372B: *GDF - ABT (Military Operational Medicine)*	0.000	26.255	26.779	34.706	0.000	34.706	35.357	36.061	36.785	37.523	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 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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Military Health and Recovery (Formerly Military Operational Medicine)	26.255	26.779	34.706	0.000	34.706
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 2022 Plans:*** Support efforts focused 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 2023 Base 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					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
for environmental health hazards; protection and performance sustainment in extreme environments; and optimization of psychological health and resilience. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds moved from Project Code 372D to further support Military Operational Medicine musculoskeletal injury prevention & treatment applied research efforts.					
Accomplishments/Planned Programs Subtotals	26.255	26.779	34.706	0.000	34.706

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372C: *GDF - ABT (Medical Simulation & Training/Health Informatics)*	0.000	10.611	10.826	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Medical Simulation Technologies (Formerly Medical Simulation Technologies & Training/Health Informatics)	10.611	10.826	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 2022 Plans: 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.					
FY 2023 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Funds moved to Project Codes 372A and 372E to support Combat Casualty Care and Military Infectious Diseases (wound infections) applied research efforts. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding change reflects planned lifecycle of this effort.					
Accomplishments/Planned Programs Subtotals	10.611	10.826	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 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372D: *GDF - ABT (Clinical and Rehabilitation Medicine)*	0.000	7.064	7.204	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Clinical and Rehabilitation Medicine	7.064	7.204	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 2022 Plans:*** 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. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds moved to Project Code 372B to support Military Operational Medicine musculoskeletal injury prevention & treatment applied research efforts.					
Accomplishments/Planned Programs Subtotals	7.064	7.204	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372E: *GDF - ABT (Military Infectious Disease)*	0.000	8.607	8.779	18.995	0.000	18.995	18.396	18.804	19.220	19.644	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Military Infectious Diseases	8.607	8.779	18.995	0.000	18.995
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 2022 Plans:*** Identify and optimize lead drug compounds to identify emerging infectious diseases (EID) countermeasure candidates for human studies. Test lead drug candidates for safety and toxicity in animals. Down-select lead candidates as an EID drug for use in humans. Optimize antigens and platforms for use in animal studies. Evaluate new immunoprophylactic candidates for safety, effectiveness, and immunogenicity in animal models to advance to human clinical trials. Optimize and test of antigens and vaccine platforms for Dengue. Demonstrate efficacy and safety of dengue vaccine candidates in animal models. Support wound infections prevention and treatment applied medical research. ***FY 2023 Base Plans:*** Will continue to support wound infections and EID countermeasures development. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds moved from Project Code 372C to support wound infections applied research efforts.					
Accomplishments/Planned Programs Subtotals	8.607	8.779	18.995	0.000	18.995

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372F: *GDF - ABT (Radiological Health Effects)*	0.000	0.966	0.986	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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Radiological Health Effects	0.966	0.986	0.000	0.000	0.000
Description: Research will support discovery of one to two Medical Countermeasures (MCMs) candidates to development toward Technology Readiness Leve 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 2022 Plans:*** Continue research toward the development of prophylactic medical countermeasures against acute radiation exposures and supporting mechanistic science and animal development. ***FY 2023 Base Plans:*** N/A ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Radiation Health Effects has been moved under Combat Casualty Care.					
Accomplishments/Planned Programs Subtotals	0.966	0.986	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
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

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
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 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
372G: *GDF - ABT (Medical Technology)*	0.000	0.000	0.000	83.464	0.000	83.464	84.886	92.783	94.188	94.188	Continuing	Continuing

A. Mission Description and Budget Item Justification

Funding and mission realignment of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737) in support of Medical & Biomedical Technology.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: GDF - ABT (Biomedical Technology) ***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 Technology from Army PEs 0602115A & 0602787A. ***FY 2022 Plans:*** N/A ***FY 2023 Base Plans:*** Efforts will focus on Applied Research in support of Medical Technology. ***FY 2023 OCO Plans:*** N/A ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increase for this Project was due to transfer/realignment from Army.	0.000	0.000	83.464	0.000	83.464
Accomplishments/Planned Programs Subtotals	0.000	0.000	83.464	0.000	83.464

	FY 2021	FY 2022
Congressional Add: Add input ***FY 2021 Accomplishments:*** N/A ***FY 2022 Plans:*** N/A	0.000	0.000
Congressional Adds Subtotals	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency		Date: April 2022
Appropriation/Budget Activity 0130 / 2	**R-1 Program Element (Number/Name)** PE 0602115DHA / *Applied Biomedical Technology*	**Project (Number/Name)** 372G / *GDF - ABT (Medical Technology)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Defense Health Agency			Date: April 2022
Appropriation/Budget Activity 0130 / 2	R-1 Program Element (Number/Name) PE 0602115DHA / *Applied Biomedical Technology*	Project (Number/Name) 447A / *Military HIV Research Program (Army)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
447A: *Military HIV Research Program (Army)*	56.898	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 conducts research on the human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS). This effort supports the Administration's priorities in the area of international scientific partnership in global health engagement. Work in this area includes refining improved identification methods to determine genetic diversity of the virus and evaluating and preparing overseas sites for clinical trials with global vaccine candidates. Additional activities include refining candidate vaccines for preventing HIV and undertaking preclinical studies (studies required before testing in humans) to assess vaccine for potential to protect and/or manage the disease in infected individuals. This project is jointly managed through an Interagency Agreement between U.S. Army Medical Research and Materiel Command (USAMRMC) and the National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health. This project contains no duplication of effort within the Military Departments or other government organizations. The cited work is also consistent with the Assistant Secretary of Defense, Research and Engineering Science and Technology focus areas, and supports the principal area of Military Relevant Infectious Diseases to include HIV.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Title: Military HIV Research Program ***Description:*** This project conducts research on HIV, which causes AIDS. Work in this area includes refining improved identification methods to determine genetic diversity of the virus and evaluating and preparing overseas sites for future vaccine trials. Additional activities include refining candidate vaccines for preventing HIV and undertaking preclinical studies (studies required before testing in humans) to assess vaccine for potential to protect and/or manage the disease in infected individuals.	0.000	-	-	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The program receives periodic funding from Division of AIDS of NIAID ranging from $10-20 million per year through an Interagency Agreement with USAMRMC.

D. Acquisition Strategy

N/A